AERO

2019-20

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
B.E. AEROSPACE ENGINEERING
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM
I TO VIII SEMESTERS CURRICULA AND SYLLABI

SEMESTER I

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1	HS8151	Communicative English	HS	4	4	0	0	4
2	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3	PH8151	Engineering Physics	BS	3	3	0	0	3
4	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	31	19	0	12	25

SEMESTER II

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1	HS8251	Technical English	HS	4	4	0	0	4
2	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3	PH8251	Materials Science	BS	3	3	0	0	3
4	BE8253	Basic Electrical, Electronics and Instrumentation Engineering	ES	3	3	0	0	3
5	AC8201	Introduction to Aerospace Engineering	PC	3	3	0	0	3
6	GE8292	Engineering Mechanics	ES	5	3	2	0	4
PRACTICALS								
7	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8	BE8261	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	ES	4	0	0	4	2
			TOTAL	30	20	2	8	25

ANNA UNIVERSITY :: CHENNAI - 600025.
OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of Nov. / Dec. Examination, 2019 [R-2017].

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 01** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 110-B.E. Aerospace Engineering

	Subject Code - >	BS8161	CY8151	GE8151	GE8152	GE8161	HS8151	MA8151	PH8151
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312819110001	ABIRAMI S	B+	B	U	A+	O	B	B	U
312819110002	ABRAHAM E	A	B	U	A	B	B	U	B
312819110003	ASHIQ ALI A	B	B	U	B+	A	U	U	U
312819110004	DEVADHARSHINI U	O	A	B	B+	O	B+	B+	A+
312819110005	HEMNARTH V	O	B	U	B	A+	B	B+	B+
312819110006	JEEVANANTHAM S	O	A	U	A	O	B+	B+	A
312819110007	JENARTHAN M	A+	B+	U	B	A	B+	B	B
312819110008	NASITH RAHAMAN S	A	B+	U	B	B+	B	U	B
312819110009	NAVEEN K	A	B	B	A+	B	U	B	B
312819110010	PARTHIBAN T	O	A	B	A+	O	B+	A	A
312819110011	ROHANTH F L	B+	B	U	B	B+	A	B	U
312819110012	SRIRAM S	A+	B+	B+	A+	O	B+	B	B
312819110013	SUBHIKSHA M	A+	B+	B	O	O	A	B+	B
312819110015	YUKESH M	O	A	B	O	O	B+	A	B+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

30-01-2020

Anna University - COE

ANNA UNIVERSITY :: CHENNAI - 600025.
OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of Nov. / Dec. Examination, 2019 [R-2017].

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 01** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 110-B.E. Aerospace Engineering

	Subject Code - >	BS8161	CY8151	GE8151	GE8152	GE8161	HS8151	MA8151	PH8151
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312819110001	ABIRAMI S	B+	B	U	A+	O	B	B	U
312819110002	ABRAHAM E	A	B	U	A	B	B	U	B
312819110003	ASHIQ ALI A	B	B	U	B+	A	U	U	U
312819110004	DEVADHARSHINI U	O	A	B	B+	O	B+	B+	A+
312819110005	HEMNARTH V	O	B	U	B	A+	B	B+	B+
312819110006	JEEVANANTHAM S	O	A	U	A	O	B+	B+	A
312819110007	JENARTHAN M	A+	B+	U	B	A	B+	B	B
312819110008	NASITH RAHAMAN S	A	B+	U	B	B+	B	U	B
312819110009	NAVEEN K	A	B	B	A+	B	U	B	B
312819110010	PARTHIBAN T	O	A	B	A+	O	B+	A	A
312819110011	ROHANTH F L	B+	B	U	B	B+	A	B	U
312819110012	SRIRAM S	A+	B+	B+	A+	O	B+	B	B
312819110013	SUBHIKSHA M	A+	B+	B	O	O	A	B+	B
312819110015	YUKESH M	O	A	B	O	O	B+	A	B+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

30-01-2020

Anna University - COE

BME
2019-20

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
B.E. BIOMEDICAL ENGINEERING
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM
I - VIII SEMESTERS CURRICULA AND SYLLABI

SEMESTER I

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	31	19	0	12	25

SEMESTER II

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8253	Physics for Electronics Engineering	BS	3	3	0	0	3
4.	BM8251	Engineering Mechanics for Biomedical Engineers	ES	3	3	0	0	3
5.	BM8201	Fundamentals of Bio Chemistry	PC	3	3	0	0	3
6.	EC8251	Circuit Analysis	PC	4	4	0	0	4
PRACTICALS								
7.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8.	BM8211	Bio Chemistry Laboratory	PC	4	0	0	4	2
			TOTAL	29	21	0	8	25

SEMESTER III

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8352	Linear Algebra and Partial Differential Equations	BS	4	4	0	0	4
2.	EC8352	Signals and Systems	PC	4	4	0	0	4
3.	BM8351	Anatomy and Human Physiology	PC	3	3	0	0	3
4.	BM8301	Sensors and Measurements	PC	4	2	0	2	3
5.	EC8353	Electron Devices and Circuits	PC	3	3	0	0	3
6.	BM8302	Pathology and Microbiology	PC	3	3	0	0	3
PRACTICALS								
7.	BM8311	Pathology and Microbiology Laboratory	PC	4	0	0	4	2
8.	BM8312	Devices and Circuits Laboratory	PC	4	0	0	4	2
9.	BM8313	Human Physiology Laboratory	PC	2	0	0	2	1
			TOTAL	**31**	**19**	**0**	**12**	**25**

SEMESTER IV

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8391	Probability and Statistics	BS	4	4	0	0	4
2.	BM8401	Medical Physics	PC	3	3	0	0	3
3.	EE8452	Basics of Electrical Engineering	ES	3	3	0	0	3
4.	EC8453	Linear Integrated Circuits	PC	3	3	0	0	3
5.	EC8393	Fundamentals of Data Structures In C	ES	3	3	0	0	3
6.	EC8392	Digital Electronics	PC	3	3	0	0	3
PRACTICALS								
7.	EC8381	Fundamentals of Data Structures In C Laboratory	ES	4	0	0	4	2
8.	BM8411	Integrated Circuits Laboratory	PC	4	0	0	4	2
			TOTAL	**27**	**19**	**0**	**8**	**23**

SEMESTER V

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	EC8394	Analog and Digital Communication	PC	3	3	0	0	3
2.	BM8501	Biocontrol Systems	PC	4	4	0	0	4
3.	BM8502	Biomedical Instrumentation	PC	3	3	0	0	3
4.	EC8553	Discrete-Time Signal Processing	PC	4	4	0	0	4
5.		Professional Elective - I	PE	3	3	0	0	3
6.		Open Elective -I	OE	3	3	0	0	3
PRACTICALS								
7.	EC8562	Digital Signal Processing Laboratory	PC	4	0	0	4	2
8.	BM8511	Biomedical Instrumentation Laboratory	PC	4	0	0	4	2
9.	HS8381	Interpersonal Skills/Listening & Speaking	EEC	2	0	0	2	1
			TOTAL	**30**	**20**	**0**	**10**	**25**

SEMESTER VI

SI. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	EC8691	Microprocessors and Microcontrollers	PC	3	3	0	0	3
2.	BM8601	Diagnostic and Therapeutic Equipment - I	PC	3	3	0	0	3
3.	BM8651	Biomechanics	PC	3	3	0	0	3
4.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
5.	MD8091	Hospital Management	PC	3	3	0	0	3
6.		Professional Elective - II	PE	3	3	0	0	3
PRACTICALS								
7.	EC8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
8.	BM8611	Diagnostic and Therapeutic Equipment Laboratory	PC	4	0	0	4	2
9.	BM8612	Mini Project	EEC	2	0	0	2	1
10.	HS8581	Professional Communication	EEC	2	0	0	2	1
			TOTAL	**30**	**18**	**0**	**12**	**24**

SEMESTER VII

SI. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	BM8701	Diagnostic and Therapeutic Equipment - II	PC	3	3	0	0	3
2.	EC8093	Digital Image Processing	PC	3	3	0	0	3
3.	BM8702	Radiological Equipments	PC	3	3	0	0	3
4.	BM8703	Rehabilitation Engineering	PC	3	3	0	0	3
5.		Professional Elective III	PE	3	3	0	0	3
6.		Open Elective -II	OE	3	3	0	0	3
PRACTICALS								
7.	EC8762	Digital Image Processing Laboratory	PC	4	0	0	4	2
8.	MD8751	Hospital Training	EEC	4	0	0	4	2
			TOTAL	26	18	0	8	22

SEMESTER VIII

SI. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.		Professional Elective IV	PE	3	3	0	0	3
2.		Professional Elective V	PE	3	3	0	0	3
PRACTICALS								
3.	BM8811	Project Work	EEC	20	0	0	20	10
			TOTAL	26	6	0	20	16

TOTAL NO. OF CREDITS:185

PROFESSIONAL ELECTIVES (PE)

SEMESTER V
ELECTIVE I

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	BM8071	Bio MEMS	PE	3	3	0	0	3
2.	EC8075	Nano Technology and Applications	PE	3	3	0	0	3
3.	BM8072	Biomaterials	PE	3	3	0	0	3
4.	BM8001	Medical Optics	PE	3	3	0	0	3
5.	GE8074	Human Rights	PE	3	3	0	0	3
6.	GE8077	Total Quality Management	PE	3	3	0	0	3

SEMESTER VI
ELECTIVE II

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	BM8074	Biosignal Processing	PE	3	3	0	0	3
2.	BM8002	Artificial organs and Implants	PE	3	3	0	0	3
3.	MD8071	Telehealth Technology	PE	3	3	0	0	3
4.	BM8003	Biofluids and Dynamics	PE	3	3	0	0	3
5.	GE8075	Intellectual Property Rights	PE	3	3	0	0	3

SEMESTER VII
ELECTIVE III

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MD8752	Physiological Modeling	PE	3	3	0	0	3
2.	BM8004	Robotics in Medicine	PE	3	3	0	0	3
3.	CS8081	Internet of Things	PE	3	3	0	0	3
4.	BM8078	Soft Computing Techniques	PE	3	3	0	0	3
5.	GE8072	Foundation Skills in Integrated Product Development	PE	3	3	0	0	3
6.	GE8071	Disaster Management	PE	3	3	0	0	3

SEMESTER VIII
ELECTIVE IV

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	BM8079	Virtual Reality and Augmented Reality	PE	3	3	0	0	3
2.	BM8077	Hospital Waste Management	PE	3	3	0	0	3
3.	BM8005	Neural Engineering	PE	3	3	0	0	3
4.	BM8073	Biometric Systems	PE	3	3	0	0	3
5.	GE8076	Professional Ethics in Engineering	PE	3	3	0	0	3

SEMESTER VIII
ELECTIVE - V

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	BM8076	Electrical Safety and Quality Assurance	PE	3	3	0	0	3
2.	BM8006	Ergonomics	PE	3	3	0	0	3
3.	BM8075	Brain Computer Interface and its Applications	PE	3	3	0	0	3
4.	EC8791	Embedded and Real time Systems	PE	3	3	0	0	3
5.	GE8073	Fundamentals of Nano Science	PE	3	3	0	0	3

***Professional Electives are grouped according to elective number as was done previously.**

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8381	Interpersonal Skills/Listening & Speaking	EEC	2	0	0	2	1
2.	BM8612	Mini Project	EEC	2	0	0	2	1
3.	HS8581	Professional Communication	EEC	2	0	0	2	1
4.	MD8751	Hospital Training	EEC	4	0	0	4	2
5.	BM8811	Project Work	EEC	20	0	0	20	10

SEMESTER VII

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	BM6701	Pattern Recognition and Neural Networks	3	0	0	3
2.	BM6702	Medical Informatics	3	0	0	3
3.	BM6703	Medical Optics	3	0	0	3
4.	IT6005	Digital Image Processing	3	0	0	3
5.		Elective II	3	0	0	3
6.		Elective III	3	0	0	3
PRACTICAL						
7.	BM6711	Hospital Training	0	0	3	2
8.	BM6712	Digital Image Processing Laboratory	0	0	3	2
		TOTAL	**18**	**0**	**9**	**22**

SEMESTER VIII

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	BM6801	Rehabilitation Engineering	3	0	0	3
2.		Elective IV	3	0	0	3
3.		Elective V	3	0	0	3
4.		Elective VI	3	0	0	3
PRACTICALS						
5.	BM6811	Project Work	0	0	12	6
		TOTAL	**9**	**0**	**12**	**18**

TOTAL NO. OF CREDITS: 187

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 07** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 121-B.E. Bio Medical Engineering

	Subject Code - >	BM6006	BM6701	BM6702	BM6703	BM6711	BM6712	CS6551	IT6005	MD6010
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312814121010	GOWTHAM V		U							
312814121045	VIGNESH N	UA								
312814121046	VISHNU S	UA	UA	UA						
312815121002	CATHERIN NIVETHA A							E		
312815121011	JAGADEESH T				E					
312815121048	VIGNESH G				E					
312815121501	MUHAMMAD THAMEEZUDEEN J		UA	D	U		UA	UA	E	UA
312816121001	AJITH KUMAR M		E	C	D	B	B	D	E	E
312816121002	AKASH K		D	C	D	A	S	D	E	U
312816121003	AKILA M		C	A	B	S	S	C	C	E
312816121004	AMRIN MAHMOOTHA T A		B	A	C	S	S	C	C	D
312816121005	ASHWIN JAYARAM R P		E	C	E	A	S	E	C	E
312816121006	ATCHAYA S		C	A	C	S	S	D	A	C
312816121007	BRINDHADHEVI C I		E	C	U	B	A	D	U	E
312816121008	DIVYA P		U	C	D	S	S	U	C	E
312816121009	ELAKKIYA K		B	A	B	A	A	C	C	E
312816121010	FATHIMA A		B	B	B	A	S	D	B	D
312816121011	GAYATHRI D		C	B	D	S	S	C	C	D
312816121012	GAYATHRI M R		B	B	C	S	S	C	B	D
312816121013	JAHANA PARVIN A		U	B	C	S	S	C	C	D
312816121014	JANANI S		D	C	D	S	S	E	C	U
312816121015	JEEVIGA J		B	B	B	S	S	C	A	C
312816121016	JENIFER SARAH SOUNDARYA R		D	C	E	S	S	E	C	E
312816121017	JOSHUA PAUL A		C	B	C	S	S	C	B	E
312816121018	KAVIYA S		B	B	C	S	S	D	B	D
312816121019	KEERTHANA V		C	B	C	S	S	C	B	D
312816121020	KEERTHIKA S		D	C	C	S	S	E	A	D
312816121021	KRISHNA PRIYA S		E	B	C	S	S	C	B	C
312816121022	LAKSHMIPRIYA J		A	B	C	S	S	C	B	B
312816121023	LAXI HARSHA N C S		D	C	B	S	S	C	E	C
312816121024	MANIKUMAR T		D	B	U	S	A	D	D	E
312816121025	MANJU S		B	A	D	S	S	C	D	C
312816121026	MEENATCHI SUNDAR N		C	B	C	S	S	D	B	D

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312816121027	MONISHA A		D	D	U	S	B	U	C	E
312816121028	MUNEESDHARANI M		D	E	D	S	S	U	B	U
312816121029	NITHYA SHREE M		C	B	D	A	S	D	A	C
312816121030	PREETHI M (19-12-1998)		C	C	D	A	A	D	C	C
312816121031	PREETHI M (14-07-1999)		C	C	C	S	S	D	C	E
312816121032	PUNITHA VALLI E		U	C	E	A	A	D	E	E
312816121034	RAM KUMAR B		E	E	C	S	A	D	B	E
312816121035	RAMYA K		E	A	C	C	S	C	C	C
312816121036	RANJAN T		C	B	C	A	A	C	C	D
312816121038	SANDHIYA K		C	E	E	A	B	C	C	E
312816121039	SANDHIYA T		C	B	C	S	B	C	A	D
312816121040	SANTHOSH KUMAR P		C	B	C	S	A	C	A	E
312816121041	SHALINI S		D	C	C	S	S	D	D	D
312816121042	SHARANYA KALA R		B	C	C	A	A	C	D	D
312816121043	SHAREEN M		D	C	C	S	A	C	C	E
312816121044	SHIJUMON S		C	B	D	A	S	C	C	E
312816121045	SNEHA V		A	A	C	S	S	C	B	C
312816121046	SOWMIYA V		D	B	E	A	A	C	C	C
312816121047	SOWMYA E		C	B	E	B	B	B	C	C
312816121049	SUBITHRA C		C	B	C	A	S	C	C	E
312816121050	SUGANYA K		D	B	C	S	S	C	B	D
312816121051	SWATHI R		A	A	C	S	S	C	A	C
312816121052	THIRUNAVUKKARASU A		C	C	C	S	A	D	B	D
312816121053	VAISHNAVI R		B	B	C	S	S	D	B	C
312816121054	VARADHARAJAN L		D	E	U	A	C	E	D	U
312816121701	SURYA PRAKASH V		E	E	D	A	B	C	D	E

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 01** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 121-B.E. Bio Medical Engineering

	Subject Code - >	BS8161	CY8151	GE8151	GE8152	GE8161	HS8151	MA8151	PH8151
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817121010	DARSHINI K							B	
312817121026	KEMILA A							B+	
312817121029	MAKHISH KA							U	
312817121038	PRABAKARAN S							B	
312817121039	PRAVEEN SAGAR M							B	
312817121049	SHAJITH AKASH G							U	
312817121050	SHAJU GEORGE B							U	
312817121058	THANGAPRIYADHARSHINI T							U	U
312818121006	DESIKA M							B	U
312818121008	GOKULRAM S			U				U	U
312818121017	MAHALAKSHMI M				U			U	U
312818121018	MARIKUMARAN M			U	U			U	B
312818121019	MATHAN KUMAR V			B					
312818121020	MOHAMED HABEEB S S SUHAIL		U	U				U	U
312818121023	NARENDRAN G							U	B
312818121024	NAVEEN KUMAR S		U					B	U
312818121029	PURUSHOTHAMAN K			U				U	
312818121036	SUGUMAR K							B	
312818121037	TAMIL SELVAN R							U	
312818121038	VENKATESH S		U					U	
312818121039	VENKATRAMAN S							B	
312818121040	VIGNESH RAJU P							U	
312818121701	SAIRAN AZEEMA S							U	
312819121001	AAKASH V	O	A+	B+	B+	O	B	A+	A+
312819121002	ABINAYA A	A+	A	B	B	O	U	U	A
312819121003	ARUNA V	O	A+	B+	A+	O	U	A+	A
312819121004	ATHIRA ARAVIND	A+	A	B	B+	O	B	U	A+
312819121005	BALAMANIKANDAN MP	O	A+	B+	O	O	A	B+	A+
312819121006	BARATH PADMANABAN V	A	B	B	U	A	B	B	U
312819121007	BAVASHREE S	B+	A	B	B+	A	B	U	B
312819121008	BHARATH J	O	A+	B	A+	O	B	U	B+
312819121009	DEEPALAKSHMI A	O	A+	B	U	A+	B+	B	B+
312819121010	DHANUSH KODI K	A+	B+	U	A	A+	U	B	B

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312819121011	DINESH KUMAR S	A+	B	U	B+	A+	U	U	U
312819121012	DIVYA BHARATHI G	O	A	B	A	O	B	U	B
312819121013	GOBIKHA JEBA RANI JV	O	O	B	A+	O	B+	B	B
312819121014	HARSHAVARDHINI PM	O	O	B+	A+	A+	B+	A	A
312819121015	ISAIYARASAN R	A	B+	B	B	A	U	U	B
312819121016	JAYASRI J	O	A	B+	A	O	A+	B+	A
312819121017	JEYAPRAKASH J	A+	A	U	A	A	U	U	B+
312819121018	KALAISELVAN S	B	U	U	U	A	U	U	U
312819121019	KARTHIK SUNDARAM N	A+	B	U	A+	A+	U	B	B
312819121020	KEERTHANA R	B	B	U	U	A	U	UA	U
312819121021	KEVINKUMAR G	A+	B+	U	B	A+	U	B	B
312819121022	LAKSHMI R	A+	B	U	B+	A	U	U	B
312819121023	LOKESHWAR V	A	B+	U	A	A+	B+	B	B
312819121024	MAGESHWARI R	A+	A+	B	A	A+	U	B	A
312819121025	MYTHILI L	O	B+	B	A	O	B	B	A
312819121026	PAVITHRA B	A+	B+	U	B	O	U	U	B+
312819121027	PAVITHRA M	A+	A	U	B+	A+	B	B	A
312819121028	POOJA B	UA	UA	UA	UA	UA	UA	UA	UA
312819121029	PRADEEP K	A+	B+	U	B+	A+	B	B	B
312819121030	PRASANNA V	A+	A	U	A	A+	B	U	B+
312819121031	PRAVEEN KUMAR S	O	A+	B	A	O	B+	A	B+
312819121032	PRIYADARSHAN K	O	A	U	B	O	U	B	B+
312819121033	PURUSHOTHAMAN K	A	A+	U	B+	O	U	U	A
312819121034	RAMYA R	O	A+	U	A	O	B+	B+	A
312819121035	RITHIK KUMAR D	A+	B+	U	A	A+	U	B+	B+
312819121036	SAI NITHIN S	A	B	U	B	A	B	U	U
312819121037	SAMYUKTHA C	O	B	U	A	O	B+	B+	B
312819121038	SARAVANAN V	A+	B	B	A	A+	B	B+	B+
312819121039	SHRIVARSHAN H	A	B	U	B	A+	B+	B	U
312819121040	SOWMIYA S	O	A	U	A	A+	B	U	B
312819121041	SRUTHI M	O	A	B	A	O	B	B	B
312819121042	SURESHINI R	O	A+	B	B+	O	B+	B+	B
312819121043	SUVETHA D R	O	A+	A	B	O	B+	B+	A+
312819121044	SWETHAA SREE C S	A+	B+	U	B+	A+	B+	B	B
312819121045	UMA BHARATH U	A+	A+	U	A	O	U	B+	B
312819121046	VEERABATHIRAN V	A+	U	U	B	A	B	U	B
312819121047	VENKADESAN E	A+	A+	U	B+	A+	A	A	A+
312819121048	VIDHYA E	O	O	B	B	A+	B+	A	A+
312819121049	VIGNESHWARAN A	A	B+	U	B	A+	B	B	U
312819121050	VIJAYRAJ V	B+	B	U	U	A	U	U	U

312819121051	VINO G	UA	UA	UA	UA	UA	UA	UA	UA
312819121052	YUVARAJ V	A	B	B	B+	A+	A	B+	B

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 03** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 121-B.E. Bio Medical Engineering

	Subject Code - >	BM8301	BM8302	BM8311	BM8312	BM8313	BM8351	EC8352	EC8353	MA8352
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817121006	BALAJI R	U								
312817121010	DARSHINI K	B+								
312817121013	DIKSHA DS							U		U
312817121015	DIVYA BHARATHY R									B
312817121016	EVANIC JASMON A									U
312817121019	HEMA PRIYA R	UA						UA	UA	UA
312817121020	JABATINI J								B	U
312817121022	KAMAL RAJ S									U
312817121026	KEMILA A								B	UA
312817121028	MAHESH T								B	
312817121029	MAKHISH KA	UA						U	U	UA
312817121032	MOHAMED FAIZAL S									U
312817121037	PAVITHRA N							UA		UA
312817121038	PRABAKARAN S							U		U
312817121039	PRAVEEN SAGAR M	U								U
312817121040	PUNITHA T							UA		U
312817121042	RAJU A						U		U	
312817121049	SHAJITH AKASH G	U	UA						U	U
312817121050	SHAJU GEORGE B									U
312817121051	SHALINI V									B
312817121058	THANGAPRIYADHARSHINI T						UA			UA
312818121001	AATHITHYAN P	B	B	A+	B+	O	B+	U	B	B
312818121002	BHARATHRAJ A	B	B+	O	O	O	B+	B+	B+	B
312818121003	BHAVADHARANI R	A	B+	O	O	O	A	A	B+	B
312818121004	BHUVANA S	B+	B+	A+	O	O	B+	B+	B	B
312818121005	BHUVANESH B	A	B+	O	O	O	A	B+	B+	B
312818121006	DESIKA M	U	B	A+	O	O	B+	B	B	U
312818121007	GAYATHRI R	B+	B	O	A	O	B+	U	B	U
312818121008	GOKULRAM S	U	U	B+	B+	A+	U	U	U	U
312818121009	GOPI E	A	B+	O	O	O	A	A	U	B+
312818121010	GOWRI PRIYA R	B+	B	O	O	O	A	B	B	B
312818121011	HARIHARAN J	B	U	O	O	O	B+	U	U	U
312818121012	HEMALATHA A	A	A+	O	O	O	A+	B+	A	B+
312818121013	JACINTH HEPHZIBAH A	A	A	A+	O	O	A	B+	U	U

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312818121014	JEEVITHA T	A+	A+	O	O	O	A+	B+	B+	A
312818121015	KARPAGAVALLI E	A	A	A+	O	O	A+	B+	A	B+
312818121016	KRISHNA RAJ R	B+	B+	O	A+	O	B+	B	B	B+
312818121017	MAHALAKSHMI M	B	B	A+	O	O	B	U	B	U
312818121018	MARIKUMARAN M	U	B+	A+	A+	O	B	U	B	U
312818121019	MATHAN KUMAR V	B	U	A+	A	O	U	B+	B+	B
312818121020	MOHAMED HABEEB S S SUHAIL	U	U	A	A	O	U	U	U	U
312818121021	MONISHA M	B+	A	O	A	O	B+	B	U	B
312818121022	MUNUSAMY R	B+	B+	A+	B+	O	B+	B	U	U
312818121023	NARENDRAN G	B	A	A+	O	O	B+	U	U	U
312818121024	NAVEEN KUMAR S	U	B+	A+	A+	O	B	U	U	U
312818121025	NIVEDAA SREE S	B+	A	O	A+	O	B+	U	U	U
312818121026	PARAMESWARI P	B+	B	A+	O	O	B+	B	B	B+
312818121027	POOJA T M	B	B+	O	O	O	B+	U	B	B
312818121028	PREETHI V	B+	A	O	O	O	A+	B+	A+	B+
312818121029	PURUSHOTHAMAN K	B	B+	A+	A	O	B+	U	B	U
312818121030	SAISANJANA G	B+	B+	O	O	O	A	B	B+	U
312818121031	SAVITHASREE N	B	B+	O	O	O	B+	U	U	B+
312818121032	SHANMUGAPRIYA P	B+	B+	O	O	O	B+	B+	U	A
312818121033	SHARMILA R	A+	A	O	O	O	A+	B+	B	A+
312818121034	SUBHA R	B+	B	O	O	O	B	B	B	B
312818121036	SUGUMAR K	U	U	A+	A+	A+	U	B	B	U
312818121037	TAMIL SELVAN R	B	B+	O	O	O	U	B+	B	U
312818121038	VENKATESH S	U	B	A	O	A+	U	B	B	U
312818121039	VENKATRAMAN S	U	B	A+	O	O	U	U	U	U
312818121040	VIGNESH RAJU P	U	B	A+	A+	A+	U	U	U	U
312818121041	VINOTHKUMAR S	B+	B	O	O	O	B+	B+	A	B
312818121042	YESUDHAS D	B	U	A	O	O	B	B	U	U
312818121701	SAIRAN AZEEMA S	A	A+	O	O	O	A	U	A	B

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 05** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 121-B.E. Bio Medical Engineering

	Subject Code - >	BM8072	BM8501	BM8502	BM8511	EC8394	EC8553	EC8562	HS8381	OBT553
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817121001	ABISHA KM	B+	B+	B+	A+	B+	B	A+	O	A+
312817121002	ABITH V	B+	B	B+	A+	B+	B+	A+	O	A
312817121004	AMALA PAUL PS	B+	B+	B+	O	A	A	O	O	A+
312817121005	ANITHA G	A	B+	A	O	A	A	O	O	A+
312817121006	BALAJI R	B	U	B	A+	U	B+	B+	O	A
312817121007	BHARGAVI G	A+	A	A+	O	B+	A+	O	O	A+
312817121008	BOOJA MN	A+	B	B+	O	B+	A+	O	O	B+
312817121009	DAKSHINAMOORTHY R	B+	U	B+	O	B	B	A+	O	B+
312817121010	DARSHINI K	B+	B	B+	A+	B+	B+	B+	O	B+
312817121011	DEEPIKA M	A+	B+	A	O	A	A	O	O	A
312817121013	DIKSHA DS	A	B	B+	A+	B	B	B+	O	B+
312817121014	DINESHKUMAR S	B+	B	A	A+	B+	B+	O	O	B+
312817121015	DIVYA BHARATHY R	B+	B+	A+	O	A	B+	A+	O	B
312817121016	EVANIC JASMON A	B	U	B+	A	U	B	A+	O	B+
312817121017	GOMATHI A	A	A	B+	O	B+	B+	O	O	A
312817121018	GURUMOORTHY M	B	B	B+	O	B	B+	O	O	A
312817121019	HEMA PRIYA R	U	U	B+	A+	UA	U	A+	O	B+
312817121020	JABATINI J	B	B+	A	A+	A	A+	A+	O	A+
312817121021	JAINAB NISHA A	U	B+	B	O	B	A	O	O	A
312817121022	KAMAL RAJ S	B	A	B+	O	B+	A	O	O	A+
312817121023	KAREN DELCIA R	A	B+	B	O	B	B+	A	O	A+
312817121024	KARPAGA DEVI V	B+	U	B	A+	B	B+	A+	O	A+
312817121025	KARTHIK S	B+	B	B	O	B+	B+	A+	O	A
312817121026	KEMILA A	U	B	B	O	B+	B+	O	O	A
312817121028	MAHESH T	U	U	A	A+	B+	B+	A+	O	B
312817121029	MAKHISH KA	U	B	U	A	U	B	A	O	B
312817121030	MANIKANDAN K	B	U	B	A+	B+	B+	A+	O	A+
312817121031	MANOJ G	B	B	U	A	B	B	A	O	A
312817121032	MOHAMED FAIZAL S	B+	B+	A	O	A	B+	A	O	A+
312817121033	MOHAMMED MUSHEER M	A	B+	A+	O	A	A	O	O	A+
312817121034	NANDHINI A	A+	A	O	O	A+	A	O	O	A+
312817121035	NANDHINI K	A+	A	B+	O	B+	B+	A+	O	A
312817121036	NILA PD	O	A	B+	O	A+	A+	O	O	A+
312817121037	PAVITHRA N	B+	B	U	A+	B	U	O	O	B
312817121038	PRABAKARAN S	A	B+	B	A+	B	U	A+	O	B

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312817121039	PRAVEEN SAGAR M	B+	B	U	A+	B	B	B+	O	B
312817121040	PUNITHA T	B+	A	B	A+	B	U	A	O	B
312817121042	RAJU A	U	U	U	A	U	U	A+	O	U
312817121043	RAMYA T	A	B	B+	O	A+	B+	O	O	B+
312817121045	SAKTHI KIRUTHIKKA M	A	A	B+	O	A+	B+	O	O	A
312817121046	SARANRAJ N	A	B+	U	O	B+	B	O	O	B+
312817121047	SEETHA LAKSHMI V	A	B	A	A+	A	B	O	O	A
312817121048	SELSHIYA S	A+	B+	A+	O	A+	A+	O	O	A+
312817121049	SHAJITH AKASH G	U	U	U	A+	U	U	A	O	U
312817121050	SHAJU GEORGE B	B	U	B+	A+	B+	B	A	O	A
312817121051	SHALINI V	B+	B	B+	A+	B+	B+	A+	O	A+
312817121052	SINDHU D	A	B	A	O	B+	A	O	O	A+
312817121053	SONIYA S	A	B+	A+	O	A+	A+	O	O	A+
312817121054	SRIRAM I	B+	B	B	A	A	B	A+	O	A
312817121055	SUJITHA S	A	B	A	A+	A	B+	A+	O	A+
312817121056	SWATHI B	A	B+	A	O	B+	A+	O	O	A+
312817121057	TEENA V	B+	B	U	A	B	U	A+	O	A
312817121058	THANGAPRIYADHARSHINI T	B+	B	U	A+	U	B	A+	O	B+

ANNA UNIVERSITY :: CHENNAI - 600025.
OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of April / May Examination,2020.

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 08** **DATE OF PUBLICATION :17-10-2020**

Branch : 121-B.E. Bio Medical Engineering

	Subject Code - >	BM6010	BM6012	BM6801	BM6811	GE6083
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade
312814121045	VIGNESH N	C				
312814121046	VISHNU S			E		
312815121011	JAGADEESH T	D				
312815121015	JOEL SAMRAJ S			B		
312815121016	KALKI P	C		C		A
312815121501	MUHAMMAD THAMEEZUDEEN J	D	E			
312816121001	AJITH KUMAR M	B	C	C	S	B
312816121002	AKASH K	B	C	C	S	C
312816121003	AKILA M	A	A	A	S	A
312816121004	AMRIN MAHMOOTHA T A	A	B	A	S	B
312816121005	ASHWIN JAYARAM R P	B	C	C	S	C
312816121006	ATCHAYA S	A	B	B	S	B
312816121007	BRINDHADHEVI C I	B	C	C	S	C
312816121008	DIVYA P	B	B	B	S	B
312816121009	ELAKKIYA K	B	C	B	S	B
312816121010	FATHIMA A	A	C	B	S	B
312816121011	GAYATHRI D	C	B	B	S	A
312816121012	GAYATHRI M R	A	B	A	S	A
312816121013	JAHANA PARVIN A	A	B	B	S	B
312816121014	JANANI S	B	C	B	S	C
312816121015	JEEVIGA J	A	B	A	S	A
312816121016	JENIFER SARAH SOUNDARYA R	B	C	C	S	C
312816121017	JOSHUA PAUL A	B	C	B	S	C
312816121018	KAVIYA S	A	B	C	S	C
312816121019	KEERTHANA V	B	C	C	S	B
312816121020	KEERTHIKA S	A	C	A	S	A
312816121021	KRISHNA PRIYA S	A	B	A	S	A
312816121022	LAKSHMIPRIYA J	S	A	A	S	S
312816121023	LAXI HARSHA N C S	B	B	B	S	C
312816121024	MANIKUMAR T	B	C	A	S	A
312816121025	MANJU S	A	B	B	S	B
312816121026	MEENATCHI SUNDAR N	B	C	B	S	B
312816121027	MONISHA A	B	C	C	S	B

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312816121028	MUNEESDHARANI M	A	C	B	S	B
312816121029	NITHYA SHREE M	A	B	B	S	B
312816121030	PREETHI M (19-12-1998)	B	C	C	S	C
312816121031	PREETHI M (14-07-1999)	A	C	B	S	B
312816121032	PUNITHA VALLI E	C	C	C	S	B
312816121034	RAM KUMAR B	A	B	A	S	A
312816121035	RAMYA K	B	C	C	S	B
312816121036	RANJAN T	B	C	B	S	B
312816121038	SANDHIYA K	B	D	C	S	C
312816121039	SANDHIYA T	A	B	B	S	A
312816121040	SANTHOSH KUMAR P	B	B	B	S	B
312816121041	SHALINI S	A	B	B	S	B
312816121042	SHARANYA KALA R	B	C	B	S	B
312816121043	SHAREEN M	B	C	B	S	B
312816121044	SHIJUMON S	B	C	B	S	B
312816121045	SNEHA V	A	B	B	S	B
312816121046	SOWMIYA V	B	C	B	S	B
312816121047	SOWMYA E	B	B	C	S	A
312816121049	SUBITHRA C	A	C	B	S	B
312816121050	SUGANYA K	B	C	A	S	A
312816121051	SWATHI R	S	A	S	S	A
312816121052	THIRUNAVUKKARASU A	B	B	C	S	C
312816121053	VAISHNAVI R	A	B	A	S	B
312816121054	VARADHARAJAN L	B	D	C	S	B
312816121701	SURYA PRAKASH V	C	C	C	S	B

ANNA UNIVERSITY :: CHENNAI - 600025.
OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of April / May Examination,2020 [R-2017].

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 02** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 121-B.E. Bio Medical Engineering

	Subject Code - >	BM8201	BM8211	BM8251	EC8251	GE8261	HS8251	MA8251	PH8253
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312819121001	AAKASH V	O	O	O	O	O	O	O	O
312819121002	ABINAYA A	A+	O	A+	A	O	A+	A+	B+
312819121003	ARUNA V	O	O	O	O	O	O	O	O
312819121004	ATHIRA ARAVIND	A+	O	A+	A	O	A+	A	B+
312819121005	BALAMANIKANDAN MP	O	O	O	A+	O	O	O	O
312819121006	BARATH PADMANABAN V	B+	O	A+	A	O	A+	B	B
312819121007	BAVASHREE S	A+	O	A+	B+	O	A+	B+	B+
312819121008	BHARATH J	A+	O	A+	A	O	A+	B+	B+
312819121009	DEEPALAKSHMI A	A+	O	A+	A	O	A+	A	B+
312819121010	DHANUSH KODI K	A	O	B+	B+	O	B+	A+	B+
312819121011	DINESH KUMAR S	B	O	B	B	O	B+	B	B
312819121012	DIVYA BHARATHI G	A+	O	A+	B+	O	A+	A+	A
312819121013	GOBIKHA JEBA RANI JV	O	O	O	O	O	O	O	O
312819121014	HARSHAVARDHINI PM	O	O	O	O	O	O	O	O
312819121015	ISAIYARASAN R	B+	O	B	B+	O	A+	B	B
312819121016	JAYASRI J	O	O	O	A+	O	O	O	O
312819121017	JEYAPRAKASH J	B	O	A+	A	O	B+	A+	B
312819121018	KALAISELVAN S	B	O	B	B	O	B	B	B
312819121019	KARTHIK SUNDARAM N	B+	O	B+	B+	O	B+	B	B
312819121020	KEERTHANA R	B+	O	B	B	O	B+	B	B
312819121021	KEVINKUMAR G	B+	O	A	B	O	B+	B+	B
312819121022	LAKSHMI R	B+	O	A+	A	O	A	B	B
312819121023	LOKESHWAR V	A+	O	A	A	O	A+	A+	B
312819121024	MAGESHWARI R	A+	O	A+	A	O	A+	A+	B+
312819121025	MYTHILI L	A	O	A	A	O	A+	B+	B+
312819121026	PAVITHRA B	A	O	A	A	O	A+	A+	A
312819121027	PAVITHRA M	A+	O	A+	B+	O	A+	B+	B
312819121029	PRADEEP K	A+	O	A	B	O	A+	A	B
312819121030	PRASANNA V	A+	O	A	A	O	A+	A+	B
312819121031	PRAVEEN KUMAR S	A	O	O	O	O	O	O	O
312819121032	PRIYADARSHAN K	A+	O	A+	B+	O	A+	A+	A
312819121033	PURUSHOTHAMAN K	A+	O	A	B+	O	A+	A	A
312819121034	RAMYA R	O	O	A	A+	O	O	O	A
312819121035	RITHIK KUMAR D	A	O	A+	A	O	A+	A+	B+
312819121036	SAI NITHIN S	A+	O	A	B+	O	A	B	B

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312819121037	SAMYUKTHA C	A+	O	A+	A	O	A+	A+	A+
312819121038	SARAVANAN V	A+	O	A+	A	O	A+	A	A
312819121039	SHRIVARSHAN H	B	O	B	B	O	A	B	B
312819121040	SOWMIYA S	A	O	B	B	O	A	B+	B
312819121041	SRUTHI M	A+	O	A+	A	O	A+	A+	A
312819121042	SURESHINI R	A+	O	A+	A+	O	A+	A+	A+
312819121043	SUVETHA D R	O	O	O	O	O	O	O	A
312819121044	SWETHAA SREE C S	A+	O	A+	B+	O	A+	A+	B+
312819121045	UMA BHARATH U	A+	O	A	B+	O	A+	A+	A+
312819121046	VEERABATHIRAN V	B	O	B	B	O	B	B	B
312819121047	VENKADESAN E	O	O	O	A+	O	O	O	O
312819121048	VIDHYA E	O	O	O	A+	O	O	O	O
312819121049	VIGNESHWARAN A	B+	O	B+	B+	O	B+	A+	B
312819121050	VIJAYRAJ V	B+	O	B	B	O	B+	B	B
312819121052	YUVARAJ V	B	O	B	B	O	A	B	B

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 04** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 121-B.E. Bio Medical Engineering

	Subject Code - >	BM8401	BM8411	EC8381	EC8392	EC8393	EC8453	EE8452	MA8391
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312818121001	AATHITHYAN P	B+	O	O	A	A	A+	A+	A+
312818121002	BHARATHRAJ A	A+	O	O	A+	A+	A+	A+	A+
312818121003	BHAVADHARANI R	O	O	O	O	O	O	O	O
312818121004	BHUVANA S	A+	O	O	A+	A	A+	A+	A+
312818121005	BHUVANESH B	O	O	O	O	A+	O	A+	O
312818121006	DESIKA M	A	O	O	A	A	A+	A+	A
312818121007	GAYATHRI R	A+	O	O	A+	A	A+	A+	A
312818121008	GOKULRAM S	B	O	O	B	B	B+	B	B
312818121009	GOPI E	O	O	O	O	O	O	O	O
312818121010	GOWRI PRIYA R	A+	O	O	A+	A+	A+	A+	A+
312818121011	HARIHARAN J	A+	O	O	A	A	A+	A	A+
312818121012	HEMALATHA A	O	O	O	O	O	O	O	O
312818121013	JACINTH HEPHZIBAH A	A+	O	O	A+	A+	A+	A+	A+
312818121014	JEEVITHA T	O	O	O	O	O	O	O	O
312818121015	KARPAGAVALLI E	O	O	O	O	A+	O	O	O
312818121016	KRISHNA RAJ R	A	O	O	A+	A+	A+	A+	A+
312818121017	MAHALAKSHMI M	A+	O	O	B	B+	A	B	B+
312818121018	MARIKUMARAN M	A	O	O	B	B	A	A	B+
312818121019	MATHAN KUMAR V	A	O	O	A	A	A+	A	A
312818121020	MOHAMED HABEEB S S SUHAIL	B	O	O	A	B	B+	B	B
312818121021	MONISHA M	A+	O	O	A+	A+	A+	A+	A+
312818121022	MUNUSAMY R	A	O	O	A	A	A+	B+	A
312818121023	NARENDRAN G	A+	O	O	B+	B	A	A	B
312818121024	NAVEEN KUMAR S	B+	O	O	B+	B+	A+	A	B
312818121025	NIVEDAA SREE S	A+	O	O	A	A	A+	B+	A
312818121026	PARAMESWARI P	A+	O	O	A+	A+	A+	A	A+
312818121027	POOJA T M	A+	O	O	A+	A+	A+	A+	A+
312818121028	PREETHI V	O	O	O	O	O	O	O	O
312818121029	PURUSHOTHAMAN K	A	O	O	B+	B	A+	B	A
312818121030	SAISANJANA G	A+	O	O	A+	A+	A+	A+	A+
312818121031	SAVITHASREE N	A+	O	O	A+	A+	A+	A+	A+
312818121032	SHANMUGAPRIYA P	A+	O	O	O	A+	O	O	A+
312818121033	SHARMILA R	O	O	O	O	O	O	O	O
312818121034	SUBHA R	A+	O	O	A+	A+	A+	A+	A+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312818121036	SUGUMAR K	A	O	O	A	B+	A+	A	A+
312818121037	TAMIL SELVAN R	B+	O	O	B+	A	A+	A	A
312818121038	VENKATESH S	B+	O	O	B+	B+	A+	B	A
312818121039	VENKATRAMAN S	A	O	O	A	A	A	B	B+
312818121040	VIGNESH RAJU P	A	O	O	B+	A	A+	B+	A+
312818121041	VINOTHKUMAR S	A+	O	O	A+	A+	A+	A	A+
312818121042	YESUDHAS D	A+	O	O	A	A	A+	B+	A
312818121701	SAIRAN AZEEMA S	O	O	O	A+	A+	A+	A	A+

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 06** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 121-B.E. Bio Medical Engineering

	Subject Code - >	BM8601	BM8611	BM8612	BM8651	EC8681	EC8691	GE8291	HS8581	MD8071	MD8091
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817121001	ABISHA KM	A+	O	O	A+	O	A+	A+	O	O	A+
312817121002	ABITH V	A+	O	O	A+	O	A+	A+	O	O	A+
312817121004	AMALA PAUL PS	O	O	O	O	O	O	O	O	O	O
312817121005	ANITHA G	O	O	O	O	O	O	O	O	O	O
312817121006	BALAJI R	A	O	O	A+	O	A	A+	O	O	A+
312817121007	BHARGAVI G	O	O	O	O	O	O	O	O	O	O
312817121008	BOOJA MN	O	O	O	O	O	O	O	O	O	O
312817121009	DAKSHINAMOORTHY R	A	O	O	A+	O	A	A+	O	A+	A+
312817121010	DARSHINI K	A	O	O	A+	O	A	A+	O	A	A+
312817121011	DEEPIKA M	O	O	O	O	O	O	O	O	O	O
312817121013	DIKSHA DS	A+	O	O	A+	O	A	A+	O	A	A+
312817121014	DINESHKUMAR S	O	O	O	O	O	O	O	O	O	O
312817121015	DIVYA BHARATHY R	O	O	O	O	O	O	O	O	A+	O
312817121016	EVANIC JASMON A	B+	O	O	A	O	B+	A	O	A+	A+
312817121017	GOMATHI A	O	O	O	O	O	O	O	O	O	O
312817121018	GURUMOORTHY M	A	O	O	A+	O	A	A	O	A+	A+
312817121019	HEMA PRIYA R	A	O	O	A+	O	A	A	O	A+	A+
312817121020	JABATINI J	A+	O	O	O	O	A+	O	O	O	O
312817121021	JAINAB NISHA A	A	O	O	A+	O	A+	A+	O	O	A+
312817121022	KAMAL RAJ S	A+	O	O	O	O	O	O	O	O	O
312817121023	KAREN DELCIA R	A+	O	O	A+	O	A+	A+	O	A+	A+
312817121024	KARPAGA DEVI V	A	O	O	A+	O	A+	A+	O	O	A+
312817121025	KARTHIK S	A+	O	O	A+	O	A+	A+	O	O	A+
312817121026	KEMILA A	A+	O	O	A+	O	A	A+	O	O	A+
312817121028	MAHESH T	A	O	O	A+	O	A	A+	O	O	A+
312817121029	MAKHISH KA	A	O	O	A+	O	B+	A	O	B+	A+
312817121030	MANIKANDAN K	A+	O	O	A+	O	B	A	O	A+	A+
312817121031	MANOJ G	A+	O	O	A+	O	B+	A+	O	O	A+
312817121032	MOHAMED FAIZAL S	A	O	O	A+	O	A+	A+	O	O	A+
312817121033	MOHAMMED MUSHEER M	O	O	O	O	O	O	O	O	O	O
312817121034	NANDHINI A	O	O	O	O	O	O	O	O	O	O
312817121035	NANDHINI K	A+	O	O	O	O	A+	O	O	O	O
312817121036	NILA PD	O	O	O	O	O	O	O	O	O	O
312817121037	PAVITHRA N	A	O	O	A+	O	A+	A+	O	A+	A+
312817121038	PRABAKARAN S	A	O	O	A+	O	A	A+	O	O	A

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312817121039	PRAVEEN SAGAR M	A+	O	O	A+	O	A+	A+	O	O	A+
312817121040	PUNITHA T	A+	O	O	A+	O	A	A+	O	A+	A+
312817121042	RAJU A	B+	O	O	B+	O	B	B	O	B+	A
312817121043	RAMYA T	O	O	O	O	O	O	O	O	O	O
312817121045	SAKTHI KIRUTHIKKA M	O	O	O	O	O	O	O	O	O	O
312817121046	SARANRAJ N	A	O	O	A+	O	A+	A+	O	A+	A+
312817121047	SEETHA LAKSHMI V	A+	O	O	O	O	O	O	O	O	O
312817121048	SELSHIYA S	O	O	O	O	O	O	O	O	O	O
312817121049	SHAJITH AKASH G	B+	O	O	B+	O	B	B	O	B	A
312817121050	SHAJU GEORGE B	A+	O	O	A+	O	A+	A+	O	O	A+
312817121051	SHALINI V	A+	O	O	A+	O	A+	A+	O	O	A+
312817121052	SINDHU D	O	O	O	O	O	O	O	O	O	O
312817121053	SONIYA S	O	O	O	O	O	O	O	O	O	O
312817121054	SRIRAM I	A	O	O	A+	O	A+	A+	O	A	A+
312817121055	SUJITHA S	A+	O	O	O	O	O	A+	O	O	O
312817121056	SWATHI B	O	O	O	O	O	O	O	O	O	O
312817121057	TEENA V	A	O	O	A+	O	A+	A	O	O	A+
312817121058	THANGAPRIYADHARSHINI T	A	O	O	A+	O	A	A+	O	A	A+

BM8351 ANATOMY AND HUMAN PHYSIOLOGY L T P C
3 0 0 3

OBJECTIVES

- To identify all the organelles of an animal cell and their function.
- To understand structure and functions of the various types of systems of human body.
- To demonstrate their knowledge of importance of anatomical features and physiology of human systems

UNIT I CELL AND TISSUE STRUCTURE 9

Structure of Cell – structure and functions of sub organelles – Cell Membrane –Transport of Across Cell Membrane - Action Potential – Cell to Cell Signaling – Cell Division. Types of Specialized tissues – Functions

UNIT II SKELETAL, MUSCULAR AND RESPIRATORY SYSTEMS 9

Skeletal::Types of Bone and function – Physiology of Bone formation – Division of Skeleton – Types of joints and function – Types of cartilage and function. **Muscular:** Parts of Muscle – Movements. **Respiratory:** Parts of Respiratory Systems – Types of respiration - Mechanisms of Breathing – Regulation of Respiration

UNIT III CARDIOVASCULAR AND LYMPHATIC SYSTEMS 9

Cardiovascular: Components of Blood and functions.- Blood Groups and importance – Structure of Heart – Conducting System of Heart – Properties of Cardiac Muscle - Cardiac Cycle - Heart Beat – Types of Blood vessel – Regulation of Heart rate and Blood pressure. **Lymphatic:** Parts and Functions of Lymphatic systems – Types of Lymphatic organs and vessels

UNIT IV NERVOUS AND ENDOCRINE SYSTEMS AND SENSE ORGANS 9

Nervous: Cells of Nervous systems – Types of Neuron and Synapses – Mechanisms of Nerve impulse – Brain : Parts of Brain – Spinal Cord – Tract and Pathways of Spines – Reflex Mechanism – Classification of Nerves - Autonomic Nervous systems and its functions. **Endocrine - Pituitary** and thyroid gland, Sense Organs: Eye and Ear

UNIT V DIGESTIVE AND URINARY SYSTEMS 9

Digestive: Organs of Digestive system – Digestion and Absorption. **Urinary:** Structure of Kidney and Nephron – Mechanisms of Urine formation – Regulation of Blood pressure by Urinary System – Urinary reflex

TOTAL: 45 PERIODS

OUTCOMES:

At end of the course

- Students would be able to explain basic structure and functions of cell
- Students would be learnt about anatomy and physiology of various systems of human body
- Students would be able to explain interconnect of various systems

TEXT BOOKS:

1. Prabhjot Kaur. Text Book of Anatomy and Physiology. Lotus Publsihers. 2014
2. Elaine.N. Marieb , -Essential of Human Anatomy and Physiology‖, Eight Edition, Pearson Education, New Delhi, 2007

REFERENCES:

1. Frederic H. Martini, Judi L. Nath, Edwin F. Bartholomew, Fundamentals of Anatomy and Physiology. Pearson Publishers, 2014
2. Gillian Pocock, Christopher D. Richards, The human Body – An introduction for Biomedical and Health Sciences, Oxford University Press, USA, 2013
3. William F.Ganong, -Review of Medical Physiology‖, 22nd Edition, Mc Graw Hill, New Delhi, 2010
4. Eldra Pearl Solomon, -Introduction to Human Anatomy and Physiology‖, W.B. Saunders Company, 2015
5. Guyton & Hall, -Medical Physiology‖, 13th Edition, Elsevier Saunders, 2015

OUTCOMES:
Upon Completion of the course, the students will be able to:

- Explain the structure and working operation of basic electronic devices.
- Able to identify and differentiate both active and passive elements
- Analyze the characteristics of different electronic devices such as diodes and transistors
- Choose and adapt the required components to construct an amplifier circuit.
- Employ the acquired knowledge in design and analysis of oscillators

TEXT BOOKS:

1. David A. Bell ,‖Electronic devices and circuits‖, Oxford University higher education, 5th edition 2008.
2. Sedra and smith, -Microelectronic circuits‖,7th Ed., Oxford University Press

REFERENCES:

1. Balbir Kumar, Shail.B.Jain, -Electronic devices and circuits‖ PHI learning private limited, 2nd edition 2014.
2. Thomas L.Floyd, -Electronic devices‖ Conventional current version, Pearson prentice hall, 10th Edition, 2017.
3. Donald A Neamen, -Electronic Circuit Analysis and Design‖ Tata McGraw Hill, 3rd Edition, 2003.
4. Robert L.Boylestad, -Electronic Devices and Circuit Theory‖, 2002.
5. Robert B. Northrop, -Analysis and Application of Analog Electronic Circuits to Biomedical Instrumentation‖, CRC Press, 2004.

BM8302 PATHOLOGY AND MICROBIOLOGY L T P C 3 0 0 3

OBJECTIVES:
The student should be made to:

- Gain a knowledge on the structural and functional aspects of living organisms.
- Know the etiology and remedy in treating the pathological diseases.
- Empower the importance of public health.

UNIT I CELL DEGENERATION, REPAIR AND NEOPLASIA 9

Cell injury - Reversible cell injury and Irreversible cell injury and Necrosis, Apoptosis, Intracellular accumulations, Pathological calcification- Dystrophic and Metastatic. cellular adaptations of growth and differentiation, Inflammation and Repair including fracture healing, Neoplasia, Classification, Benign and Malignant tumours, carcinogenesis, spread of tumours Autopsy and biopsy.

UNIT II FLUID AND HEMODYNAMIC DERANGEMENTS 9

Edema, Hyperemia/Ischemia, normal hemostasis, thrombosis, disseminated intravascular coagulation, embolism, infarction, shock, Chronic venous congestion. Hematological disorders- Bleeding disorders, Leukaemias, Lymphomas Haemorrhage.

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UNIT III MICROBIOLOGY 9

Structure of Bacteria and Virus. Routes of infection and spread; endogenous and exogenous infections, Morphological features and structural organization of bacteria and virus, growth curve, identification of bacteria , culture media and its types , culture techniques and observation of culture. Disease caused by bacteria, fungi, protozoal, virus and helminthes.

UNIT IV MICROSCOPES 9

Light microscope – bright field, dark field, phase contrast, fluorescence, Electron microscope (TEM & SEM). Preparation of samples for electron microscope. Staining methods – simple, gram staining and AFB staining.

UNIT V IMMUNOPATHOLOGY 9

Natural and artificial immunity, types of Hypersensitivity, antibody and cell mediated tissue injury: opsonization, phagocytosis, inflammation, Secondary immunodeficiency including HIV infection. Auto-immune disorders: Basic concepts and classification, SLE.Antibodies and its types, antigen and antibody reactions, immunological techniques: immune diffusion, immuno electrophoresis, RIA and ELISA, monoclonal antibodies.

TOTAL : 45 PERIODS

OUTCOMES:

At the end of the course, the student should be able to:

- Analyze structural and functional aspects of living organisms.
- Explain the function of microscope
- Discuss the importance of public health.
- Describe methods involved in treating the pathological diseases.

TEXT BOOKS:

1. Ramzi S Cotran, Vinay Kumar & Stanley L Robbins, -Pathologic Basis of Diseases‖, 7th edition,WB Saunders Co. 2005 (Units I & II).
2. Ananthanarayanan & Panicker, -Microbiology‖ Orientblackswan, 2017 10th edition. (Units III,IV and V).

REFERENCES:

1. Underwood JCE: General and Systematic Pathology Churchill Livingstone, 3rd edition, 2000.
2. Dubey RC and Maheswari DK. -A Text Book of Microbiology‖ Chand & Company Ltd, 2007
3. Prescott, Harley and Klein, -Microbiology‖, 10th edition, McGraw Hill, 2017

BM8401 MEDICAL PHYSICS L T P C

3 0 0 3

OBJECTIVES:

The student should be made to:

- To study principles and effects of ionizing and non-ionizing radiation in human body
- To discuss the physics of the senses
- To explore the effects of radiation in matter and how isotopes are produced
- To understand various detectors for detecting the presence of ionizing radiation.

UNIT I NON-IONIZING RADIATION AND ITS MEDICAL APPLICATIONS 9

Introduction and objectives - Tissue as a leaky dielectric - Relaxation processes, Debye model, Cole–Cole model, Overview of non-ionizing radiation effects-Low Frequency Effects- Higher frequency effects. Physics of light, Measurement of light and its unit- limits of vision and color vision an overview, Ultraviolet

UNIT II PHYSICS OF THE SENSES 7

Introduction and objectives - Cutaneous sensation - The chemical senses – Audition –Vision - Psychophysics

UNIT III PRINCIPLES OF RADIOACTIVE NUCLIDES 10

Radioactive Decay – Spontaneous Emission – Isometric Transition – Gamma ray emission, alpha, beta, Positron decay, electron capture, Sources of Radioisotopes Natural and Artificial radioactivity, Radionuclide used in Medicine and Technology ,Decay series, Production of radionuclides – Cyclotron produced Radionuclide- Reactor produced Radio- nuclide-fission and electron Capture reaction, Target and Its Processing Equation for Production of Radionuclides, radionuclide Generator-Technetium generator.

UNIT IV RADIOACTIVE DECAY AND INTERACTIONOF RADIATION WITH MATTER 11

Spontaneous Fission- Isomeric Transition-Alpha Decay-Beta Decay-PositronDecay-Electron Capture-Interaction of charged particles with matter –Specific ionization, Linear energy transfer range, Bremsstrahlung, Annihilation,Interaction of X and Gamma radiation with matter-Photoelectric effect, Compton Scattering , Pair production, Attenuation of Gamma Radiation ,Interaction of neutron with matter and their clinical significance.

UNIT V SCINTILLATION, SEMICONDUCTOR and GAS FILLED DETECTORS 8

Scintillation Detectors - Solid Scintillation Counters - Gamma-Ray Spectrometry-Liquid Scintillation Counters-Characteristics of Counting Systems-Gamma Well Counters-Thyroid Probe-Principles of Gas-Filled Detectors - Ionization Chambers-Geiger–Müller Counters

TOTAL: 45 PERIODS

OUTCOMES:

At the end of the course, the student should be able to:

- Explain about non-ionizing radiation, interaction with tissue and its effects.
- Define and compare intensities of sensory stimuli
- Summarizes how ionizing radiation interacts with the human body, how to quantify it and its levels seen in the environment and healthcare
- Explain the fundamentals of radioactivity and radioactive isotopes
- Illustrates the methods of detecting and recording the ionizing radiation and its interaction with matter

TEXT BOOKS:

1. Gopal B. Saha, -Physics and Radiobiology of Nuclear Medicine‖, 4th Edition, Springer, 2013.
2. B H Brown, R H Smallwood, D C Barber, P V Lawford and D R Hose, -Medical Physics and Biomedical Engineering‖, 2nd Edition, IOP Publishers.2001.

REFERENCES:

1. S.Webb – The Physics of Medical Imaging‖, Taylor and Francis, 1988
2. J.P.Woodcock, -Ultrasonic,Medical Physics Handbook series 1‖, Adam Hilger, Bristol, 2002
3. HyltonB.Meire and Pat Farrant -Basic Ultrasound‖ John Wiley & Sons, 1995

BM8502 BIOMEDICAL INSTRUMENTATION L T P C

3 0 0 3

OBJECTIVES:

The student should be made to

- To Illustrateorigin of bio potentials and its propagations
- To understand the different types of electrodes and its placement for various recordings
- To design bio amplifier for various physiological recordings
- To learn the different measurement techniques for non-physiological parameters.
- To Summarizedifferent biochemical measurements.

UNIT I BIOPOTENTIAL ELECTRODES 9

Origin of bio potential and its propagation. Electrode-electrolyte interface, electrode–skin interface, half-cell potential, Contact impedance, polarization effects of electrode – non polarizable electrodes. Types of electrodes - surface, needle and micro electrodes and their equivalent circuits. Recording problems - motion artifacts, measurement with two electrodes.

UNIT II BIOPOTENTIAL MEASUREMENTS 9

Bio signals characteristics – frequency and amplitude ranges. ECG – Einthoven‘s triangle, standard 12 lead system, Principles of vector cardiography.EEG – 10-20 electrode system, unipolar, bipolar and average mode. EMG– unipolar and bipolar mode. Recording of ERG, EOG and EGG

UNIT III SIGNAL CONDITIONING CIRCUITS 9

Need for bio-amplifier - single ended bio-amplifier, differential bio-amplifier, Impedance matching circuit, isolation amplifiers – transformer and optical isolation - isolated DC amplifier and AC carrier amplifier., Power line interference, Right leg driven ECG amplifier, Band pass filtering

UNIT IV MEASUREMENT OF NON-ELECTRICAL PARAMETERS 9

Temperature, respiration rate and pulse rate measurements. Blood Pressure: indirect methods - Auscultatory method, oscillometric method, direct methods: electronic manometer, Pressure amplifiers, Systolic, diastolic, mean detector circuit. Blood flow and cardiac output measurement: Indicator dilution, thermal dilution and dye dilution method, Electromagnetic and ultrasound blood flow measurement.

UNIT V BIOCHEMICAL MEASUREMENT AND BIOSENSORS 9

Biochemical sensors - pH, pO2 and pCO2, Ion selective Field effect Transistor (ISFET), Immunologically sensitive FET (IMFET), Blood glucose sensors, Blood gas analyzers - colorimeter, Sodium Potassium Analyser, spectrophotometer, blood cell counter, auto analyzer (simplified schematic description) – Bio Sensors – Principles – amperometric and voltometric techniques.

TOTAL: 45 PERIODS

OUTCOMES:

At the end of the course, the student should be able to:

- Differentiate different bio potentials and its propagations.
- Illustrate different electrode placement for various physiological recordings
- Design bio amplifier for various physiological recordings
- Explain various technique for non-electrical physiogical measurements
- Demonstrate different biochemical measurement techniques.

TEXT BOOK:

1. Leslie Cromwell, -Biomedical Instrumentation and measurement‖, 2nd edition, Prentice hall of India, New Delhi, 2015.

REFERENCES:

1. John G. Webster, -Medical Instrumentation Application and Design‖, 4th edition, Wiley India Pvt Ltd,New Delhi, 2015.
2. Joseph J. Carr and John M. Brown, -Introduction to Biomedical Equipment Technology‖, Pearson Education, 2004.
3. Myer Kutz, -Standard Handbook of Biomedical Engineering and Design‖, McGraw Hill Publisher, 2003.
4. Khandpur R.S, -Handbook of Biomedical Instrumentation‖, 3rd edition, Tata McGraw-Hill New Delhi, 2014

BM8601 DIAGNOSTIC AND THERAPEUTIC EQUIPMENT- I L T P C
3 0 0 3

OBJECTIVES:

The student should be made to:

- Understand the devices for measurement of parameters related to cardiology.
- Illustrate the recording and measurement of EEG
- Demonstrate EMG recording unit and its uses.
- Explain diagnostic and therapeutic devices related to respiratory parameters.
- Understand the various sensory measurements that hold clinical importance.

UNIT I CARDIAC EQUIPMENT 9

Electrocardiograph, Normal and Abnormal Waves, Heart rate monitor, Holter Monitor, Phonocardiography, ECG machine maintenance and troubleshooting, Cardiac Pacemaker- Internal and External Pacemaker– Batteries, AC and DC Defibrillator- Internal and External,Defibrillator Protection Circuit, Cardiac ablation catheter.

UNIT II NEUROLOGICAL EQUIPMENT 8

Clinical significance of EEG, Multi-channel EEG recording system, Epilepsy, Evoked Potential– Visual, Auditory and Somatosensory, MEG (Magneto Encephalo Graph). EEG Bio Feedback Instrumentation. EEG system maintenance and troubleshooting.

UNIT III MUSCULAR AND BIOMECHANICAL MEASUREMENTS 10

Recording and analysis of EMG waveforms, fatigue characteristics, Muscle stimulators, nerve stimulators, Nerve conduction velocity measurement, EMG Bio Feedback Instrumentation. Static Measurement – Load Cell, Pedobarograph. Dynamic Measurement – Velocity, Acceleration, GAIT, Limb position.

UNIT IV RESPIRATORY MEASUREMENT SYSTEM 10

Instrumentation for measuring the mechanics of breathing – Spirometer -Lung Volume and vital capacity, measurements of residual volume, Pneumotachometer – Airway resistance measurement, Whole body Plethysmograph, Intra-Alveolar and Thoracic pressure measurements, Apnoea Monitor. Types of Ventilators – Pressure, Volume, and Time controlled. Flow, Patient Cycle Ventilators, Humidifiers, Nebulizers, Inhalators.

UNIT V SENSORY MEASUREMENT 8

Psychophysiological Measurements – polygraph, basal skin resistance (BSR), galvanic skin resistance (GSR), Sensory responses - Audiometer-Pure tone, Speech, Eye Tonometer, Applanation Tonometer, slit lamp, auto refractometer.

TOTAL: 45 PERIODS

OUTCOMES:

At the end of the course, the student should be able to:

- Describe the working and recording setup of all basic cardiac equipment.
- Understand the working and recording of all basic neurological equipment‘s.
- Discuss the recording of diagnostic and therapeutic equipment‘s related to EMG.
- Explain about measurements of parameters related to respiratory system.
- Describe the measurement techniques of sensory responses.

TEXT BOOKS:

1. John G. Webster, -Medical Instrumentation Application and Design‖, 4th edition, Wiley India PvtLtd,New Delhi, 2015.
2. Joseph J. Carr and John M. Brown, -Introduction to Biomedical Equipment Technology‖, Pearson education, 2012.

REFERENCES:

1. Myer Kutz, -Standard Handbook of Biomedical Engineering & Design‖, McGraw Hill, 2003.
2. L.A Geddes and L.E.Baker, -Principles of Applied Biomedical Instrumentation‖, 3rd Edition, 2008
3. Leslie Cromwell, -Biomedical Instrumentation and Measurement‖, Pearson Education, New

Delhi, 2007.
4. Antony Y.K.Chan,‖Biomedical Device Technology, Principles and design‖, Charles Thomas Publisher Ltd, Illinois, USA, 2008.
5. B H Brown, R H Smallwood, D C Barber, P V Lawford and D R Hose, -Medical Physics and Biomedical Engineering‖, 2nd Edition, IOP Publishers. 2001.

MD8091 HOSPITAL MANAGEMENT L T P C
3 0 0 3

OBJECTIVES:

- To understand the fundamentals of hospital administration and management.
- To know the market related research process
- To explore various information management systems and relative supportive services.
- To learn the quality and safety aspects in hospital.

UNIT I OVERVIEW OF HOSPITAL ADMINISTRATION 9

Distinction between Hospital and Industry, Challenges in Hospital Administration – Hospital Planning- Equipment Planning – Functional Planning - Current Issues in Hospital Management – Telemedicine - Bio-Medical Waste Management.

UNIT II HUMAN RESOURCE MANAGEMENT IN HOSPITAL 9

Principles of HRM – Functions of HRM – Profile of HRD Manager – Tools of HRD –Human Resource Inventory – Manpower Planning. Different Departments of Hospital, Recruitment, Selection, Training Guidelines –Methods of Training – Evaluation of Training – Leadership grooming and Training, Promotion – Transfer, Communication – nature, scope, barriers, styles and modes of communication.

UNIT III MARKETING RESEARCH PROCESS 9

Marketing information systems - assessing information needs, developing & disseminating information - Market Research process - Other market research considerations – Consumer Markets & Consumer Buyer Behaviour - Model of consumer behaviour - The buyer decision process - Model of business buyer behavior – Major types of buying situations - WTO and its implications.

UNIT IV HOSPITAL INFORMATION SYSTEMS & SUPPORTIVE SERVICES 9

Management Decisions and Related Information Requirement - Clinical Information Systems - Administrative Information Systems - Support Service Technical Information Systems – Medical Transcription, Medical Records Department – Central Sterilization and Supply Department – Pharmacy– Food Services - Laundry Services.

UNIT V QUALITY AND SAFETY ASPECTS IN HOSPITAL 9

Quality system – Elements, implementation of quality system, Documentation, Quality auditing, International Standards ISO 9000 – 9004 – Features of ISO 9001 – ISO 14000 – Environment Management Systems. NABA, JCI, NABL. Security – Loss Prevention – Fire Safety – Alarm System – Safety Rules. Health Insurance & Managing Health Care – Medical Audit – Hazard and Safety in a hospital Setup.

TOTAL: 45 PERIODS

OUTCOMES:

At the end of the course, the student should be able to:

- Explain the principles of Hospital administration.
- Identify the importance of Human resource management.
- List various marketing research techniques.
- Identify Information management systems and its uses.
- Understand safety procedures followed in hospitals.

TEXT BOOKS:

1. R.C.Goyal, -Hospital Administration and Human Resource Management‖, PHI – Fourth Edition, 2006.
2. G.D.Kunders, -Hospitals – Facilities Planning and Management – TMH, New Delhi – Fifth

Reprint 2007.

REFERENCES:

1. Cesar A.Caceres and Albert Zara, -The Practice of Clinical Engineering, Academic Press, New York, 1977.
2. Norman Metzger, -Handbook of Health Care Human Resources Management‖, 2nd edition Aspen Publication Inc. Rockville, Maryland, USA, 1990.
3. Peter Berman -Health Sector Reform in Developing Countries‖ - Harvard University Press, 1995.
4. William A. Reinke -Health Planning For Effective Management‖ - Oxford University Press.1988
5. Blane, David, Brunner, -Health and SOCIAL Organization: Towards a Health Policy for the 21st Century‖, Eric Calrendon Press 2002.
6. Arnold D. Kalcizony & Stephen M. Shortell, -Health Care Management‖, 6th Edition Cengage Learning, 2011.

BM8701 DIAGNOSTIC AND THERAPEUTIC EQUIPMENT – II L T P C
3 0 0 3

OBJECTIVES:

The student should be made to:

- Understand the devices used in ICU and principles of Telemetry.
- Describe types of diathermy and its uses
- Demonstrate applications of ultrasound in medicine
- Explain extracorporeal devices used in critical care
- Discuss the importance of patient safety against electrical hazard

UNIT I PATIENT MONITORING AND BIOTELEMETRY 9

Patient monitoring systems, ICU/CCU Equipments, bed side monitors, Infusion pumps, Central consoling controls. Radio Telemetry (single, multi), Portable and Landline Telemetry unit, Applications in ECG and EEG Transmission.

UNIT II DIATHERMY 9

IR and UV lamp and its application. Short wave diathermy, ultrasonic diathermy, Microwave diathermy, Electro surgery machine - Current waveforms, Tissue Responses, Electro surgical current level, Hazards and safety procedures.

UNIT III ULTRASONIC EQUIPMENTS 9

Diagnosis: Tissue Reaction, Basic principles of Echo technique, display techniques A, B and M mode, B Scan, Application of ultrasound as diagnostic tool – Echocardiogram, Echoencephalogram, abdomen, obstetrics and gynecology, ophthalmology.

UNIT IV EXTRA CORPOREAL DEVICES AND SPECIAL DIAGNOSTIC TECHNIQUES 9

Need for heart lung machine, functioning of bubble, disc type and membrane type oxygenators, finger pump, roller pump, electronic monitoring of functional parameters. Hemo Dialyser unit, Lithotripsy, Principles of Cryogenic technique and application, Endoscopy, Laproscopy, Otoscopes. Thermography – Recording and clinical application.

UNIT V PATIENT SAFETY 9

Physiological effects of electricity – important susceptibility parameters – Macro shock – Micro shock hazards – Patient‘s electrical environment – Isolated Power system – Conductive surfaces – Electrical safety codes and standards – IEC 60601-1 2005 standard, Basic Approaches to Protection against shock, Protection equipment design, Electrical safety analyzer – Testing the Electric system

TOTAL: 45 PERIODS

OUTCOMES:

At the end of the course, the student should be able to:

- Discuss the various equipment used in ICU and applications of telemetry.
- Explain the types of diathermy and its applications.
- Express the basics of ultrasound and its application in medicine

- Discuss the various extracorporeal and special diagnostic devices used in hospitals
- Outline the importance of patient safety against electrical hazard

TEXT BOOKS:

1. John G. Webster, -Medical Instrumentation Application and Design‖, 4th edition, Wiley India PvtLtd,New Delhi, 2015
2. Joseph J. Carr and John M. Brown, -Introduction to Biomedical Equipment Technology‖, Pearson education, 2012.

REFERENCES:

1. Leslie Cromwell, -Biomedical Instrumentation and measurement‖, 2nd edition, Prentice hall of India, New Delhi, 2015.
2. Richard Aston -Principles of Biomedical Instrumentation and Measurement‖, Merril Publishing Company, 1990.
3. L.A Geddas and L.E.Baker -Principles of Applied Biomedical Instrumentation‖ 2004.
4. Myer Kutz -Standard Handbook of Biomedical Engineering & Design‖, McGraw-Hill Publisher, 2003.
5. Khandpur R.S, -Handbook of Biomedical Instrumentation‖, 3rdedition,Tata McGraw-Hill, New Delhi, 2014.

BM8702 RADIOLOGICAL EQUIPMENTS L T P C
3 0 0 3

OBJECTIVES:
The student should be made

- To understand the generation of X-ray and its uses in imaging
- To describe the principle of Computed Tomography.
- To know the techniques used for visualizing various sections of the body.
- To learn the principles of different radio diagnostic equipment in Imaging
- To discuss the radiation therapy techniques and radiation safety.

UNIT I MEDICAL X-RAY EQUIPMENT 9

Nature of X-rays- X-Ray absorption – Tissue contrast. X- Ray Equipment (Block Diagram) – X-Ray Tube, the collimator, Bucky Grid, power supply, Cathode and filament currents, Focusing cup, Thermionic emission, Electromagnetic induction, Line focus principle and the heel effect, Causes of x-ray tube failure: Electron arcing/filament burn out, Failure to warm up tube, High temp due to over exposure, x-ray tube rating charts.X-ray Image Intensifier tubes – Fluoroscopy – Digital Fluoroscopy. Angiography, Cine Angiography, Digital subtraction Angiography. Mammography and Dental x-ray unit.

UNIT II COMPUTED TOMOGRAPHY 9

Principles of tomography, CT Generations, X- Ray sources- collimation- X- Ray detectors-Viewing systems- spiral CT scanning – Ultra fast CT scanners. Advantages of computed radiography over film screen radiography: Time, Image quality, Lower patient dose, Differences between conventional imaging equipment and digital imaging equipment: Image plate, Plate readers, Image characteristics, Image reconstruction techniques- back projection and iterative method. Spiral CT, 3D Imaging and its application.

UNIT III MAGNETIC RESONANCE IMAGING 9

Fundamentals of magnetic resonance- Interaction of Nuclei with static magnetic field and Radio frequency wave- rotation and precession – Induction of magnetic resonance signals – bulk magnetization – Relaxation processes T1 and T2. Block Diagram approach of MRI system-system magnet (Permanent, Electromagnet and Super conductors), generations of gradient magnetic fields, Radio Frequency coils (sending and receiving), and shim coils, Electronic components, fMRI.

UNIT IV NUCLEAR MEDICINE TECHNIQUES 9

Nuclear imaging – Anger scintillation camera –Nuclear tomography – single photon emission computer tomography, positron emission tomography – Recent advances .Radionuclide imaging-

Bone imaging, dynamic renal function, myocardial perfusion. Non imaging techniques- hematological measurements, Glomerular filtration rate, volume measurements, clearance measurement, whole -body counting, surface counting

UNIT V RADIATION THERAPY AND RADIATION SAFETY 9

Radiation therapy – linear accelerator, Telegamma Machine. SRS –SRT,-Recent Techniques in radiation therapy - 3DCRT – IMRT – IGRT and Cyber knife- radiation measuring instruments- Dosimeter, film badges, Thermo Luminescent dosimeters- electronic dosimeter- Radiation protection in medicine- radiation protection principles.

TOTAL: 45 PERIODS

OUTCOMES:

At the end of this course, the student should be able to

- Describe the working principle of X ray machine and its application.
- Illustrate the principle computed tomography.
- Interpret the technique used for visualizing various sections of the body using magnetic resonance imaging
- Demonstrate the applications of radio nuclide imaging.
- Outline the methods of radiation safety.

TEXT BOOKS:

1. Steve Webb, -The Physics of Medical Imaging‖, Adam Hilger, Philadelpia, 1988 (Units I, II, III & IV).
2. R.Hendee and Russell Ritenour -Medical Imaging Physics‖, Fourth Edition William, Wiley-Liss, 2002.

REFERENCES:

1. Gopal B. Saha -Physics and Radiobiology of Nuclear Medicine‖- Third edition Springer, 2006.
2. B.H.Brown, PV Lawford, R H Small wood, D R Hose, D C Barber, -Medical physics and Biomedical Engineering‖, - CRC Press, 1999.
3. Myer Kutz, -Standard handbook of Biomedical Engineering and design‖, McGraw Hill, 2003.
4. P.Ragunathan, -Magnetic Resonance Imaging and Spectroscopy in Medicine Concepts and Techniques‖,Paperback – Import, 2007

MD8071 TELEHEALTH TECHNOLOGY L T P C
3 0 0 3

OBJECTIVES:

The students should be made to

- Learn the key principles for telemedicine and health
- Understand telemedical technology.
- Know telemedical standards, mobile telemedicine and it applications.

UNIT I FUNDAMENTALS OF TELEMEDICINE 9

History of telemedicine, definition of telemedicine, tele-health, tele-care, scope, Telemedicine Systems, benefits & limitations of telemedicine.

UNIT II TYPE OF INFORMATION & COMMUNICATION INFRASTRUCTURE FOR TELEMEDICINE 9

Audio, video, still images, text and data, fax-type of communications and network: PSTN, POTS, ANT, ISDN, internet, air/ wireless communications, GSM satellite, micro wave, Mobile health and ubiquitous healthcare.

UNIT III ETHICAL AND LEGAL ASPECTS OF TELEMEDICINE 9

Confidentiality, patient rights and consent: confidentiality and the law, the patient-doctor relationship, access to medical records, consent treatment - data protection & security, jurisdictional issues, intellectual property rights.

UNIT IV PICTURE ARCHIVING AND COMMUNICATION SYSTEM 9

Introduction to radiology information system and ACS, DICOM, PACS strategic plan and needs assessment, technical Issues, PACS architecture.

UNIT V APPLICATIONS OF TELEMEDICINE 9

Teleradiology, telepathology, telecardiology, teleoncology, teledermatology, telesurgery, e Health and Cyber Medicine.

TOTAL : 45 PERIODS

OUTCOMES:

The students will be able to

- Apply multimedia technologies in telemedicine
- Explain protocols behind encryption techniques for secure transmission of data
- Apply telehealth in healthcare.

TEXTBOOKS:

1. Norris A C, -Essentials of Telemedicine and Telecare‖, John Wiley, New York, 2002.
2. H K Huang, -PACS and Imaging Informatics: Basic Principles and Applications‖ Wiley, New Jersey, 2010.

REFERENCES:

1. Olga Ferrer Roca, Marcelo Sosa Iudicissa, -Handbook of Telemedicine‖, IOS Press, Netherland, 2002.
2. Khandpur R S, -Handbook of Biomedical Instrumentation‖, Tata McGraw Hill, New Delhi, 2003.
3. Keith J Dreyer, Amit Mehta, James H Thrall, -Pacs: A Guide to the Digital Revolution‖, Springer, New York, 2002.
4. Khandpur R S, -TELEMEDICINE – Technology and Applications‖, PHI Learning Pvt Ltd., New Delhi, 2017.

BM8077 HOSPITAL WASTE MANAGEMENT L T P C

3 0 0 3

OBJECTIVES:

The student should be made to:

- Understand the hazardous materials used in hospital and its impact on health
- Understand various waste disposal procedures and management.

UNIT I HEALTHCARE HAZARD CONTROL AND UNDERSTANDING ACCIDENTS 9

Healthcare Hazard Control : Introduction, Hazard Control, Hazard Control Management, Hazard Control Responsibilities, Addressing Behaviors, Hazard Control Practice, Understanding Hazards, Hazard Analysis, Hazard Control and Correction, Personal Protective Equipment, Hazard Control Committees, Hazard Control Evaluation, Hazards, System Safety, Ergonomics. Understanding Accidents: Accident Causation Theories, Human Factors, Accident Deviation Models, Accident Reporting, Accident Investigations, Accident Analysis, Organizational Functions That Support Accident Prevention, Workers‘ Compensation, Orientation, Education, and Training.

UNIT II BIOMEDICAL WASTE MANAGEMENT 9

Biomedical Waste Management : Types of wastes, major and minor sources of biomedical waste, Categories and classification of biomedical waste, hazard of biomedical waste, need for disposal of biomedical waste, waste minimization, waste segregation and labeling, waste handling, collection, storage and transportation, treatment and disposal.

UNIT III HAZARDOUS MATERIALS 9

Hazardous Materials : Hazardous Substance Safety, OSHA Hazard Communication Standard, DOT Hazardous Material Regulations, Healthcare Hazardous Materials, Medical Gas Systems, Hazardous Waste Operations and Emergency Response Standard, Respiratory Protection.

UNIT IV FACILITY SAFETY 9

Facility Safety : Introduction, Facility Guidelines Institute, Administrative Area Safety, Slip, Trip, and Fall Prevention, Safety Signs, Colors, and Marking Requirements, Scaffolding, Fall Protection, Tool Safety, Machine Guarding, Compressed Air Safety, Electrical Safety, Control of Hazardous Energy, Permit Confined Spaces, OSHA Hearing Conservation Standard, Heating, Ventilating, and Air-Conditioning Systems, Assessing IAQ, Landscape and Grounds Maintenance, Fleet and Vehicle Safety.

UNIT V INFECTION CONTROL, PREVENTION AND PATIENT SAFETY 9

Healthcare Immunizations, Centers for Disease Control and Prevention, Disinfectants, Sterilants, and Antiseptics, OSHA Bloodborne Pathogens Standard, Tuberculosis, Healthcare Opportunistic Infections, Medical Waste. Patient Safety: An Organizational Function, Errors and Adverse Events, Safety Cultures, Patient-Centered Healthcare, Quality Improvement Tools and Strategies, Healthcare-Associated Infections, Medication Safety.

TOTAL : 45 PERIODS

OUTCOMES:

At the end of the course, the student should be able to

- Analyse various hazards, accidents and its control
- Design waste disposal procedures for different biowastes
- Categorise different biowastes based on its properties
- Design different safety facility in hospitals
- Propose various regulations and safety norms

11. Region based Segmentation
12. Segmentation using watershed transformation
13. Analysis of images with different color models.
14. Study of DICOM standards
15. Image compression techniques
16. Image restoration
17. A mini project based on medical image processing

TOTAL : 60 PERIODS

CME

2019-20

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
REGULATIONS 2017
B. TECH. CHEMICAL ENGINEERING
CHOICE BASED CREDIT SYSTEM
I TO VIII SEMESTERS (FULL TIME) CURRICULA AND SYLLABI

SEMESTER I

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
THEORY								
1	HS8151	Communicative English	HS	4	4	0	0	4
2	MA8151	Engineering Mathematics I	BS	4	4	0	0	4
3	PH8151	Engineering Physics	BS	3	3	0	0	3
4	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	31	19	0	12	25

SEMESTER II

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
THEORY								
1	HS8251	Technical English	HS	4	4	0	0	4
2	MA8251	Engineering Mathematics II	BS	4	4	0	0	4
3	PH8254	Physics of Materials	BS	3	3	0	0	3
4	CY8292	Chemistry for Technologists	BS	3	3	0	0	3
5	BE8256	Basic Mechanical Engineering	ES	4	4	0	0	4
6	CH8201	Principles of Chemical Engineering	PC	3	3	0	0	3
PRACTICALS								
7	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8	CH8281	Chemical Analysis Laboratory	BS	4	0	0	4	2
			TOTAL	29	21	0	8	25

SEMESTER III

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
THEORY								
1	MA8391	Probability and Statistics	BS	4	4	0	0	4
2	CH8351	Process Calculations	PC	5	3	2	0	4
3	CH8301	Fluid Mechanics for Chemical Engineers	PC	4	2	2	0	3
4	CH8302	Solid Mechanics for Technologists	ES	3	3	0	0	3
5	EE8352	Principles of Electrical and Electronics Engineering	ES	3	3	0	0	3
6	CY8291	Organic Chemistry	BS	3	3	0	0	3
PRACTICALS								
7	EE8361	Electrical Engineering Laboratory	ES	4	0	0	4	2
8	ME8362	Mechanical Engineering Laboratory	ES	4	0	0	4	2
			TOTAL	30	18	4	8	24

SEMESTER IV

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
THEORY								
1	MA8491	Numerical Methods	BS	4	4	0	0	4
2	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
3	CH8491	Instrumental Methods of Analysis	BS	3	3	0	0	3
4	CH8401	Chemical Engineering Thermodynamics I	PC	3	3	0	0	3
5	CH8402	Physical Chemistry	BS	3	3	0	0	3
6	CH8451	Mechanical Operations	PC	3	3	0	0	3
PRACTICALS								
7	CH8461	Fluid Mechanics Laboratory	PC	4	0	0	4	2
8	CY8281	Organic Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	27	19	0	8	23

SEMESTER V

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	CH8501	Chemical Process Industries	PC	3	3	0	0	3
2.	CH8591	Heat Transfer	PC	5	3	2	0	4
3.	CH8551	Mass Transfer I	PC	3	3	0	0	3
4.	CH8502	Chemical Reaction Engineering I	PC	5	3	2	0	4
5.		Professional Elective I	PE	3	3	0	0	3
6.		Open Elective* I	OE	3	3	0	0	3
PRACTICALS								
7.	CH8581	Mechanical Operations Laboratory	PC	4	0	0	4	2
8.	CH8561	Heat Transfer Laboratory	PC	4	0	0	4	2
9.	HS8581	Professional Communication	EEC	2	0	0	2	1
			TOTAL	32	18	4	10	25

* - Course from the curriculum of the other UG Programmes.

SEMESTER VI

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
THEORY								
1	CH8601	Chemical Reaction Engineering II	PC	5	3	2	0	4
2	CH8651	Mass Transfer II	PC	5	3	2	0	4
3	CH8602	Chemical Engineering Thermodynamics II	PC	3	3	0	0	3
4	CH8652	Process Engineering Economics	PC	3	3	0	0	3
5	CH8653	Process Instrumentation, Dynamics and Control	PC	3	3	0	0	3
6		Professional Elective II	PE	3	3	0	0	3
PRACTICALS								
7	CH8611	Computational Programming Laboratory for Chemical Engineers	PC	4	0	0	4	2
8	CH8612	Chemical Reaction Engineering Laboratory	PC	4	0	0	4	2
			TOTAL	30	18	4	8	24

SEMESTER VII

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
THEORY								
1	CH8791	Transport Phenomena	PC	3	3	0	0	3
2	CH8701	Process Equipment Design	PC	4	4	0	0	4
3		Professional Elective III	PE	3	3	0	0	3
4		Professional Elective IV	PE	3	3	0	0	3
5		Open Elective* II	OE	3	3	0	0	3
PRACTICALS								
6	CH8711	Process Control Laboratory	PC	4	0	0	4	2
7	CH8781	Mass Transfer Laboratory	PC	4	0	0	4	2
8	CH8712	Internship	EEC	0	0	0	0	2
			TOTAL	24	16	0	8	22

* - Course from the curriculum of the other UG Programmes.

SEMESTER VIII

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
THEORY								
1		Professional Elective V	PE	3	3	0	0	3
2		Professional Elective VI	PE	3	3	0	0	3
PRACTICALS								
3	CH8811	Project Work	EEC	20	0	0	20	10
4	CH8812	Seminar	EEC	4	0	0	4	2
			TOTAL	30	6	0	24	18

TOTAL CREDITS : 186

PROFESSIONAL ELECTIVES (PE)

PROFESSIONAL ELECTIVE I, SEMESTER V

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	CH8001	Enzyme Engineering	PE	3	3	0	0	3
2.	CH8075	Petroleum Refining and Petrochemicals	PE	3	3	0	0	3
3.	CH8002	Food Technology	PE	3	3	0	0	3
4.	CH8094	Polymer Technology	PE	3	3	0	0	3
5.	GE8071	Disaster Management	PE	3	3	0	0	3

PROFESSIONAL ELECTIVE II, SEMESTER VI

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	CH8003	Air Pollution and Control	PE	3	3	0	0	3
2.	CH8004	Waste Water Treatment	PE	3	3	0	0	3
3.	GE8075	Intellectual Property Rights	PE	3	3	0	0	3
4.	CH8005	Electrochemical Engineering	PE	3	3	0	0	3

SEMESTER – VI

CODE	COURSE TITLE	L	T	P	C
THEORY					
CH6601	Energy Engineering	3	0	0	3
CH6602	Chemical Reaction Engineering I	3	0	0	3
CH6603	Mass Transfer-II	3	0	0	3
CH6604	Materials Science and Technology	3	0	0	3
CH6605	Process Instrumentation Dynamics and Control	3	0	0	3
	Elective – I	3	0	0	3
PRACTICALS					
CH6611	Heat Transfer Laboratory	0	0	3	2
CH6612	Process Equipment Design II	0	0	3	2
CH6613	Mass Transfer Laboratory	0	0	3	2
	TOTAL	**18**	**0**	**9**	**24**

SEMESTER – VII

CODE	COURSE TITLE	L	T	P	C
THEORY					
CH6701	Chemical Reaction Engineering II	3	0	0	3
CH6702	Transport Phenomena	3	0	0	3
CH6703	Chemical Process Plant Safety	3	0	0	3
CH6704	Process Economics	3	0	0	3
CH6705	Biochemical Engineering	3	0	0	3
	Elective – II	3	0	0	3
PRACTICALS					
CH6711	Chemical Reaction Engineering Laboratory.	0	0	3	2
CH6712	Seminar and Comprehension	0	0	2	1
CH6713	Process Control Laboratory	0	0	3	2
	TOTAL	**18**	**0**	**8**	**23**

SEMESTER – VIII

CODE	COURSE TITLE	L	T	P	C
THEORY					
	Elective III	3	0	0	3
	Elective IV	3	0	0	3
PRACTICALS					
CH6811	Project Work	0	0	12	6
	TOTAL	**6**	**0**	**12**	**12**

TOTAL NO OF CREDITS : 182

LIST OF ELECTIVES

B. TECH. CHEMICAL ENGINEERING

ELECTIVE I

CODE	COURSE TITLE	L	T	P	C
CH6001	Food Technology	3	0	0	3
CH6002	Fluidization Engineering	3	0	0	3
CH6003	Process Optimization	3	0	0	3
CH6004	Air Pollution and Control	3	0	0	3
CH6005	Green Chemistry and Engineering	3	0	0	3
CH6006	Environmental Engineering	3	0	0	3
CH6007	Wastewater Treatment	3	0	0	3

ELECTIVE II

CODE	COURSE TITLE	L	T	P	C
CH6008	Drugs and Pharmaceutical Technology	3	0	0	3
CH6009	Fertilizer Technology	3	0	0	3
CH6010	Modern Separation Processes	3	0	0	3
CH6011	Enzyme Engineering	3	0	0	3
MG6091	Industrial Management	3	0	0	3
CH6012	Fermentation Engineering	3	0	0	3

ELECTIVE – III

CODE	COURSE TITLE	L	T	P	C
CH6013	Petroleum Technology	3	0	0	3
CH6014	Pulp and Paper Technology	3	0	0	3
CH6015	Polymer Technology	3	0	0	3
CH6016	Process Modeling and Simulation	3	0	0	3
GE6081	Fundamentals of Nanoscience	3	0	0	3
CH6017	Computational Fluid Dynamics	3	0	0	3
GE6084	Human Rights	3	0	0	3

ELECTIVE – IV

CODE NO.	COURSE TITLE	L	T	P	C
EL6071	Electrochemical Engineering	3	0	0	3
CH6018	Process Plant Utilities	3	0	0	3
CH6019	Frontiers of Chemical Engineering	3	0	0	3
GE6075	Professional Ethics in Engineering	3	0	0	3
GE6757	Total Quality Management	3	0	0	3
CH6020	Industrial Instrumentation	3	0	0	3
GE6083	Disaster Management	3	0	0	3

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 01** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 203-B.Tech. Chemical Engineering

	Subject Code - >	BS8161	CY8151	GE8151	GE8152	GE8161	HS8151	MA8151	PH8151
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817203002	ABISHEK P		UA					U	U
312817203003	AKASH M							U	
312817203011	BHARATH S							U	
312817203015	DEVARAJ R							B+	
312817203019	HARIHARAN K							B	
312817203023	JAYARAJ J		UA					U	
312817203024	JEYA SURYA RAJ R							U	
312817203031	MANI ARASAN A		U	B				U	U
312817203035	PRADEEPAPRIYADHARSHINI K							B	
312817203041	RATHISH G			UA				UA	
312817203042	RUPAALISHA R		U						U
312817203044	SAKTHIVEL B			B+					
312817203051	SUKUMAR T							U	U
312817203053	VIGNESH B							UA	UA
312818203004	ARUNACHALAM R			U				U	U
312818203007	BOOBALAN M							B	
312818203009	CHANDRASEKAR C							U	
312818203015	KAMALI A P							U	
312818203024	MUKESH P		U	U	U			U	U
312818203028	PRAKASH RAJ S			U				U	U
312818203029	PUGAZHENTHI S			U					
312818203032	SANJEEV KUMAR S							U	
312818203033	SANKAR D							B	B+
312818203036	SIVASARATH T		B					U	
312818203037	SOUNDARIYA P				U				
312818203039	SUJI C							U	
312818203702	AMIRTHALINGAM S							U	B
312819203001	ANITHA V	O	A	U	B+	O	U	A	B+
312819203002	ARAVINDHAN D	A+	A	B	B+	O	B	B	B+
312819203003	ARCHANA MENON V	O	A+	B+	A	O	B+	A+	A+
312819203004	BASKARAN M	A	B+	B	A	O	U	U	B+
312819203005	DINESHBABU M	B	B	U	U	A	B	U	U
312819203006	JEEVA T	O	O	B+	A+	O	B+	A	B+
312819203007	KEERTHANA SALAS E	O	O	B+	A	O	U	A	A+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312819203008	MARIMUTHU M	A	A	U	B	A	U	B	B+
312819203009	MARSHALIN M	O	A+	B	A	A+	B+	A	A+
312819203010	NAVEEN KUMAR S	O	A	U	A	A	U	B+	A+
312819203011	PONVANNAN R	O	A	B	A+	O	B	A	A
312819203012	RACKESH SHALOM P	O	B+	B	A+	O	B+	B	A
312819203013	SAMBASIVAM J	A	B	U	B+	A	B	U	U
312819203014	SANIL KUMAR S	B+	B	B	B	B+	U	U	B
312819203015	SANJU JOHN	A	B	U	B	A	A	B	B
312819203016	SANTHOSH KUMAR G	A	B+	U	A+	A	B+	B	B+
312819203017	SARANKUMAR M	O	A+	U	A	O	B	A+	A+
312819203018	SATHISH S	O	A	U	A+	A+	B+	B	A
312819203019	SIVAKUMAR V	A+	B	U	A+	B	U	U	U
312819203020	SNEKA K	O	A+	B+	A	O	B	A	A+
312819203021	SOWDHAMBIKA R	O	B+	B+	A+	O	U	B+	A
312819203022	SRIKANTH M	O	A	B	B+	O	B	B	B+
312819203023	SRINIVASAN V	O	A+	B+	A	O	B	A+	A
312819203024	VARSHAN V	A	B	B	B+	A	U	U	B
312819203025	VIGNESH A	A+	B	B	B+	O	B	B	B
312819203026	YUVARAJ S	O	A	B+	A	O	B	A	A+

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 03** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 203-B.Tech. Chemical Engineering

	Subject Code - >	CH8301	CH8302	CH8351	CY8291	EE8352	EE8361	MA8391	ME8362
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817203002	ABISHEK P	UA	UA		UA	UA		UA	
312817203003	AKASH M					UA			
312817203011	BHARATH S							U	
312817203015	DEVARAJ R		U	UA		UA			
312817203016	DINESH KUMAR S	UA	UA	UA		UA		UA	
312817203019	HARIHARAN K		B+			U			
312817203023	JAYARAJ J	UA		UA	UA	UA		UA	
312817203024	JEYA SURYA RAJ R	U				U		B	
312817203031	MANI ARASAN A	UA	UA	UA	UA	UA		UA	
312817203041	RATHISH G	UA	UA	UA	UA	UA		UA	
312817203042	RUPAALISHA R		A	UA				U	
312817203044	SAKTHIVEL B	U	A			U			
312817203048	SHYAM RAJASEKAR S	UA			U				
312817203051	SUKUMAR T		B			UA		U	
312817203053	VIGNESH B	UA	UA	UA	UA	UA		UA	
312818203001	AISHWARYA R	B	B	B+	B+	U	A+	B	A+
312818203002	ANANTHARAJ M	B	A	A	B+	U	A+	A	A+
312818203003	ANANTHA RAMAN P	B+	A+	A	B+	B+	A+	B+	O
312818203004	ARUNACHALAM R	U	U	B	U	U	A+	U	B
312818203005	BALAJI N	B	A	A+	A	B	O	B	O
312818203006	BAVEN HRITHICK R	B	A	A	A	B	A+	B	A
312818203007	BOOBALAN M	B+	A	A	B	B	O	B	O
312818203008	BRINDHA K	B	A	B+	A+	B	A+	B	O
312818203009	CHANDRASEKAR C	U	U	B+	B	U	A	U	B
312818203010	DEEBIGA A	B+	O	A	A+	B	A+	A+	O
312818203011	DEEPIKA S	B	O	A	A+	A	A+	O	O
312818203012	DURGA V	U	A	A	A	B	O	A	O
312818203013	INIYAN E	B	A	A	B+	B+	A+	B+	O
312818203014	JEEVITHA D	B+	B	B	B	B	A+	B+	A+
312818203015	KAMALI A P	U	U	B	B	UA	A+	B	A
312818203016	KAMARAJ J	A+	B+	B+	B+	B+	A+	B	O
312818203017	KARTHIK J	A+	B+	B+	B+	U	A+	A	O
312818203018	KARTHIK M	A+	A	A+	A	B+	O	O	O
312818203019	KAVIN M	U	A	A	A	B+	A+	B+	O
312818203020	MADHURI DEVI M V	B+	A	A+	A	B+	A+	B	O

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312818203021	MANIMARAN M	B+	A	A+	A+	B+	A+	B+	O
312818203023	MOHAMED NIYASUDEEN M	U	A	A	B+	B	A+	A	B+
312818203024	MUKESH P	B	U	B	U	B	A	B	B
312818203025	NARAYANAN R	B	B	B+	B+	B	A	O	A
312818203026	NAVEENKUMAR T	A	A+	A+	B+	B+	A+	A	A
312818203027	NAVETHA A	B+	B	B+	B	U	A	B+	B+
312818203028	PRAKASH RAJ S	U	U	U	B	U	B+	B	B
312818203029	PUGAZHENTHI S	B+	B	B	A	B	A	B	A+
312818203030	RAGURAMAN M	A	B+	B+	B+	B+	O	A+	O
312818203032	SANJEEV KUMAR S	B	U	B	B	U	A+	B	A
312818203033	SANKAR D	A	B+	B+	B+	B	A+	A	A+
312818203034	SHAFIYA S	A	B+	A	B+	B	A+	U	A+
312818203036	SIVASARATH T	B	U	B	B+	U	O	B	A
312818203037	SOUNDARIYA P	B+	B	B+	A	B	A	U	A+
312818203038	SRIPRAKASH I	A+	B+	A	A+	B+	O	O	O
312818203039	SUJI C	B	B	B+	B+	U	A+	B+	A+
312818203040	VALLARASU C	B+	B	B+	B+	B	O	B	O
312818203041	VIGNESH RAJA P	O	O	A+	A	A	O	O	O
312818203042	YAMUNA E	U	B+	A	B+	B	A	A	O
312818203501	SHEEJA K	B	B+	A+	B+	U	A+	B	A+
312818203701	KISHORE SINGH M	B	B+	B	B	B	A	B	A
312818203702	AMIRTHALINGAM S	B	B	B+	B	U	A+	B	A

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 05** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 203-B.Tech. Chemical Engineering

	Subject Code - >	CH8075	CH8501	CH8502	CH8551	CH8561	CH8581	CH8591	HS8581	ORO551
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817203002	ABISHEK P	B	B	U	U	B+	B	U	B+	B
312817203003	AKASH M	U	B	B	U	O	A+	U	A+	B+
312817203004	AKSHAY C V	B	A	A	A	O	O	B+	A+	B
312817203006	ANANTHAKUMAR S	A	B+	A+	A	O	O	A	A	B+
312817203007	ANBU SELVAN R	O	A+	A+	A	O	O	A	A	A
312817203008	ASAI THAMBI V	B+	B	A	A	O	A+	B	A	U
312817203009	ATCHAYA R	A	A	B+	A	O	O	A+	A	B+
312817203010	BHARATH E	B+	A	U	B	O	A+	B+	A+	B+
312817203011	BHARATH S	B+	B+	U	B	A+	B+	B	A	B+
312817203012	BHARATH KUMAR V	A	B+	A	A	O	O	B+	A+	A
312817203013	BHARKAVI S	A+	A	A	B+	O	O	A	A	B+
312817203014	DEEPIKA R	A+	A	A+	A	O	O	A	A	A
312817203015	DEVARAJ R	UA	B	U	UA	A+	B	B	A	B+
312817203016	DINESH KUMAR S	B	U	U	U	A+	B	U	A	B
312817203017	GAYATHRI K	A	A	A	B+	O	A+	B+	A+	B
312817203018	GOWRI G	O	A+	O	A+	O	O	A	A+	A
312817203019	HARIHARAN K	B+	B+	B+	U	A	B+	U	A	U
312817203020	HARINI D	A	B	B+	B	A+	A	B	A	B
312817203021	JAIVIGNESH B	A	B+	B+	B	O	A+	B+	A+	B+
312817203022	JAYA PRAVIN J	A	A	B+	B	O	O	A	A	B+
312817203023	JAYARAJ J	B	B	U	U	B+	B	B	A	B
312817203024	JEYA SURYA RAJ R	B	B+	B	B	A+	B	B+	A	B
312817203026	KAPIL M	A+	A	B+	B	A+	B+	A	A	A
312817203027	KARTHICKEYAN S	A	A	A	B	O	O	A+	A+	B+
312817203028	KEERTHANA A	B+	B	U	B	O	A+	B+	A	B+
312817203029	KEERTHANA R (11-04-1999)	B+	A	A	U	O	O	A	A	B+
312817203031	MANI ARASAN A	B	B	U	U	A	A	B	A	U
312817203032	MENAGA M	UA	A+	A	B+	O	O	B+	A+	B+
312817203033	MUTHU UMAYAL KT KA	A+	A+	A	B+	O	O	A+	O	A
312817203034	OOVIYA S	A+	A+	A+	B+	O	O	A+	A+	A
312817203035	PRADEEPAPRIYADHARSHINI K	B+	B+	A	U	O	A+	B+	A	B
312817203036	PRASATH V	B+	A	B+	B	O	A+	B	A	B
312817203037	PRAVEEN KUMAR M	A+	A	B	B	A+	A+	A	A	B
312817203039	RAJKUMAR K	A	A	B+	B+	A+	A+	A	A	B

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312817203041	RATHISH G	UA	UA	UA	UA	UA	UA	UA	UA	UA
312817203042	RUPAALISHA R	A	B	U	U	A+	O	A	A+	B
312817203043	SAKTHI SIVA SHANGARI R	A	A	A	B	O	O	A+	A+	B
312817203044	SAKTHIVEL B	B	U	B	U	A+	A+	B	A+	B
312817203045	SANTHIYA S	B+	B	B	A	O	A+	A	A	B+
312817203046	SATHANA K	B+	B+	B	U	O	O	B	A	B+
312817203048	SHYAM RAJASEKAR S	B+	B	B	B	A+	B+	B+	A+	B+
312817203049	SIVAKUMAR M	B+	A	B+	A	O	O	A+	A	B+
312817203050	SUBHIKSHA J	O	A+	A+	O	O	O	O	O	A+
312817203051	SUKUMAR T	U	B+	U	U	B+	B	B	A	B
312817203052	VENKATESH B	A+	A+	A	A+	O	O	A	A	A+
312817203053	VIGNESH B	UA	UA	UA	UA	B+	B	UA	UA	UA
312817203055	VISWANATHAN T	B+	A	A	A+	O	O	A	O	A+
312817203056	YUVALAKSHMI K	B	A	B+	A	O	O	A	A+	B+

ANNA UNIVERSITY :: CHENNAI - 600025.
OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of April / May Examination,2020.

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 08** **DATE OF PUBLICATION :17-10-2020**

Branch : 203-B.Tech. Chemical Engineering

	Subject Code - >	CH6013	CH6018	CH6811
Reg. Number	**Stud. Name**	**Grade**	**Grade**	**Grade**
312816203001	AJAY S	C	E	A
312816203002	ANAND E	E	E	A
312816203003	ANNE SP	B	B	S
312816203005	BRITHIVI RAJAN R	C	C	A
312816203006	DINESH KUMAR K	E	E	A
312816203007	JAI GANESH D	C	C	S
312816203008	KATHIRESAN R	C	C	A
312816203010	MAHENDRAN S	D	C	S
312816203011	MOHAMED THALIF S	B	B	S
312816203012	MONISHA G	B	C	S
312816203013	MUKESH KANNAN S	E	E	A
312816203014	NIRMAL KUMAR G	C	D	A
312816203015	NITHINA E	B	B	S
312816203016	NOORA DHUSNIM M	A	B	S
312816203017	PRABHAKARAN R	B	A	S
312816203018	PRAVEEN J	B	C	S
312816203019	PREETHI R	B	B	S
312816203020	RAGHUL K	E	E	A
312816203021	RAJA GANAPATHY D	C	C	S
312816203022	SANTHOSH M D	E	E	A
312816203023	SATHISHKUMAR M	D	C	A
312816203025	SHOBIKA S	A	B	S
312816203026	SOWNDARI S	S	B	S
312816203027	SUDHARSAN S	C	D	A
312816203028	SYED HAMEED ANWAR SAHIB V	A	A	S
312816203029	THANGA SIVA V	A	B	S
312816203030	VAITHIYANATHAN G	B	B	S
312816203031	VARSHA V	C	C	S
312816203032	VIGNESH I	C	B	S
312816203033	VISHNUVARATHAN G	A	B	S
312816203034	YUVARAJ K	C	D	S
312816203301	KARTHICK R	C	C	S

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 02** **DATE OF PUBLICATION :15-08-2020**

Branch : 203-B.Tech. Chemical Engineering

	Subject Code - >	BE8256	CH8201	CH8281	CY8292	GE8261	HS8251	MA8251	PH8254
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312819203001	ANITHA V	A+	A+	O	A+	O	A+	A+	A+
312819203002	ARAVINDHAN D	A+	A+	O	A+	O	A+	A+	A+
312819203003	ARCHANA MENON V	O	O	O	O	O	O	O	O
312819203004	BASKARAN M	B	B	O	A	O	B+	B+	B
312819203005	DINESHBABU M	B	B	O	B	O	A	A	B
312819203006	JEEVA T	O	O	O	O	O	O	O	O
312819203007	KEERTHANA SALAS E	O	O	O	O	O	O	O	O
312819203008	MARIMUTHU M	A+	A+	O	A+	O	A	B+	A+
312819203009	MARSHALIN M	O	O	O	O	O	O	O	O
312819203010	NAVEEN KUMAR S	A+	A	O	A+	O	A	A+	A
312819203011	PONVANNAN R	O	O	O	O	O	O	O	O
312819203012	RACKESH SHALOM P	O	A	O	O	O	O	O	A+
312819203013	SAMBASIVAM J	B+	B	O	A+	O	B+	B+	B
312819203014	SANIL KUMAR S	A+	B+	O	B+	O	A	A	A
312819203015	SANJU JOHN	A	A+	O	B+	O	A+	A+	A
312819203016	SANTHOSH KUMAR G	A+	A+	O	A+	O	A+	A+	A+
312819203017	SARANKUMAR M	O	O	O	O	O	O	O	O
312819203018	SATHISH S	A+	A+	O	A+	O	A+	A+	A
312819203019	SIVAKUMAR V	B+	B	O	B+	O	B+	B+	A
312819203020	SNEKA K	O	O	O	O	O	O	O	O
312819203021	SOWDHAMBIKA R	O	O	O	O	O	O	O	O
312819203022	SRIKANTH M	A+	A+	O	A+	O	A+	A+	A+
312819203023	SRINIVASAN V	O	O	O	O	O	O	O	O
312819203024	VARSHAN V	B+	B+	O	A+	O	A+	A+	B
312819203025	VIGNESH A	B+	A+	O	A+	O	A+	A+	A+
312819203026	YUVARAJ S	O	O	O	O	O	O	O	O

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 04** **DATE OF PUBLICATION :15-08-2020**

Branch : 203-B.Tech. Chemical Engineering

	Subject Code - >	CH8401	CH8402	CH8451	CH8461	CH8491	CY8281	GE8291	MA8491
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312818203001	AISHWARYA R	A+	A+	A+	O	A+	O	A+	A+
312818203002	ANANTHARAJ M	A+	A+	A+	O	A+	O	A+	A+
312818203003	ANANTHA RAMAN P	O	O	O	O	O	O	O	O
312818203004	ARUNACHALAM R	B+	B	B	A+	A	A+	A	B
312818203005	BALAJI N	O	O	O	O	O	O	O	O
312818203006	BAVEN HRITHICK R	A+	A+	A+	O	A+	O	A+	A+
312818203007	BOOBALAN M	A+	A+	A+	O	A+	O	A+	A+
312818203008	BRINDHA K	A+	A+	A+	O	A+	O	A+	A+
312818203009	CHANDRASEKAR C	A+	B	A+	A+	A+	A+	A	A+
312818203010	DEEBIGA A	O	O	O	O	O	O	O	O
312818203011	DEEPIKA S	O	O	O	O	O	O	O	O
312818203012	DURGA V	O	O	O	O	O	O	O	O
312818203013	INIYAN E	A+	A+	A+	O	A+	O	A+	A+
312818203014	JEEVITHA D	A+	A	A+	O	A+	O	A+	A+
312818203015	KAMALI A P	A	B+	B	A+	A+	A+	A+	A
312818203016	KAMARAJ J	A+	A+	A+	O	A+	O	A+	A+
312818203017	KARTHIK J	A+	A+	A+	O	A+	O	A+	A+
312818203018	KARTHIK M	O	O	O	O	O	O	O	O
312818203019	KAVIN M	O	O	A+	O	O	O	O	O
312818203020	MADHURI DEVI M V	O	O	O	O	O	O	O	O
312818203021	MANIMARAN M	O	O	O	O	O	O	O	O
312818203023	MOHAMED NIYASUDEEN M	A+	A+	A+	O	A+	O	A+	A+
312818203024	MUKESH P	B	B	B	A+	A+	A+	B	B
312818203025	NARAYANAN R	A+	A	A+	O	A+	O	A+	A+
312818203026	NAVEENKUMAR T	O	O	O	O	O	O	O	O
312818203027	NAVETHA A	A+	B	A	O	A+	O	A+	A+
312818203028	PRAKASH RAJ S	B+	B	B	A+	B+	A+	A	B
312818203029	PUGAZHENTHI S	A+	A+	A+	O	A+	O	A+	A+
312818203030	RAGURAMAN M	O	O	O	O	O	O	O	O
312818203032	SANJEEV KUMAR S	A	B+	A	A+	A+	A+	A+	A
312818203033	SANKAR D	A+	A+	A+	O	A+	O	A+	A+
312818203034	SHAFIYA S	A+	A+	B+	O	A+	O	A+	A+
312818203036	SIVASARATH T	A	A	A	A+	A+	A+	A+	A+
312818203037	SOUNDARIYA P	A+	A+	A+	O	A+	O	A+	A+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312818203038	SRIPRAKASH I	O	O	O	O	O	O	O	O
312818203039	SUJI C	A	A+	A+	O	A+	O	A+	A+
312818203040	VALLARASU C	A+	A+	A+	O	A+	O	A+	A+
312818203041	VIGNESH RAJA P	O	O	O	O	O	O	O	O
312818203042	YAMUNA E	O	O	O	O	O	O	O	O
312818203501	SHEEJA K	A+	A+	A+	O	A+	O	A+	A+
312818203701	KISHORE SINGH M	A+	B+	A	O	A+	O	A+	A+
312818203702	AMIRTHALINGAM S	A+	A+	B+	A+	A+	A+	A	A

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 06** **DATE OF PUBLICATION :15-08-2020**

Branch : 203-B.Tech. Chemical Engineering

	Subject Code - >	CH8004	CH8601	CH8602	CH8611	CH8612	CH8651	CH8652	CH8653
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817203002	ABISHEK P	B	B	B+	A	A	B	B+	B
312817203003	AKASH M	B	A	B+	A+	A+	A	A	B+
312817203004	AKSHAY C V	A+	O	O	O	O	O	O	O
312817203006	ANANTHAKUMAR S	O	O	O	O	O	O	O	O
312817203007	ANBU SELVAN R	O	O	O	O	O	A+	O	O
312817203008	ASAI THAMBI V	O	A+	A+	O	O	A+	A+	A+
312817203009	ATCHAYA R	O	O	O	O	O	O	O	O
312817203010	BHARATH E	O	A+	A+	O	O	A+	A+	A+
312817203011	BHARATH S	O	A+	A+	O	O	A	A+	A+
312817203012	BHARATH KUMAR V	O	O	O	O	O	O	O	O
312817203013	BHARKAVI S	O	O	O	O	O	O	O	O
312817203014	DEEPIKA R	O	O	O	O	O	O	O	O
312817203015	DEVARAJ R	B	A	A	A+	A+	A	B+	A
312817203016	DINESH KUMAR S	A	B+	A	A	A	A+	A+	B+
312817203017	GAYATHRI K	O	O	O	O	O	A+	O	O
312817203018	GOWRI G	O	O	O	O	O	O	O	O
312817203019	HARIHARAN K	A	A+	A	A+	A+	A	A	A
312817203020	HARINI D	O	A+	A+	O	O	A	A+	A+
312817203021	JAIVIGNESH B	A	O	A	O	O	A+	O	O
312817203022	JAYA PRAVIN J	O	O	O	O	O	O	A+	O
312817203023	JAYARAJ J	B	B	B	A	A	A	B+	B+
312817203024	JEYA SURYA RAJ R	A	A+	A	A+	A+	A	A	A+
312817203026	KAPIL M	A+	A+	A+	O	O	A+	A+	A+
312817203027	KARTHICKEYAN S	O	O	O	O	O	O	O	O
312817203028	KEERTHANA A	A	A+	A+	O	O	A+	A+	A+
312817203029	KEERTHANA R (11-04-1999)	O	O	O	O	O	O	O	A+
312817203031	MANI ARASAN A	B	B+	B	A+	A+	A	B+	A
312817203032	MENAGA M	A	A+	A+	O	O	A+	A+	A
312817203033	MUTHU UMAYAL KT KA	O	O	O	O	O	O	O	O
312817203034	OOVIYA S	O	O	O	O	O	O	O	O
312817203035	PRADEEPAPRIYADHARSHINI K	A	A+	A+	O	O	A+	A+	A+
312817203036	PRASATH V	O	A+	A+	O	O	A+	A+	A+
312817203037	PRAVEEN KUMAR M	A+	A+	A+	O	O	A+	A+	A+
312817203039	RAJKUMAR K	A+	A+	A+	O	O	A+	A+	A+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312817203041	RATHISH G								
312817203042	RUPAALISHA R	B	A	B	A+	A+	A	A+	A
312817203043	SAKTHI SIVA SHANGARI R	O	O	O	O	O	O	O	O
312817203044	SAKTHIVEL B	A+	A	A+	A+	A+	A	A+	A+
312817203045	SANTHIYA S	O	O	O	O	O	O	O	A+
312817203046	SATHANA K	O	A+	A+	O	O	A+	A+	A+
312817203048	SHYAM RAJASEKAR S	A	A	A	A+	A+	A+	A+	A
312817203049	SIVAKUMAR M	O	O	O	O	O	O	O	O
312817203050	SUBHIKSHA J	O	O	O	O	O	O	O	O
312817203051	SUKUMAR T	B	B+	A	A+	A+	B	A	B+
312817203052	VENKATESH B	O	O	O	O	O	O	O	O
312817203053	VIGNESH B								
312817203055	VISWANATHAN T	O	O	O	O	O	O	O	O
312817203056	YUVALAKSHMI K	O	O	O	O	O	O	O	A+

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 07** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 203-B.Tech. Chemical Engineering

	Subject Code - >	CH6009	CH6701	CH6702	CH6703	CH6704	CH6705	CH6711	CH6712	CH6713
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312816203001	AJAY S	U	U	U	U	U	E	C	B	B
312816203002	ANAND E	E	U	U	D	U	E	C	D	C
312816203003	ANNE SP	A	A	B	S	A	B	S	S	S
312816203005	BRITHIVI RAJAN R	B	D	D	C	D	B	A	D	A
312816203006	DINESH KUMAR K	E	U	U	U	E	E	C	B	B
312816203007	JAI GANESH D	A	C	C	A	B	B	S	A	S
312816203008	KATHIRESAN R	C	U	E	A	E	E	B	C	B
312816203010	MAHENDRAN S	C	C	U	B	C	E	A	A	B
312816203011	MOHAMED THALIF S	A	C	U	B	C	C	S	A	S
312816203012	MONISHA G	B	B	U	A	B	B	S	A	S
312816203013	MUKESH KANNAN S	U	U	UA	E	U	E	C	D	C
312816203014	NIRMAL KUMAR G	A	C	U	A	B	B	A	D	B
312816203015	NITHINA E	B	D	U	A	B	C	S	S	S
312816203016	NOORA DHUSNIM M	S	S	A	A	A	A	S	S	A
312816203017	PRABHAKARAN R	B	A	C	S	A	A	S	S	S
312816203018	PRAVEEN J	B	C	C	A	A	C	A	B	B
312816203019	PREETHI R	S	A	C	A	S	A	S	A	S
312816203020	RAGHUL K	U	U	U	D	U	U	D	D	C
312816203021	RAJA GANAPATHY D	A	C	C	A	C	D	A	A	A
312816203022	SANTHOSH M D	U	U	E	E	C	D	C	C	B
312816203023	SATHISHKUMAR M	C	U	C	A	D	C	B	A	B
312816203025	SHOBIKA S	S	S	E	A	A	A	S	S	S
312816203026	SOWNDARI S	S	S	C	S	S	A	S	A	S
312816203027	SUDHARSAN S	D	E	U	B	C	D	C	C	C
312816203028	SYED HAMEED ANWAR SAHIB V	A	S	C	A	A	B	S	S	S
312816203029	THANGA SIVA V	C	A	C	A	D	B	S	S	S
312816203030	VAITHIYANATHAN G	B	B	C	B	B	A	S	S	S
312816203031	VARSHA V	B	B	C	S	B	A	S	A	S
312816203032	VIGNESH I	B	B	C	B	C	A	S	S	S
312816203033	VISHNUVARATHAN G	C	S	C	B	B	S	S	S	S
312816203034	YUVARAJ K	C	E	D	A	C	C	A	S	S
312816203301	KARTHICK R	D	D	D	C	C	C	A	S	B

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

CH8501 CHEMICALPROCESSINDUSTRIES L TPC
3 0 03

OBJECTIVE:

- To impart knowledge on various aspects of production engineering and make the student understand the practical methods of production in a chemicalfactory.

UNITI SULFUR, SULFURIC ACIDAND CEMENT 9

Sulfur, Raw materials Sources, Mining and production of Sulfur – Sulfuric acid, Methods of production of Sulfuric acid – Contact process – Chamber process. Cement – properties of Cement – Methods of production – Overall factors for Cement industry.

UNITII FERTILIZER INDUSTRY 9

Major Components of Fertilizer industries – Nitrogen industries, ammonia, nitric acid, urea – Phosphorus industries - Phosphorus, Phosphoric acid, Super Phosphate – Potassium chloride, Potassium Sulphate

UNITIII PULP, PAPER, SUGAR ANDSTARCH INDUSTRIES 9

Pulp – Methods of production – Comparison of pulping processes. Paper – types of paper products, Raw materials, Methods of production. Sugar – Methods of production – by products of the Sugar industry – Starch – Methods of production, Starch derivations.

UNITIV PETROLEUM AND PETROCHEMICAL INDUSTRIES 9

Petroleum – Chemical Composition, Classification of crude petroleum, Petroleum Refinery products – Petroleum Conversion processes – Pyrolysis and Cracking, Reforming Polymerization, isomerization and Alkylation – petrochemicals – methanol, chloro methanol, Acetylene and ethylene, Isopropanol, Acrylonitrile, Butadiane – Chemicals from Aromatics - Benzene, Toluene and Xylene.

UNITV FUEL ANDINDUSTRIAL GASES 9

Fuel Gases – Producer gas, Water gas, Coke oven gas, Natural gas, Liquefied natural gas – Industrial gases – Carbon dioxide, hydrogen, nitrogen andoxygen.

TOTAL: 45 PERIODS

OUTCOME:

- At the end of this course, the student can classify the chemical process industry into industrial categories of base, intermediate end-products and specialty chemicalsmanufacturers.

TEXT BOOKS:

1. Dryden, C.E, Outlines of Chemical technology, II Ed., Affiliate East West press,2003.
2. Moulin, J.A., M. Makkee, and Diepen, A.V., Chemical Process Technology, Wiley,2001.

REFERENCES:

1. Austin, G.T., Shreve's "Chemical Process Industries", 5th ed., McGraw-Hill,1998.
2. SrikumarKoyikkal, "Chemical Process Technology and Simulation", PHI LearningLtd

CH8591 HEAT TRANSFER L TPC
3 2 04

OBJECTIVE:

- To enable the students to learn heat transfer by conduction, convection and radiation and heat transfer equipments like evaporator and heatexchanger

UNITI 15

Importance of heat transfer in Chemical Engineering operations - Modes of heat transfer - Fourier's

law of heat conduction - one dimensional steady state heat conduction equation for flat plate, hollow cylinder, - Heat conduction through a series of resistances - Thermal conductivity measurement; effect of temperature on thermal conductivity; Heat transfer in extendedsurfaces.

UNITII **15**

Concepts of heat transfer by convection - Natural and forced convection, analogies between transfer of momentum and heat - Reynold's analogy, Prandtl and Coulburn analogy. Dimensional analysis in heat transfer, heat transfer coefficient for flow through a pipe, flow past flat plate, flow through packed beds.

UNITIII **15**

Heat transfer to fluids with phase change - heat transfer from condensing vapours, drop wise and film wise condensation, Nusselt equation for vertical and horizontal tubes, condensation of superheated vapours, Heat transfer to boiling liquids - mechanism of boiling, nucleate boiling and film boiling.

UNITIV **15**

Theory of evaporation - single effect and multiple effect evaporation - Design calculation for single and multiple effect evaporation. Radiation heat transfer - Black body radiation, Emissivity, Stefan - Boltzmann law, Plank's law, radiation between surfaces.

UNITV **15**

Log mean temperature difference - Single pass and multipass heat exchangers; plate heat exchangers; use of correction factor charts; heat exchangers effectiveness; number of transfer unit - Chart for different configurations - Fouling factors

TOTAL: 75 PERIODS

OUTCOMES:

At the end of this course,

- The students would have knowledge in various heat transfer methodology in process engineering.
- To design heat transfer equipmentssuch as furnace, boilers, heat exchangersevaporation

TEXT BOOKS:

1. Holman, J. P., 'Heat Transfer ', 8thEdn., McGraw Hill,1997.
2. Ozisik, M. N., Heat Transfer: A Basic Approach, McGraw-Hill,1984
3. Kern, D.Q., "Process Heat Transfer ", McGraw-Hill,1999.

REFERENCES:

1. McCabe, W.L., Smith, J.C., and Harriot, P., "Unit Operations in Chemical Engineering", 6thEdn., McGraw-Hill,2001.
2. Coulson, J.M. and Richardson, J.F., "Chemical Engineering " Vol. I, 4thEdn., Asian Books Pvt. Ltd., India,1998.

CH8551 **MASSTRANSFER I** **L TP C 3 0 0 3**

OBJECTIVE:

- Students will learn to determine mass transfer rates under laminar and turbulentconditions.

UNITI **9**

Introduction to mass transfer operations; Molecular diffusion in gases, liquids and solids; diffusivity measurement and prediction; multi-component diffusion.

UNITII **10**

Eddy diffusion, concept of mass transfer coefficients, theories of mass transfer, different transport analogies, application of correlations for mass transfer coefficients, inter phase mass transfer, relationship between individual and overall mass transfer coefficients. NTU and NTP concepts,Stage-

wise and differential contractors.

UNITIII **9**

Humidification – Equilibrium, humidity chart, adiabatic and wet bulb temperatures; humidification operations; theory and design of cooling towers, dehumidifiers and humidifiers using enthalpy transfer unit concept.

UNITIV **9**

Drying– Equilibrium; classification of dryers; batch drying – Mechanism and time of cross through circulation drying, continuous dryers – material and energy balance; determination of length of rotary dryer using rate concept.

UNITV **8**

Crystallization - Equilibrium, classification of crystallizers, mass and energy balance; kinetics of crystallization – nucleation and growth; design of batch crystallizers; population balance model and design of continuous crystallizers.

TOTAL: 45 PERIODS

OUTCOMES:

At the end of the course,

- Students would have knowledge in diffusion and its application in laminar and turbulent conditions.
- Students would apply the mass transfer concepts in the design of humidification columns, dryers andcrystallizers.

TEXT BOOKS:

1. Treybal, R.E., “Mass Transfer Operations”, 3rdEdn, McGraw-Hill,1981.
2. Geankoplis, C.J., “Transport Processes and Unit Operations”, 4th Edition, Prentice Hall Inc., New Jersey,2003.
3. McCabe, W.L., Smith, J.C., and Harriot, P., “Unit Operations in Chemical Engineering”, 7thEdn., McGraw-Hill,2005.

REFERENCES:

1. Coulson, J.M. and Richardson, J.F., “Chemical Engineering” Vol. I and II, 4th Edition, Asian Books Pvt. Ltd., India,1998.
2. J.D. Seader and E.J. Henley, “Separation Process Principles”, 2nd Ed., John Wiley,2006.
3. Binay K. Dutta, ”Principles of Mass Transfer and Separation Processes”, PHI Learning Ltd, 2013.

CH8502 **CHEMICAL REACTIONENGINEERINGI** **L TPC**
3 2 04

OBJECTIVE:

- To enable the students to gain knowledge on different types of chemical reactors, the design of chemical reactors under isothermal and non-isothermalconditions

UNITI **12**

Rate equation, elementary, non-elementary reactions, theories of reaction rate and Prediction; Design equation for constant and variable volume batch reactors, analysis of experimental kinetics data, integral and differential analysis.

UNITII **12**

Designofcontinuousreactors-stirredtankandtubularflowreactor,recyclereactors,Equalsized

CSTRs in series and parallel, Equal sized PFRs in series and parallel,size comparison of reactors.

UNITIII **15**

Design of reactors for multiple reactions - consecutive, parallel and mixed reactions - factors affecting choice, optimum yield and conversion, selectivity, reactivity and yield.

UNITIV **18**

Non-isothermal homogeneous reactor systems, adiabatic reactors, rates of heat exchanges for different reactors, design for constant rate input and constant heat transfer coefficient, operation of batch and continuous reactors, optimum temperature progression.

UNITV **18**

The residence time distribution as a factor of performance; residence time functions and relationship between them in reactor; basic models for non-ideal flow; conversion in non-ideal reactors

TOTAL: 75 PERIODS

OUTCOME:

- At the end of this course, the students would gain knowledge on the selection of reactor for the requiredreaction.

TEXT BOOKS:

1. Levenspiel O, “Chemical Reaction Engineering”, Wiley Eastern Ltd., II Edition,2000.
2. Smith, J.M, “Chemical Engineering Kinetics”, McGraw Hill, III Edition,1981.
3. Fogler.H.S., “Elements of Chemical Reaction Engineering”, Prentice Hall of India Ltd., 3rd Edition,2000.

REFERENCE:

1. Froment. G.F. &K.B.Bischoff, “Chemical Reactor Analysis and Design”, John Wiley and Sons, 1979.

CH8451 **MECHANICALOPERATIONS** **L T PC**
3 0 0 3

OBJECTIVE:

- To impact knowledge in the field of particle size reduction and also deals with the detail construction and working of equipment’s used for mechanicaloperations.

UNITI PARTICLE CHARACTERIZATIONANDMEASUREMENT **9**

General characteristics of solids, different techniques of size analysis- Static - Image analysis and Dynamic analysis - Light scattering techniques, shape factor, surface area determination, estimation of particle size. Advanced particle size analysis techniques. Screening methods and equipment, screen efficiency, ideal and actualscreens.

UNITII PARTICLE SIZE REDUCTION ANDSIZEENLARGEMENT **9**

Laws of size reduction, energy relationships in size reduction, methods of size reduction, classification of equipments, crushers, grinders, disintegrators for coarse, intermediate and fine grinding, power requirement,workindex;Advancedsizereductiontechniques-Nanoparticlefabrication-Topdown

approach - Bottom-up approach. Size enlargement - Importance of size enlargement, principle of granulation, briquetting, pelletisation, and flocculation. Fundamentals of particle generation.

UNITIII PARTICLE SEPARATION (GAS-SOLID AND LIQUID-SOLIDSYSTEM) 9

Gravity settling, sedimentation, thickening, elutriation, double cone classifier, rake classifier, bowl classifier. Centrifugal separation - continuous centrifuges, super centrifuges, design of basket centrifuges; industrial dust removing equipment, cyclones and hydro cyclones, electrostatic and magnetic separators, heavy media separations, floatation, jigging

UNITIV FILTRATION AND FILTRATIONEQUIPMENTS 9

Theory of filtration, Batch and continuous filters, Flow through filter cake and filter media, compressible and incompressible filter cakes, filtration equipments - selection, operation and design of filters and optimum cycle of operation, filteraids.

UNITV MIXING ANDPARTICLEHANDLING 9

Mixing and agitation - Mixing of liquids (with or without solids), mixing of powders, selection of suitable mixers, power requirement for mixing. Storage and Conveying of solids - Bunkers, silos, bins and hoppers, transportation of solids in bulk, Powder hazards, conveyer selection, different types of conveyers and their performance characteristics.

TOTAL: 45 PERIODS

OUTCOME:

- At the end of this course, the students will be able to understand the overview of equipment used to perform various mechanical operations and problems associated during the implementation andapplications.

TEXT BOOKS:

1. McCabe, W.L., Smith, J.C., and Harriot, P., “Unit Operations in Chemical Engineering”, 7thEdn., McGraw-Hill,2005.
2. Badger W.L. and Banchero J.T., “Introduction to Chemical Engineering”, Tata McGraw Hill, 1997.
3. Foust, A. S., Wenzel, L.A., Clump, C.W., Naus, L., and Anderson, L.B., “Principles of Unit Operations”, 2ndEdn., John Wiley & Sons,1994.
4. Hiroaki Masuda ,KoHigashitani and Hideto Yoshida, Powder Technology Handbook, 3rd Edition.

REFERENCES:

1. Coulson, J.M. and Richardson, J.F., “Chemical Engineering” Vol. II, 4thEdn., Asian Books Pvt. Ltd., India,1998.
2. Christie J. Geankoplis, Transport processes and unitoperations.
3. Sunggyu Lee, Kimberly H. Henthorn, Particle Technology andApplications.
4. Martin Rhodes, Introduction to Particle Technology, SecondEdition.
5. Richard R. Klimpel, Introduction to the Principles of Size Reduction of

Particles by Mechanical Means, NSF Engineering Research Center for Particle Science & Technology. University of Florida,1997.

CH8301 FLUID MECHANICS FORCHEMICALENGINEERS L T P C
2 2 0 3

OBJECTIVE:

- To acquire a sound knowledge on fluid properties, fluid statics, dynamic characteristics of fluid flow for through pipes and porous medium, flow measurement and fluidmachineries

UNITI **12**

Methods of analysis and description - fluid as a continuum – Velocity and stress field - Newtonian and non-Newtonian fluids – Classification of fluid motion

UNITII **12**

Fluid statics – basic equation - equilibrium of fluid element – pressure variation in a static fluid - application to manometer – Differential analysis of fluid motion – continuity, equation of motions, Bernoulli equation and Navier- Stokes equation.

UNITIII **12**

The principle of dimensional homogeneity – dimensional analysis, Rayleigh method and the Pi-

theorem - non-dimensional action of the basic equations - similitude - relationship between dimensional analysis and similitude - use of dimensional analysis for scale up studies

UNITIV **12**

Reynolds number regimes, internal flow - flow through pipes – pressure drop under laminar and turbulent flow conditions – major and minor losses; Line sizing; External flows - boundary layer concepts, boundary layer thickness under laminar and turbulent flow conditions- Flow over a sphere
– friction and pressure drag - flow through fixed and fluidizedbeds.

UNITV **12**

Flow measurement - Constant and variable head meters; Velocity measurement techniques; Types, characteristics and sizing of valves; Classification, performance characteristics and sizing of pumps, compressors and fans

TOTAL: 60 PERIODS

OUTCOMES:

- Understand the fundamental properties of fluids and its characteristics under staticconditions.
- Develop empirical correlation using dimensionlessanalysis.
- Analyze flow of fluid through pipe and over the ofsolid,

- Understand and select flow meter(s), characteristics of pumps used in Chemical Process Industries

TEXT BOOKS:

1. Noel de Nevers, “Fluid Mechanics for Chemical Engineers “, Second Edition, McGraw-Hill, (1991).
2. McCabe W.L, Smith, J C and Harriot. P “Unit operations in Chemical Engineering”, McGraw Hill, VII Edition,2005
3. Munson, B. R., Young, D.F., Okiishi, T.H. “Fundamentals of Fluid Mechanics”, 5th Edition“, John Wiley,2006

REFERENCES:

1. White, F.M., “Fluid Mechanics “, IV Edition, McGraw-Hill Inc.,1999.
2. James O Wilkes and Stacy G Bike, “Fluid Mechanics for Chemical Engineers’ Prentice Hall PTR (International series in Chemical Engineering)(1999)

CH8004 WASTEWATERTREATMENT L T PC
3 0 03

OBJECTIVE:

- To focus on the wastewater transport system and the theory and design technique for the wastewater treatmentprocess.

UNITI WASTE WATER TREATMENTANOVERVIEW 9

Terminology – Regulatios – Health and Environment Concerns in waste water management – Constituents in waste water inorganic – Organic and metallic constituents.

UNITII PROCESS ANALYSISANDSELECTION 9

Components of waste water flows – Analysis of Data – Reactors used in waste water treatment – Mass Balance Analysis – Modeling of ideal and non ideal flow in Reactors – Process Selection.

UNITIII CHEMICALUNITPROCESSES 9

Role of unit processes in waste water treatment chemical coagulation – Chemical precipitation for improved plant performance chemical oxidation – Neutralization – Chemical Storage.

UNITIV BIOLOGICAL TREATMENT 9

Overview of biological Treatment – Microbial metabolism – Bacterial growth and energatus – Aerobic biological oxidation – Anaerobic fermentation and oxidation – Trickling filters – Rotating biological contractors – Combined aerobic processes – Activated sludge film packing.

UNITV ADVANCED WASTEWATERTREATMENT 9

Technologies used in advanced treatment – Classification of technologies Removal of Colloids and suspended particles – Depth Filtration – Surface Filtration – Membrane Filtration Absorption – Ion Exchange – Advanced oxidation process.

TOTAL: 45 PERIODS

OUTCOME:

- Upon completion of this course, the students would have knowledge on physical / chemical / biological characteristics of and the evaluation technique forsewage.

TEXT BOOKS:

1. Waste water Engineering Treatment and Reuse: McGraw Hill, G. Tchobanoglous, FI Biston, 2002.
2. Industrial Waste Water Management Treatment and Disposal by Waste Water McGraw Hill III Edition2008.

CH6705 BIOCHEMICALENGINEERING L T P C
3 0 0 3

OBJECTIVE:

This course mainly discusses the role of enzymes and microbes in biotechnology sectors.

UNITI INTRODUCTION 6

Industrial biochemical processes with typical examples, comparing chemical and biochemical processes, development and scope of biochemical engineering as a discipline. Industrially important microbial strains; their classification; structure; cellular genetics.

UNITII KINETICS OFENZYMEACTION 9

Kinetics of enzyme catalyzed reaction: the enzyme substrate complex and enzymeaction,modulationandregulationofenzymeactivity,typesofinhibition. Immobilized enzyme technology: enzyme immobilization, Immobilized enzyme kinetics: effect of external mass transferresistance.

UNITIII KINETICS OFMICROBIALGROWTH 9

Kinetics of cellular growth in batch and continuous culture, models for cellular growth unstructured,structured and cybernetic models , medium formulation. Thermal death kinetics of cells and spores, stoichiometry of cell growth and product formation , Design and analysis of biological reactors.

UNITIV TRANSPORTPHENOMENA 9

Transport phenomena in bioprocess systems: Gas-liquid mass transfer in cellularsystems,determinationofoxygentransferrates,powerrequirementsfor sparged and agitated vessels, scaling of mass transfer

equipment, heat transfer.

UNITV DOWNSTREAMPROCESSING 12

Down stream processing: Strategies to recover and purify products; separation of insoluble products, filtration and centrifugation; cell disruption-mechanical and non-mechanical methods; separation of soluble products: liquid-liquid extractions, membrane separation (dialysis, ultra filtration and reverse osmosis),chromatographic separation-gel permeation chromatography, electrophoresis, final steps in purification – crystallization and drying.

TOTAL : 45 PERIODS

OUTCOME:

Uponcompletionofthiscourse,thestudentswoulddeveloptheabilitytodesign novelbioprocessesfortheirresearchinvariousareas.Theywillhavetheability to find solutions to the problems which occur when materials and processes interact with theenvironment.

TEXT BOOKS:

1. Biochemical engineering fundamentals by J.E.Bailey and D.F.Ollis, 2nd ed, 1986, McGrawHill.
2. Bioprocess Engineering by Michael L. Shuler and FikretKargi, 2nd edition, Pearsoneducation.

REFERENCES:

1. Biochemical engineering by James M.Lee –Prentice-Hall-1992.
2. Bioprocess engineering principles, Pauline M. Doran, AcademicPress.
3. Biochemical Engineering, H.W. Blanch and D.S. Clark, Marcel Dekker, 1997.

CH6018 PROCESSPLANTUTILITIES L T P C
3 0 0 3

OBJECTIVE:

To enable the students to understand the process plant utilities and optimization techniques to optimize various parameters in chemical industries.

UNITI IMPORTANTOFUTILITIES 9

Hard and Soft water, Requisites of Industrial Water and its uses. Methods of water Treatment such as Chemical Softening and Demineralization, Resins used for Water Softening and Reverse Osmosis. Effects of impure Boiler Feed Water.

UNITII STEAM AND STEAMGENERATION 9

Properties of Steam, problems based on Steam, Types of Steam Generator such as Solid Fuel Fired Boiler, Waste Gas Fired Boiler and Fluidized Bed Boiler. Scaling and Trouble Shooting. Steam Traps and Accessories.

UNITIII REFRIGERATION 9

Refrigeration Cycles, Methods of Refrigeration used in Industry and Different TypesofRefrigerantssuchasMonochlorodifluroMethane,Chlorofluro Carbons and Brins. Refrigerating Effects and LiquefactionProcesses.

UNITIV COMPRESSEDAIR 9

Classification of Compressor, Reciprocating Compressor, Single Stage and Two Stage Compressor, Velocity Diagram for Centrifugal Compressor, Silp Factor, Impeller Blade Shape. Properties of Air –Water Vapors and use of Humidity Chart. Equipments used for Humidification, Dehumidification and Cooling Towers.

UNITV FUEL ANDWASTEDISPOSAL 9

Types of Fuel used in Chemical Process Industries for Power Generation such as Natural Gas, Liquid Petroleum Fuels, Coal and Coke. Internal Combustion Engine, Petrol and Diesel Engine. Waste Disposal.

TOTAL : 45 PERIODS

OUTCOME:

At the end of this course, the students will understand the importance ofhealth, safety and the environment in process industries. Steam, power, water, air are extensively used in process industries and their efficient operation isimperative for economic and safe operation is essentialfor the survival of industries

TEXTBOOKS:

1. Eckenfelder,W.W,Jr.“IndustrialWaterPollutionControl”McGraw-Hill:New York,1966.
2. P. L. Ballaney, “Thermal Engineering”, Khanna Publisher New Delhi,1986.
3. Perry R. H. Green D. W. “Perry’s chemical Engineer’s Handbook”, McGraw Hill, New York,2007.

REFERENCES:

1. P. N. Ananthanarayan, “Basic Refrigeration & Air conditioning”, Tata McGraw Hill, New Delhi, 2007.

CIVIL

2019-20

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
B.E. CIVIL ENGINEERING
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM
I TO VIII SEMESTERS CURRICULA & SYLLABI

SEMESTER I

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics – I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	31	19	0	12	25

SEMESTER II

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics – II	BS	4	4	0	0	4
3.	PH8201	Physics For Civil Engineering	BS	3	3	0	0	3
4.	BE8251	Basic Electrical and Electronics Engineering	ES	3	3	0	0	3
5.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
6.	GE8292	Engineering Mechanics	ES	5	3	2	0	4
PRACTICALS								
7.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8.	CE8211	Computer Aided Building Drawing	PC	4	0	0	4	2
			TOTAL	30	20	2	8	25

SEMESTER III

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
2.	CE8301	Strength of Materials I	PC	3	3	0	0	3
3.	CE8302	Fluid Mechanics	PC	3	3	0	0	3
4.	CE8351	Surveying	PC	3	3	0	0	3
5.	CE8391	Construction Materials	PC	3	3	0	0	3
6.	CE8392	Engineering Geology	ES	3	3	0	0	3
PRACTICALS								
7.	CE8311	Construction Materials Laboratory	PC	4	0	0	4	2
8.	CE8361	Surveying Laboratory	PC	4	0	0	4	2
9.	HS8381	Interpersonal Skills / Listening and Speaking	EEC	2	0	0	2	1
			TOTAL	29	19	0	10	24

SEMESTER IV

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8491	Numerical Methods	BS	4	4	0	0	4
2.	CE8401	Construction Techniques and Practices	PC	3	3	0	0	3
3.	CE8402	Strength of Materials II	PC	3	3	0	0	3
4.	CE8403	Applied Hydraulic Engineering	PC	3	3	0	0	3
5.	CE8404	Concrete Technology	PC	3	3	0	0	3
6.	CE8491	Soil Mechanics	PC	3	3	0	0	3
PRACTICALS								
7.	CE8481	Strength of Materials Laboratory	PC	4	0	0	4	2
8.	CE8461	Hydraulic Engineering Laboratory	PC	4	0	0	4	2
9.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
			TOTAL	29	19	0	10	24

SEMESTER V

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	CE8501	Design of Reinforced Cement Concrete Elements	PC	5	3	2	0	4
2.	CE8502	Structural Analysis I	PC	3	3	0	0	3
3.	EN8491	Water Supply Engineering	PC	3	3	0	0	3
4.	CE8591	Foundation Engineering	PC	3	3	0	0	3
5.		Professional Elective I	PE	3	3	0	0	3
6.		Open Elective I*	OE	3	3	0	0	3
PRACTICALS								
7.	CE8511	Soil Mechanics Laboratory	PC	4	0	0	4	2
8.	CE8512	Water and Waste Water Analysis Laboratory	PC	4	0	0	4	2
9.	CE8513	Survey Camp (2 weeks –During IV Semester)	EEC	0	0	0	0	2
			TOTAL	28	18	2	8	25

SEMESTER VI

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	CE8601	Design of Steel Structural Elements	PC	5	3	2	0	4
2.	CE8602	Structural Analysis II	PC	3	3	0	0	3
3.	CE8603	Irrigation Engineering	PC	3	3	0	0	3
4.	CE8604	Highway Engineering	PC	3	3	0	0	3
5.	EN8592	Wastewater Engineering	PC	3	3	0	0	3
6.		Professional Elective II	PE	3	3	0	0	3
PRACTICALS								
7.	CE8611	Highway Engineering Laboratory	PC	4	0	0	4	2
8.	CE8612	Irrigation and Environmental Engineering Drawing	PC	4	0	0	4	2
9.	HS8581	Professional Communication	EEC	2	0	0	2	1
			TOTAL	30	18	2	10	24

SEMESTER VII

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	CE6701	Structural Dynamics and Earthquake Engineering	3	0	0	3
2.	CE6702	Prestressed Concrete Structures	3	0	0	3
3.	CE6703	Water Resources and Irrigation Engineering	3	0	0	3
4.	CE6704	Estimation and Quantity Surveying	3	0	0	3
5.		Elective II	3	0	0	3
6.		Elective III	3	0	0	3
PRACTICAL						
7.	CE6711	Computer Aided Design and Drafting Laboratory	0	0	4	2
8.	CE6712	Design Project	0	0	4	2
		TOTAL	18	0	8	22

SEMESTER VIII

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MG6851	Principles of Management	3	0	0	3
2.		Elective IV	3	0	0	3
3.		Elective V	3	0	0	3
PRACTICAL						
4.	CE6811	Project Work	0	0	12	6
		TOTAL	9	0	12	15

TOTAL NO OF CREDITS: 187

LIST OF ELECTIVES

ELECTIVE I

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	CE6001	Hydrology	3	0	0	3
2.	CE6002	Concrete Technology	3	0	0	3
3.	CE6003	Remote Sensing Techniques and GIS	3	0	0	3
4.	CE6004	Architecture	3	0	0	3
5.	GE6075	Professional Ethics in Engineering	3	0	0	3
6.	CE6005	Construction Planning and Scheduling	3	0	0	3

ELECTIVE II

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
7.	CE6006	Traffic Engineering and Management	3	0	0	3
8.	CE6007	Housing Planning and Management	3	0	0	3
9.	CE6008	Groundwater Engineering	3	0	0	3
10.	CE6009	Water Resources Systems Analysis	3	0	0	3
11.	CE6010	Pavement Engineering	3	0	0	3

ANNA UNIVERSITY :: CHENNAI - 600025.
OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of April / May Examination,2020 [R-2017].

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 02** **DATE OF PUBLICATION :15-08-2020**

Branch : 103-B.E. Civil Engineering

	Subject Code - >	BE8251	CE8211	GE8261	GE8291	GE8292	HS8251	MA8251	PH8201
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312819103001	DINESH KUMAR V	A+	O	O	A+	A	A+	A+	A+
312819103002	ISAIVANAN A	B	O	O	B	B	B	B	B
312819103003	KANALRAJ R	B	O	O	B	B	B	B	B
312819103004	SANJAY K	B+	O	O	A+	B	B+	A+	B
312819103007	SUSIL KUMAR R	B	O	O	A+	A	A+	A+	A

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 04** **DATE OF PUBLICATION :15-08-2020**

Branch : 103-B.E. Civil Engineering

	Subject Code - >	CE8401	CE8402	CE8403	CE8404	CE8461	CE8481	CE8491	HS8461	MA8491
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312818103001	ADHISESHAN G	B+	B+	A	B	A+	A+	B	A+	A
312818103002	ANBUSELVAN A	B	B	B+	B	A+	A+	B	A+	B+
312818103003	GOVINDARAJAN R	A+	A+	A+	A+	O	O	A+	O	A+
312818103004	JAYA SOORYA K	B	B	B+	B+	A+	A+	B	A+	A
312818103005	JINO BRIGHT J	A+	A+	A+	A+	O	O	A	O	A+
312818103006	KANNAN P	A	A	A	B+	O	O	A	O	A+
312818103007	KATHIRVEL M	B	B	B	B	A+	A+	B	A+	B+
312818103008	MADHAN M	A+	A+	A+	B+	O	O	A+	O	A+
312818103009	MUNIYAPPAN K	B	A+	A+	B	A+	A+	B	A+	A
312818103010	NATARAJAN E	B	B	B+	B	A	A	B+	A	B+
312818103011	NAVEENRAJ P	B+	B	A	B	A+	A+	B+	A+	A
312818103012	SENTHILKUMAR M	A+	A+	A+	A+	O	O	A+	O	A+
312818103013	TAMILSELVAN M	A	A+	A	B+	O	O	A	O	A
312818103014	VIGNESH M	B	A+	A	B	O	O	B	O	A
312818103015	VINOTH KUMAR V	B	B	B	B	A+	A+	B	A+	B+
312818103016	YOGESWARAN S	A+	A+	A+	A	O	O	A	O	A+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 06** **DATE OF PUBLICATION :15-08-2020**

Branch : 103-B.E. Civil Engineering

	Subject Code - >	CE8005	CE8601	CE8602	CE8603	CE8604	CE8611	CE8612	EN8592	HS8581
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817103001	ANUSUYA J	O	O	O	A+	O	O	O	O	O
312817103002	APPUNATESAN D	A	B+	A	B+	B+	O	O	B+	O
312817103004	DHARANIYA K	O	O	O	O	O	O	O	O	O
312817103005	HARISH S	B	B	B	B	B	A+	O	B	O
312817103006	KAAVIYACHELVAN RK	B	B	B+	B+	B+	O	O	B	O
312817103007	KAMBAN S	A+	A+	A+	A+	A+	O	O	A+	O
312817103008	KEERTHANA DS	O	A+	A+	A+	A+	O	O	A+	O
312817103009	KEERTHANA P	O	A+	A+	A+	A+	O	O	A+	O
312817103010	MADHUMITHA I	O	O	O	O	O	O	O	O	O
312817103011	MANIGANDAN D	O	O	O	O	O	O	O	O	O
312817103012	MAYA KRISHNAN M	O	O	O	A+	O	O	O	O	O
312817103013	NAVEEN T	B	B	B	B	B	O	O	B	O
312817103015	PRAVEEN M	O	A+	A+	A+	A+	O	O	A	O
312817103016	PRAVEEN KUMAR V	A+	A	A+	A+	A	O	O	A+	O
312817103017	RAJAVEL R	A+	A	A	A+	A+	O	O	A+	O
312817103018	RAMYA D	O	O	O	O	O	O	O	O	O
312817103020	SARAVANAN S	O	O	O	O	O	O	O	O	O
312817103021	SARGUNAM R	O	O	O	O	O	O	O	O	O
312817103022	SRINATH K	B	B	B	B	B+	A+	O	B	O
312817103023	SUMUNTHA REME TP	B	A	A	A+	A+	O	O	A	O
312817103025	VIJAYAN M	O	A+	A+	A+	A+	O	O	A+	O
312817103301	MAHESHWARAN N	B	B+	A	A	B	O	O	B+	O

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 07** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 103-B.E. Civil Engineering

	Subject Code - >	CE6007	CE6012	CE6701	CE6702	CE6703	CE6704	CE6711	CE6712	EN6501
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312813103006	CHINNAIYAN S				UA		UA			
312813103017	MANIKANDAVENKATPRAB U A				UA	U				
312813103018	MANOJ PRABHAKAR V	UA		UA						
312813103044	TAMIL THENDRAL K				U					
312814103031	PASUPATHY E				UA		UA			
312814103042	RANGISH N				U					
312814103304	MUKESH KANNA P					U				
312814103501	ARVIND RAJ N		UA	UA	UA	UA				
312815103009	BALAKUMAR R				E					
312815103011	BHUVANENDRAN S				U					
312815103020	KALAIVANI M				E					
312815103023	LAKSHMI NARAYANAN K									
312815103026	MARIAPPAN S				D		E			
312815103028	MUTHAMIL SELVAN I	UA		UA	UA	UA	UA			
312815103048	VIGNESHWARAN M						U			
312815103302	MOHAMMED SALEEM S			U	U					
312816103003	ARAVIND KUMAR B	D		E	E	E	E	B	A	C
312816103004	ARAVIND ROSHAN S	C		E	U	U	E	S	S	C
312816103005	ARUL AKASH A	C		E	U	C	U	S	A	D
312816103006	AVINASH S	C		D	C	E	E	S	A	E
312816103007	BHARATH KUMAR P S	C		B	B	A	C	S	S	C
312816103009	DAKSHIN B	D		D	E	E	D	B	A	D
312816103010	DINESH K	C		E	E	U	D	A	S	E
312816103011	DIVYA S	E		E	E	E	D	S	S	U
312816103012	HARIHARAN R	D		D	U	U	C	S	S	E
312816103013	MANIKANDAN K	C		C	U	E	B	S	S	C
312816103014	MANOJ KUMAR M	B		B	U	C	C	S	S	E
312816103015	MARIKANNAN R	D		U	U	E	E	A	S	E
312816103017	PRASANTH M	E		U	E	C	C	S	S	U
312816103018	RAJISH D	E		U	E	E	E	A	A	E
312816103021	RESUN RICHARD J	B		C	E	D	C	S	S	C
312816103022	ROOPENDRAN G	C		C	C	C	C	S	S	C
312816103023	SELVAKUMAR M	C		E	C	U	E	S	A	UA
312816103024	SHANAWAZ KHAN T	E		E	E	E	D	B	B	U

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312816103025	SOWMIYA R	B		D	D	C	C	S	S	D
312816103026	SUJITHKUMAR S	E		E	D	C	E	S	S	E
312816103027	SWATHI S	B		B	C	D	B	S	S	C
312816103028	THIRUKKUMARAN G	E		E	D	E	E	A	S	U
312816103029	VAIRAPRIYA M	A		B	C	C	B	S	S	C
312816103031	VENKATESAN C	A		A	B	C	B	S	S	A
312816103032	VENKATESH SAPPA	B		E	E	D	C	S	S	C
312816103035	VISVAKUMAR J	E		E	U	E	E	A	S	U
312816103301	KALPITA MONDAL	C		E	E	C	C	S	S	C
312816103302	PRINCE JOHNSON R	E		E	E	U	C	S	S	E

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 01** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 103-B.E. Civil Engineering

	Subject Code - >	BS8161	CY8151	GE8151	GE8152	GE8161	HS8151	MA8151	PH8151
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817103002	APPUNATESAN D							U	
312817103005	HARISH S		U		U			U	U
312817103013	NAVEEN T		B+					U	U
312817103022	SRINATH K		U		U			U	UA
312818103001	ADHISESHAN G		U	U				U	U
312818103002	ANBUSELVAN A		U	U				U	U
312818103004	JAYA SOORYA K			U				U	U
312818103006	KANNAN P		U					U	
312818103007	KATHIRVEL M		U	U				U	U
312818103009	MUNIYAPPAN K							B	
312818103010	NATARAJAN E		U	U			U	U	U
312818103011	NAVEENRAJ P		U	U				U	
312818103012	SENTHILKUMAR M							A	
312818103013	TAMILSELVAN M			U					
312818103014	VIGNESH M			U				U	
312818103015	VINOTH KUMAR V								
312819103001	DINESH KUMAR V	O	A+	U	B+	O	U	B	B
312819103002	ISAIVANAN A	B	U	U	U	A+	U	U	U
312819103003	KANALRAJ R	B+	B	U	U	A	U	U	U
312819103004	SANJAY K	B+	B+	U	U	A	U	U	U
312819103006	SIVABHARATHIDHASAN S	UA	UA	UA	UA	UA	UA	UA	UA
312819103007	SUSIL KUMAR R	B+	B+	U	B	A+	U	B	B+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 03** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 103-B.E. Civil Engineering

	Subject Code - >	CE8301	CE8302	CE8311	CE8351	CE8361	CE8391	CE8392	HS8381	MA8353
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817103002	APPUNATESAN D	B			UA					UA
312817103005	HARISH S	UA	UA		U		U	UA		UA
312817103006	KAAVIYACHELVAN RK	UA	UA		UA		UA	UA		UA
312817103007	KAMBAN S				U					
312817103008	KEERTHANA DS				B+					
312817103012	MAYA KRISHNAN M									U
312817103013	NAVEEN T	B	UA		UA		B	U		UA
312817103016	PRAVEEN KUMAR V				U					
312817103022	SRINATH K	UA	U		UA			UA		UA
312817103023	SUMUNTHA REME TP	UA	UA		UA					UA
312817103301	MAHESHWARAN N	UA			UA					UA
312818103001	ADHISESHAN G	U	U	A+	U	B+	U	U	O	U
312818103002	ANBUSELVAN A	U	U	A	U	B+	U	B	O	U
312818103003	GOVINDARAJAN R	B+	B	O	U	O	B	B+	O	B
312818103004	JAYA SOORYA K	U	U	A	U	A	U	B	O	U
312818103005	JINO BRIGHT J	B	U	O	U	A	B	B	O	U
312818103006	KANNAN P	U	U	O	U	A	A	B+	O	U
312818103007	KATHIRVEL M	U	U	B+	U	B+	U	U	O	U
312818103008	MADHAN M	B+	B	O	U	A+	B	B	O	U
312818103009	MUNIYAPPAN K	B	B	O	U	A	B	U	O	U
312818103010	NATARAJAN E	U	U	B+	U	B+	B	U	O	U
312818103011	NAVEENRAJ P	U	U	A	U	A	U	U	O	U
312818103012	SENTHILKUMAR M	B	B	O	B	O	A	B	O	B
312818103013	TAMILSELVAN M	B	B	O	B	A+	B	B	O	B
312818103014	VIGNESH M	U	B	A+	U	A	B	B+	O	B
312818103015	VINOTH KUMAR V									
312818103016	YOGESWARAN S	B	B+	O	B	O	B	A	O	U

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 05** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 103-B.E. Civil Engineering

	Subject Code - >	CE8501	CE8502	CE8511	CE8512	CE8513	CE8591	EN8491	GI8014	OAI551
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817103001	ANUSUYA J	B+	A+	O	A+	O	B+	B+	B+	A+
312817103002	APPUNATESAN D	U	B	O	A+	A+	B	U	B	A
312817103004	DHARANIYA K	B+	A	O	O	O	A	A	A	B+
312817103005	HARISH S	U	U	A	O	A+	B	U	U	B
312817103006	KAAVIYACHELVAN RK	B	B	A+	A+	A+	B	B	B	B
312817103007	KAMBAN S	B+	B+	O	A+	O	B	B+	B+	B+
312817103008	KEERTHANA DS	B+	B+	O	O	O	B+	B+	B+	B+
312817103009	KEERTHANA P	B+	A+	O	O	O	B+	B+	B	B
312817103010	MADHUMITHA I	B+	A+	O	O	O	B+	B	A	B+
312817103011	MANIGANDAN D	A	A	O	O	O	B+	A	A	A+
312817103012	MAYA KRISHNAN M	B	B+	O	O	O	A	B+	A	A+
312817103013	NAVEEN T	U	U	A+	B+	A+	U	U	U	U
312817103015	PRAVEEN M	U	A	O	O	O	B+	B	B	B
312817103016	PRAVEEN KUMAR V	U	B+	O	O	O	B	B	U	B+
312817103017	RAJAVEL R	B	B	O	O	O	B	B	U	B+
312817103018	RAMYA D	A	A+	O	O	O	B+	B	A+	A
312817103020	SARAVANAN S	A	A+	O	O	O	B+	A	A+	B+
312817103021	SARGUNAM R	A	A+	O	A+	O	A	A	A	A
312817103022	SRINATH K	U	U	UA	UA	A	U	U	U	B
312817103023	SUMUNTHA REME TP	U	B	O	A+	O	B+	B	B+	A
312817103025	VIJAYAN M	U	B+	O	O	O	B	B+	B+	B+
312817103301	MAHESHWARAN N	U	U	O	A+	A+	U	U	B	U

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

ANNA UNIVERSITY :: CHENNAI - 600025.
OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of April / May Examination,2020.

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 08** **DATE OF PUBLICATION :17-10-2020**

Branch : 103-B.E. Civil Engineering

	Subject Code - >	CE6016	CE6021	CE6811	MG6851
Reg. Number	**Stud. Name**	**Grade**	**Grade**	**Grade**	**Grade**
312813103006	CHINNAIYAN S	E			E
312813103017	MANIKANDAVENKATPRAB U A	E			E
312813103018	MANOJ PRABHAKAR V				E
312813103034	SARAVANAN V	E	D		
312813103048	VAGIR S	E	D		E
312813103050	VIGNESH KUMAR S	UA	UA		
312813103301	BALAMURUGAN S		UA		UA
312814103002	ALTHASSIM H				UA
312814103031	PASUPATHY E		E		E
312814103302	MANIKANDAN V	UA	UA		UA
312814103304	MUKESH KANNA P	E			
312815103006	ANEESH KUMAR G	E	E	UA	E
312815103028	MUTHAMIL SELVAN I		D		
312816103003	ARAVIND KUMAR B	D	D	S	D
312816103004	ARAVIND ROSHAN S	C	B	S	C
312816103005	ARUL AKASH A	C	C	S	C
312816103006	AVINASH S	C	B	S	C
312816103007	BHARATH KUMAR P S	B	A	S	B
312816103009	DAKSHIN B	C	C	S	C
312816103010	DINESH K	C	C	A	D
312816103011	DIVYA S	D	D	S	C
312816103012	HARIHARAN R	C	D	S	D
312816103013	MANIKANDAN K	B	B	S	B
312816103014	MANOJ KUMAR M	C	B	S	B
312816103015	MARIKANNAN R	C	C	S	C
312816103017	PRASANTH M	C	C	S	C
312816103018	RAJISH D	C	C	S	C
312816103021	RESUN RICHARD J	C	C	S	B
312816103022	ROOPENDRAN G	B	B	S	A
312816103023	SELVAKUMAR M	C	B	S	C
312816103024	SHANAWAZ KHAN T	D	C	S	D
312816103025	SOWMIYA R	C	C	S	C
312816103026	SUJITHKUMAR S	C	B	S	C
312816103027	SWATHI S	B	B	S	A

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312816103028	THIRUKKUMARAN G	D	D	S	D
312816103029	VAIRAPRIYA M	C	C	S	B
312816103031	VENKATESAN C	B	A	S	B
312816103032	VENKATESH SAPPA	B	B	S	B
312816103035	VISVAKUMAR J	C	C	S	D
312816103301	KALPITA MONDAL	B	B	S	B
312816103302	PRINCE JOHNSON R	D	D	S	D

W - Withdrawal I - Inadequate Attendance

WH1 - Withheld for Suspected Malpractice WH(others) - Withheld for want of Clarification,approval,etc.

CE8351 **SURVEYING**

L T P C 3 0 0

3

OBJECTIVES :

- To introduce the rudiments of plane surveying and geodetic principles to Civil Engineers.
- To learn the various methods of plane and geodetic surveying to solve the real world Civil Engineering problems.
- To introduce the concepts of Control Surveying
- To introduce the basics of Astronomical Surveying

UNIT I FUNDAMENTALS OF CONVENTIONAL SURVEYING AND LEVELLING 9

Classifications and basic principles of surveying - Equipment and accessories for ranging and chaining - Methods of ranging - Compass - Types of Compass - Basic Principles- Bearing – Types - True Bearing - Magnetic Bearing - Levelling- Principles and theory of Levelling – Datum- - Bench Marks – Temporary and Permanent Adjustments- Methods of Levelling- Booking – Reduction - Sources of errors in Levelling - Curvature and refraction.

UNIT II THEODOLITE AND TACHEOMETRIC SURVEYING 9

Horizontal and vertical angle measurements - Temporary and permanent adjustments - Heights and distances - Tacheometer - Stadia Constants - Analytic Lens -Tangential and Stadia Tacheometry surveying - Contour – Contouring – Characteristics of contours – Methods of contouring – Tacheometric contouring - Contour gradient – Uses of contour plan and map

UNIT III CONTROL SURVEYING AND ADJUSTMENT 9

Horizontal and vertical control – Methods – specifications – triangulation- baseline – satellite stations – reduction to centre- trigonometrical levelling – single and reciprocal observations – traversing – Gale's table. - Errors Sources- precautions and corrections – classification of errors –

true and most probable values - weighed observations – method of equal shifts – principle of least squares - normal equation – correlates- level nets- adjustment of simple triangulation networks.

UNIT IV ADVANCED TOPICS IN SURVEYING 9

Hydrographic Surveying – Tides – MSL – Sounding methods – Three point problem – Strength of fix – astronomical Surveying – Field observations and determination of Azimuth by altitude and hour angle methods –.Astronomical terms and definitions - Motion of sun and stars - Celestial coordinate systems - different time systems - Nautical Almanac - Apparent altitude and corrections - Field observations and determination of time, longitude, latitude and azimuth by altitude and hour angle method

UNIT V MODERN SURVEYING 9

Total Station : Advantages - Fundamental quantities measured - Parts and accessories - working principle - On board calculations - Field procedure - Errors and Good practices in using Total Station GPS Surveying : Different segments - space, control and user segments - satellite configuration - signal structure - Orbit determination and representation - Anti Spoofing and Selective Availability - Task of control segment - Hand Held and Geodetic receivers - data processing - Traversing and triangulation.

TOTAL : 45 PERIODS

OUTCOMES :

At the end of the course the student will be able to understand

- The use of various surveying instruments and mapping
- Measuring Horizontal angle and vertical angle using different instruments
- Methods of Leveling and setting Levels with different instruments
- Concepts of astronomical surveying and methods to determine time, longitude, latitude and azimuth

- Concept and principle of modern surveying.

TEXTBOOKS :

1. Kanetkar.T.P and Kulkarni.S.V, Surveying and Levelling, Parts 1 & 2, Pune Vidyarthi Griha Prakashan, Pune, 2008
2. Punmia.B.C., Ashok K.Jain and Arun K Jain , Surveying Vol. I & II, Lakshmi Publications Pvt Ltd, New Delhi, 2005
3. James M. Anderson and Edward M. Mikhail, "Surveying, Theory and Practice", 7th Edition, McGraw Hill, 2001.
4. Bannister and S. Raymond, "Surveying", 7th Edition, Longman 2004.
5. Laurila, S.H. "Electronic Surveying in Practice", John Wiley and Sons Inc, 1993
6. Venkatramaiah, Text book of Surveying, University press, New Delhi, 2014

REFERENCES :

1. Alfred Leick, “GPS satellite surveying”, John Wiley & Sons Inc., 3rd Edition, 2004.
2. Guocheng Xu, “GPS Theory , Algorithms and Applications”, Springer – Berlin, 2003.
3. SatheeshGopi, rasathishkumar, N. madhu, “Advanced Surveying, Total Station GPS and Remote Sensing” Pearson education, 2007
4. Roy S.K., "Fundamentals of Surveying", 2nd Edition, Prentice Hall of India, 2004.
5. Arora K.R.,"Surveying Vol I & II", Standard Book house, 10th Edition 2008

CE8391 CONSTRUCTION MATERIALS L T P C
3 0 0 3

OBJECTIVE:

- To introduce students to various materials commonly used in civil engineering construction and their properties.

UNIT I STONES – BRICKS – CONCRETE BLOCKS 9

Stone as building material – Criteria for selection – Tests on stones – Deterioration and Preservation of stone work – Bricks – Classification – Manufacturing of clay bricks – Tests on bricks – Compressive Strength – Water Absorption – Efflorescence – Bricks for special use – Refractory bricks – Concrete blocks – Lightweight concrete blocks.

UNIT II LIME – CEMENT – AGGREGATES – MORTAR 9

Lime – Preparation of lime mortar – Cement – Ingredients – Manufacturing process – Types and Grades – Properties of cement and Cement mortar – Hydration – Compressive strength – Tensile strength – Fineness– Soundness and consistency – Setting time – fine aggregates – river sand – crushed stone sand – properties – coarse Aggregates – Crushing strength – Impact strength – Flakiness Index – Elongation Index – Abrasion Resistance – Grading

UNIT III CONCRETE 9

Concrete – Ingredients – Manufacturing Process – Batching plants –mixing – transporting – placing – compaction of concrete –curing and finishing – Ready mix Concrete – Mix specification.

UNIT IV TIMBER AND OTHER MATERIALS 9

Timber – Market forms – Industrial timber– Plywood – Veneer – Thermocol – Panels of laminates – Steel – Aluminum and Other Metallic Materials – Composition – Aluminium composite panel – Market forms – Mechanical treatment – Paints – Varnishes – Distempers – Bitumens.

UNIT V MODERN MATERIALS 9

Glass – Ceramics – Sealants for joints – Fibre glass reinforced plastic – Clay products – Refractories – Composite materials – Types – Applications of laminar composites – Fibre textiles– Geomembranes and Geotextiles for earth reinforcement.

TOTAL: 45 PERIODS

OUTCOMES:

On completion of this course the students will be able to

- Compare the properties of most common and advanced building materials.
- understand the typical and potential applications of lime, cement and aggregates
- know the production of concrete and also the method of placing and making of concrete elements.
- understand the applications of timbers and other materials
- Understand the importance of modern material for construction.

TEXT BOOKS:

1. Varghese.P.C, "Building Materials", PHI Learning Pvt. Ltd, New Delhi, 2015.
2. Rajput. R.K., "Engineering Materials", S. Chand and Company Ltd., 2008.
3. Gambhir.M.L., "Concrete Technology", 3rd Edition, Tata McGraw Hill Education, 2004
4. Duggal.S.K., "Building Materials", 4th Edition, New Age International, 2008.

REFERENCES:

1. Jagadish.K.S, "Alternative Building Materials Technology", New Age International, 2007.
2. Gambhir. M.L., & Neha Jamwal., "Building Materials, products, properties and systems", Tata McGraw Hill Educations Pvt. Ltd, New Delhi, 2012.
3. IS456 - 2000: Indian Standard specification for plain and reinforced concrete, 2011
4. IS4926 - 2003: Indian Standard specification for ready–mixed concrete, 2012
5. IS383 - 1970: Indian Standard specification for coarse and fine aggregate from natural Sources for concrete, 2011
6. IS1542-1992: Indian standard specification for sand for plaster, 2009
7. IS 10262-2009: Indian Standard Concrete Mix Proportioning –Guidelines, 2009

CE8401 CONSTRUCTION TECHNIQUES AND PRACTICES

L	T	P	C
3	0	0	3

OBJECTIVE:

- The main objective of this course is to make the student aware of the various construction techniques, practices and the equipment needed for different types of construction activities. At the end of this course the student shall have a reasonable knowledge about the various construction procedures for sub to super structure and also the equipment needed for construction of various types of structures from foundation to super structure.

UNIT I CONSTRUCTION TECHNIQUES 9

Structural systems - Load Bearing Structure - Framed Structure - Load transfer mechanism – floor system - Development of construction techniques - High rise Building Technology - Seismic effect - Environmental impact of materials – responsible sourcing - Eco Building (Green Building) - Material used - Construction methods - Natural Buildings - Passive buildings - Intelligent(Smart) buildings - Meaning - Building automation - Energy efficient buildings for various zones-Case studies of residential, office buildings and other buildings in each zones.

UNIT II CONSTRUCTION PRACTICES 9

Specifications, details and sequence of activities and construction co-ordination – Site Clearance – Marking – Earthwork - masonry – stone masonry – Bond in masonry - concrete hollow block masonry – flooring – damp proof courses – construction joints – movement and expansion joints – pre cast pavements – Building foundations – basements – temporary shed – centering and shuttering – slip forms – scaffoldings – de-shuttering forms – Fabrication and erection of steel trusses – frames – braced domes – laying brick — weather and water proof – roof finishes – acoustic and fire protection.

UNIT III SUB STRUCTURE CONSTRUCTION 9

Techniques of Box jacking – Pipe Jacking -under water construction of diaphragm walls and basement-Tunneling techniques – Piling techniques - well and caisson - sinking cofferdam - cable anchoring and grouting - driving diaphragm walls, sheet piles - shoring for deep cutting - well points -Dewatering and stand by Plant equipment for underground open excavation.

UNIT IV SUPER STRUCTURE CONSTRUCTION 9

Launching girders, bridge decks, off shore platforms – special forms for shells - techniques for heavy decks – in-situ pre-stressing in high rise structures, Material handling - erecting light weight components on tall structures - Support structure for heavy Equipment and conveyors - Erection of articulated structures, braced domes and space decks.

UNIT V CONSTRUCTION EQUIPMENT 9

Selection of equipment for earth work - earth moving operations - types of earthwork equipment - tractors, motor graders, scrapers, front end waders, earth movers – Equipment for foundation and pile driving. Equipment for compaction, batching, mixing and concreting - Equipment for material handling and erection of structures – types of cranes - Equipment for dredging, trenching, tunneling,

TOTAL: 45 PERIODS

OUTCOMES:

On successful completion of this course, students will be able to:

- know the different construction techniques and structural systems
- Understand various techniques and practices on masonry construction, flooring, and roofing.
- Plan the requirements for substructure construction.
- Know the methods and techniques involved in the construction of various types of super structures
- Select, maintain and operate hand and power tools and equipment used in the building construction sites.

TEXTBOOKS :

1. Peurifoy, R.L., Ledbetter, W.B. and Schexnayder, C., "Construction Planning, Equipment and Methods", 5th Edition, McGraw Hill, Singapore, 1995.
2. Arora S.P. and Bindra S.P., "Building Construction, Planning Techniques and Method of Construction", Dhanpat Rai and Sons, 1997.
3. Varghese, P.C. "Building construction", Prentice Hall of India Pvt. Ltd, New Delhi, 2007.

REFERENCES:

1. Jha J and Sinha S.K., "Construction and Foundation Engineering", Khanna Publishers, 1999.
2. Sharma S.C. “Construction Equipment and Management”, Khanna Publishers New Delhi, 2002.
3. Deodhar, S.V. “Construction Equipment and Job Planning”, Khanna Publishers, New Delhi, 2012.
4. Mahesh Varma, “Construction Equipment and its Planning and Application”, Metropolitan Book Company, New Delhi, 1983.

CE8404 CONCRETE TECHNOLOGY L T P C
3 0 0 3

OBJECTIVE:

- To impart knowledge to the students on the properties of materials for concrete by suitable tests, mix design for concrete and special concretes.

UNIT I CONSTITUENT MATERIALS 9

Cement - Different types - Chemical composition and Properties – Hydration of cement - Tests on cement - IS Specifications - Aggregates – Classification - Mechanical properties and tests as per BIS - Grading requirements – Water - Quality of water for use in concrete.

UNIT II CHEMICAL AND MINERAL ADMIXTURES 9

Accelerators – Retarders - Plasticizers - Super plasticizers - Water proofers - Mineral Admixtures like Fly Ash, Silica Fume, Ground Granulated Blast Furnace Slag and Metakaoline - Effects on concrete properties.

UNIT III PROPORTIONING OF CONCRETE MIX 9

Principles of Mix Proportioning - Properties of concrete related to Mix Design - Physical properties of materials required for Mix Design - Design Mix and Nominal Mix - BIS Method of Mix Design - Mix Design Examples

UNIT IV FRESH AND HARDENED PROPERTIES OF CONCRETE 9

Workability - Tests for workability of concrete - Segregation and Bleeding - Determination of strength Properties of Hardened concrete - Compressive strength – split tensile strength - Flexural strength - Stress-strain curve for concrete - Modulus of elasticity – durability of concrete – water absorption – permeability – corrosion test – acid resistance.

UNIT V SPECIAL CONCRETES 9

Light weight concretes - foam concrete- self compacting concrete – vacuum concrete - High strength concrete - Fibre reinforced concrete – Ferrocement - Ready mix concrete – SIFCON - Shotcrete – Polymer concrete - High performance concrete - Geopolymer Concrete

TOTAL: 45 PERIODS

OUTCOMES:

Students will be able to understand

- The various requirements of cement, aggregates and water for making concrete
- The effect of admixtures on properties of concrete
- The concept and procedure of mix design as per IS method
- The properties of concrete at fresh and hardened state
- The importance and application of special concretes.

TEXTBOOKS:

1. Gupta.B.L., Amit Gupta, "Concrete Technology", Jain Book Agency, 2010.
2. Shetty,M.S, "Concrete Technology", S.Chand and Company Ltd, New Delhi, 2003
3. Bhavikatti.S.S, " Concrete Technology", I.K.International Publishing House Pvt. Ltd., New Delhi, 2015
4. Santhakumar. A.R., "Concrete Technology", Oxford University Press India, 2006.

REFERENCES:

1. Neville, A.M; "Properties of Concrete", Pitman Publishing Limited, London, 1995
2. Gambhir, M.L; "Concrete Technology", 3rd Edition, Tata McGraw Hill Publishing Co Ltd, New Delhi, 2007
3. IS10262-2009 Recommended Guidelines for Concrete Mix Design, Bureau of Indian Standards, New Delhi, 1998.
4. Job Thomas, "Concrete Technology", Cengage Learning India Pvt. Ltd., Delhi, 2015
5. Kumar P Mehta., Paulo J M Monterio., "Concrete - Microstructure, Properties and Materials", McGraw Hill Education (India) Private Limited, New Delhi, 2016

CSE

2019-20

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
B.E. COMPUTER SCIENCE AND ENGINEERING
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM
I - VIII SEMESTERS CURRICULA AND SYLLABI

SEMESTER I

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	31	19	0	12	25

SEMESTER II

Sl.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8252	Physics for Information Science	BS	3	3	0	0	3
4.	BE8255	Basic Electrical, Electronics and Measurement Engineering	ES	3	3	0	0	3
5.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
6.	CS8251	Programming in C	PC	3	3	0	0	3
PRACTICALS								
7.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8.	CS8261	C Programming Laboratory	PC	4	0	0	4	2
			TOTAL	28	20	0	8	24

SEMESTER III

Sl.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8351	Discrete Mathematics	BS	4	4	0	0	4
2.	CS8351	Digital Principles and System Design	ES	4	4	0	0	4
3.	CS8391	Data Structures	PC	3	3	0	0	3
4.	CS8392	Object Oriented Programming	PC	3	3	0	0	3
5.	EC8395	Communication Engineering	ES	3	3	0	0	3
PRACTICALS								
6.	CS8381	Data Structures Laboratory	PC	4	0	0	4	2
7.	CS8383	Object Oriented Programming Laboratory	PC	4	0	0	4	2
8.	CS8382	Digital Systems Laboratory	ES	4	0	0	4	2
9.	HS8381	Interpersonal Skills/Listening &Speaking	EEC	2	0	0	2	1
			TOTAL	**31**	**17**	**0**	**14**	**24**

SEMESTER IV

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8402	Probability and Queueing Theory	BS	4	4	0	0	4
2.	CS8491	Computer Architecture	PC	3	3	0	0	3
3.	CS8492	Database Management Systems	PC	3	3	0	0	3
4.	CS8451	Design and Analysis of Algorithms	PC	3	3	0	0	3
5.	CS8493	Operating Systems	PC	3	3	0	0	3
6.	CS8494	Software Engineering	PC	3	3	0	0	3
PRACTICALS								
7.	CS8481	Database Management Systems Laboratory	PC	4	0	0	4	2
8.	CS8461	Operating Systems Laboratory	PC	4	0	0	4	2
9.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
			TOTAL	**29**	**19**	**0**	**10**	**24**

SEMESTER V

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8551	Algebra and Number Theory	BS	4	4	0	0	4
2.	CS8591	Computer Networks	PC	3	3	0	0	3
3.	EC8691	Microprocessors and Microcontrollers	PC	3	3	0	0	3
4.	CS8501	Theory of Computation	PC	3	3	0	0	3
5.	CS8592	Object Oriented Analysis and Design	PC	3	3	0	0	3
6.		Open Elective I	OE	3	3	0	0	3
PRACTICALS								
7.	EC8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
8.	CS8582	Object Oriented Analysis and Design Laboratory	PC	4	0	0	4	2
9.	CS8581	Networks Laboratory	PC	4	0	0	4	2
			TOTAL	31	19	0	12	25

SEMESTER VI

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	CS8651	Internet Programming	PC	3	3	0	0	3
2.	CS8691	Artificial Intelligence	PC	3	3	0	0	3
3.	CS8601	Mobile Computing	PC	3	3	0	0	3
4.	CS8602	Compiler Design	PC	5	3	0	2	4
5.	CS8603	Distributed Systems	PC	3	3	0	0	3
6.		Professional Elective I	PE	3	3	0	0	3
PRACTICALS								
7.	CS8661	Internet Programming Laboratory	PC	4	0	0	4	2
8.	CS8662	Mobile Application Development Laboratory	PC	4	0	0	4	2
9.	CS8611	Mini Project	EEC	2	0	0	2	1
10.	HS8581	Professional Communication	EEC	2	0	0	2	1
			TOTAL	32	18	0	14	25

SEMESTER VII

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MG8591	Principles of Management	HS	3	3	0	0	3
2.	CS8792	Cryptography and Network Security	PC	3	3	0	0	3
3.	CS8791	Cloud Computing	PC	3	3	0	0	3
4.		Open Elective II	OE	3	3	0	0	3
5.		Professional Elective II	PE	3	3	0	0	3
6.		Professional Elective III	PE	3	3	0	0	3
PRACTICALS								
7.	CS8711	Cloud Computing Laboratory	PC	4	0	0	4	2
8.	IT8761	Security Laboratory	PC	4	0	0	4	2
			TOTAL	26	18	0	8	22

SEMESTER VIII

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.		Professional Elective IV	PE	3	3	0	0	3
2.		Professional Elective V	PE	3	3	0	0	3
PRACTICALS								
3.	CS8811	Project Work	EEC	20	0	0	20	10
			TOTAL	26	6	0	20	16

TOTAL NO. OF CREDITS: 185

PROFESSIONAL ELECTIVES (PE)

SEMESTER VI
ELECTIVE - I

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8075	Data Warehousing and Data Mining	PE	3	3	0	0	3
2.	IT8076	Software Testing	PE	3	3	0	0	3
3.	IT8072	Embedded Systems	PE	3	3	0	0	3
4.	CS8072	Agile Methodologies	PE	3	3	0	0	3
5.	CS8077	Graph Theory and Applications-	PE	3	3	0	0	3
6.	IT8071	Digital Signal Processing	PE	3	3	0	0	3
7.	GE8075	Intellectual Property Rights	PE	3	3	0	0	3

SEMESTER VII
ELECTIVE - II

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8091	Big Data Analytics	PE	3	3	0	0	3
2.	CS8082	Machine Learning Techniques	PE	3	3	0	0	3
3.	CS8092	Computer Graphics and Multimedia	PE	3	3	0	0	3
4.	IT8075	Software Project Management	PE	3	3	0	0	3
5.	CS8081	Internet of Things	PE	3	3	0	0	3
6.	IT8074	Service Oriented Architecture	PE	3	3	0	0	3
7.	GE8077	Total Quality Management	PE	3	3	0	0	3

SEMESTER VII
ELECTIVE - III

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8083	Multi-core Architectures and Programming	PE	3	3	0	0	3
2.	CS8079	Human Computer Interaction	PE	3	3	0	0	3
3.	CS8073	C# and .Net Programming	PE	3	3	0	0	3
4.	CS8088	Wireless Adhoc and Sensor Networks	PE	3	3	0	0	3
5.	CS8071	Advanced Topics on Databases	PE	3	3	0	0	3
6.	GE8072	Foundation Skills in Integrated Product Development	PE	3	3	0	0	3
7.	GE8074	Human Rights	PE	3	3	0	0	3
8.	GE8071	Disaster Management	PE	3	3	0	0	3

SEMESTER VIII
ELECTIVE - IV

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	EC8093	Digital Image Processing	PE	3	3	0	0	3
2.	CS8085	Social Network Analysis	PE	3	3	0	0	3
3.	IT8073	Information Security	PE	3	3	0	0	3
4.	CS8087	Software Defined Networks	PE	3	3	0	0	3
5.	CS8074	Cyber Forensics	PE	3	3	0	0	3
6.	CS8086	Soft Computing	PE	3	3	0	0	3
7.	GE8076	Professional Ethics in Engineering	PE	3	3	0	0	3

SEMESTER VIII
ELECTIVE - V

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8080	Information Retrieval Techniques	PE	3	3	0	0	3
2.	CS8078	Green Computing	PE	3	3	0	0	3
3.	CS8076	GPU Architecture and Programming	PE	3	3	0	0	3
4.	CS8084	Natural Language Processing	PE	3	3	0	0	3
5.	CS8001	Parallel Algorithms	PE	3	3	0	0	3
6.	IT8077	Speech Processing	PE	3	3	0	0	3
7.	GE8073	Fundamentals of Nano Science	PE	3	3	0	0	3

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

SI. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8381	Interpersonal Skills/Listening & Speaking	EEC	2	0	0	2	1
2.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
3.	CS8611	Mini Project	EEC	2	0	0	2	1
4.	HS8581	Professional Communication	EEC	2	0	0	2	1
5.	CS8811	Project Work	EEC	20	0	0	20	10

SEMESTER V

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6566	Discrete Mathematics	3	1	0	4
2.	CS6501	Internet Programming	3	1	0	4
3.	CS6502	Object Oriented Analysis and Design	3	0	0	3
4.	CS6503	Theory of Computation	3	0	0	3
5.	CS6504	Computer Graphics	3	0	0	3
PRACTICAL						
6.	CS6511	Case Tools Laboratory	0	0	3	2
7.	CS6512	Internet Programming Laboratory	0	0	3	2
8.	CS6513	Computer Graphics Laboratory	0	0	3	2
		TOTAL	**15**	**2**	**9**	**23**

SEMESTER VI

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	CS6601	Distributed Systems	3	0	0	3
2.	IT6601	Mobile Computing	3	0	0	3
3.	CS6660	Compiler Design	3	0	0	3
4.	IT6502	Digital Signal Processing	3	1	0	4
5.	CS6659	Artificial Intelligence	3	0	0	3
6.		Elective I	3	0	0	3
PRACTICAL						
7.	CS6611	Mobile Application Development Laboratory	0	0	3	2
8.	CS6612	Compiler Laboratory	0	0	3	2
9.	GE6674	Communication and Soft Skills - Laboratory Based	0	0	4	2
		TOTAL	**18**	**1**	**10**	**25**

SEMESTER VII

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	CS6701	Cryptography and Network Security	3	0	0	3
2.	CS6702	Graph Theory and Applications	3	0	0	3
3.	CS6703	Grid and Cloud Computing	3	0	0	3
4.	CS6704	Resource Management Techniques	3	0	0	3
5.		Elective II	3	0	0	3
6.		Elective III	3	0	0	3
PRACTICAL						
7.	CS6711	Security Laboratory	0	0	3	2
8.	CS6712	Grid and Cloud Computing Laboratory	0	0	3	2
		TOTAL	**18**	**0**	**6**	**22**

SEMESTER VIII

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	CS6801	Multi – Core Architectures and Programming	3	0	0	3
2.		Elective IV	3	0	0	3
3.		Elective V	3	0	0	3
PRACTICAL						
4.	CS6811	Project Work	0	0	12	6
		TOTAL	**9**	**0**	**12**	**15**

TOTAL NO. OF CREDITS: 184

LIST OF ELECTIVES

SEMESTER VI – Elective I

S.NO.	CODE NO.	COURSE TITLE	L	T	P	C
1.	CS6001	C# and .Net programming	3	0	0	3
2.	GE6757	Total Quality Management	3	0	0	3
3.	IT6702	Data Warehousing and Data Mining	3	0	0	3
4.	CS6002	Network Analysis and Management	3	0	0	3
5.	IT6004	Software Testing	3	0	0	3
6.	GE6084	Human Rights	3	0	0	3

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 02** **DATE OF PUBLICATION :15-08-2020**

Branch : 104-B.E. Computer Science and Engineering

	Subject Code - >	BE8255	CS8251	CS8261	GE8261	GE8291	HS8251	MA8251	PH8252
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312819104001	AADHITYAN S	A	O	O	O	O	O	O	A
312819104002	AAKASH PRABHU P	B+	B+	O	O	A+	B+	A+	B+
312819104004	ABISHEK K	O	O	O	O	O	O	O	O
312819104005	ADHARSH S	B+	A+	O	O	A+	A+	B+	A+
312819104006	AKASH S	B+	A+	O	O	A+	A	B+	B
312819104007	ANAND S	B	B	O	O	A+	A+	B+	B
312819104008	ANGELO SIEON V	B	B+	O	O	A	A	A+	B
312819104009	ARAVIND R	A+	A+	O	O	A+	A+	A+	A+
312819104010	ARUNKUMAR S	B+	B+	O	O	A+	A+	A+	A+
312819104011	ARUN KUMAR M	B+	A+	O	O	A	A+	A	B
312819104013	ARUN VIGNESH S	B	A+	O	O	A	A+	B	B
312819104014	ASWIN P	B	A+	O	O	A+	A+	A+	B
312819104015	BALAGURU R	A+	A+	O	O	A+	A+	A+	A+
312819104016	BHAVITHA R	O	O	O	O	O	O	O	O
312819104017	BHUVANESHWARAN A	B+	B	O	O	A+	A+	B	B
312819104018	CATHERIN SELVA CHARJANA A	A+	O	O	O	O	O	O	O
312819104019	CHITHRAI SELVAN S	B+	A+	O	O	A+	A+	A	B+
312819104020	DEEPAK RAM R	B	B	O	O	A+	A	A+	A+
312819104021	DHANALAKSHMI G	A	O	O	O	O	O	O	O
312819104022	DHIWAKAR N R	B+	A+	O	O	A+	A+	A+	B+
312819104024	DINESH P	B+	A+	O	O	A+	A+	A+	B+
312819104025	DIVAKAR S	B+	B	O	O	A	B+	B+	B
312819104026	DIVYA K	O	O	O	O	O	O	O	O
312819104027	DURGA A	A	A	O	O	A+	A+	A+	A+
312819104028	EVANJELINE OSWALD E	O	O	O	O	O	O	O	O
312819104029	GIBSON S	B+	A+	O	O	A+	A+	B+	B+
312819104030	GOKUL S	B+	B	O	O	B	B+	B	B
312819104031	GOMATHY K	B	A+	O	O	A+	A+	A+	B
312819104032	GOWTHAM KANNAN R	B	B+	O	O	A+	A+	A+	B
312819104033	GRACY S	A	O	O	O	O	O	O	B+
312819104034	HARI HARAN E	B	B+	O	O	A+	B+	A+	B+
312819104035	HARI NAATH K	B	A	O	O	A+	A+	A+	B+
312819104036	HARISH B	B+	B+	O	O	A+	A	B+	B+
312819104037	JEROME J	B+	B	O	O	A+	A+	B	B

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312819104038	JOTHIKA A	B+	B+	O	O	A	B+	A+	B
312819104039	KANNIKHAN CHOUDRY D	B+	A	O	O	A+	A+	A	A+
312819104040	LALITH KISHORE V	B	A	O	O	A	A+	A+	B
312819104041	LOGESH R	B+	A	O	O	B+	A+	A+	B
312819104042	LOGESHWARAN S	B	A	O	O	B	A	B+	B
312819104043	LOHIT S T	O	O	O	O	O	O	O	O
312819104044	MADHUMITHA R	A+	A+	O	O	A+	A+	A+	A+
312819104045	MAGESH KUMAR P	B+	A+	O	O	B	A+	A+	B
312819104046	MANIGANDAN R	A+	A+	O	O	A+	A+	A+	A+
312819104047	MATHANKUMAR S	B+	A+	O	O	A+	A+	A+	B+
312819104048	MOHAMMED TAHA MEERAN R	B	B	O	O	B	B	B	B
312819104049	MOHAN M	B+	A	O	O	A+	A+	A+	A+
312819104050	MONISH V	A+	A+	O	O	O	O	O	O
312819104051	MRITHULA V	O	O	O	O	O	O	O	O
312819104052	MUKESH KANNA G	B	A+	O	O	A+	B+	A+	A
312819104053	NANDHINI DEVI N	O	O	O	O	O	O	O	O
312819104054	PARTHIBAN V	B+	B	O	O	B+	B	B	B
312819104055	PAVITHRA V	A+	A+	O	O	A+	A+	A+	A+
312819104059	RAJABALA R	B	B+	O	O	B	B+	B	B
312819104061	RAMYA A K	B	A	O	O	B	B+	A+	A
312819104062	ROHITH B	A	A+	O	O	A+	A+	A	B
312819104063	ROSY S	A+	A+	O	O	A	A+	A	B
312819104064	SAI RAM G	O	O	O	O	O	O	O	O
312819104065	SANJAY H	O	O	O	O	O	O	O	O
312819104066	SANJAY M	B	A	O	O	B	A+	B	B
312819104067	SARATH KUMAR D	A	A+	O	O	A+	A+	A+	B
312819104068	SARAVANAN K	A+	A+	O	O	A+	A+	A+	A+
312819104069	SATHISH G	A+	A+	O	O	A+	A+	A+	A+
312819104070	SHRIJAYANTH S	A+	A+	O	O	A+	A+	B+	B
312819104071	SIVA SANKARI L	B+	B+	O	O	B+	A+	B+	B
312819104072	SONIYA K	A+	A+	O	O	B	A+	A+	B
312819104073	SOWMIYA T	A+	A+	O	O	A+	A+	A+	A
312819104074	SRINISHANTHINI RB	A+	A+	O	O	A	A+	B+	B+
312819104075	SRI SAI KRISHNAA R C	A+	A+	O	O	A+	A+	A+	A+
312819104076	SUGANTHI SWARNA P	O	O	O	O	O	O	O	A+
312819104077	SURIYA PRIYA M	B+	A+	O	O	B	A+	A+	B
312819104078	THENGUZHALI J	B	A+	O	O	B	A	A+	B
312819104079	UMAMAHESHWARI K	O	A+	O	O	O	O	O	O
312819104080	VARDHA PARVEEN M	B	B	O	O	B	B	B	B

312819104081	VENKATESH KSB	A	A+	O	O	B	B+	B+	B+
312819104082	VISHNU ARAVIND R	O	A+	O	O	O	O	O	B+

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 04** **DATE OF PUBLICATION :15-08-2020**

Branch : 104-B.E. Computer Science and Engineering

	Subject Code - >	CS8451	CS8461	CS8481	CS8491	CS8492	CS8493	CS8494	HS8461	MA8402
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312818104001	ABDUL ALTHAF N	B	A+	A+	B+	B	B	B	O	B
312818104002	ABHISHEK SINGH TOMAR	A+	O	O	A+	A+	A	A+	O	A+
312818104003	ABINESH V	B	O	O	B	B	B	B	O	B
312818104004	ANBU S	B	O	O	A	A	B+	B	O	B
312818104005	ANBUMANI S	A+	O	O	A+	A+	A+	B+	O	A+
312818104006	ARAVINTH DHARMAR S	B	A+	O	B	A	B	B+	O	B
312818104007	ASWIN RIJO J G	A	O	O	A	A	A	A	O	B+
312818104008	AYESHA SIDDIQUA K M	O	O	O	O	O	O	O	O	O
312818104009	BABY SHALINI A	A	O	O	A+	B+	A	A	O	A
312818104010	BALAKRISHNAN P	A+	O	O	A+	A+	A+	A+	O	A
312818104011	BALAKUMAR S	O	O	O	O	O	O	O	O	O
312818104012	BALAMURUGAN K	A+	O	O	A+	A+	A	A+	O	B+
312818104013	BIRUNTHA J	B+	O	O	A+	A+	B+	A+	O	A
312818104014	CALEB KINGSLEY B	A	O	O	A+	A+	A	A+	O	B
312818104015	DAMODARAN D	B+	O	O	A	A	A	A	O	B+
312818104016	DEEPALINGAM M	A	O	O	B+	A	A	B+	O	B+
312818104017	DHANUSH KODI C	A+	O	O	A	O	A+	O	O	A
312818104019	ELAKIYA A	A	O	O	A+	A+	A+	A+	O	A+
312818104020	ELAVARASAN V	B	O	O	B	B+	B+	B+	A+	B
312818104022	GANESHWARI M	A	O	O	A+	A+	A	A	O	A
312818104024	GOWTHAM M	A	O	O	B+	A+	A	B+	O	B+
312818104025	HARIHARAN K	B	O	O	B	B	B	B	A+	B
312818104026	HARIHARAN S	A	O	O	B	A+	B+	B+	O	B+
312818104028	HARINISHREE V	A+	O	O	A	A+	A+	A+	O	B+
312818104029	JAGANKUMAR R	B+	O	O	B+	A+	A+	A+	O	B+
312818104031	JEFRE JUDE J	B+	O	O	B+	A+	A	A	O	B
312818104032	KARTHIK C	B	A+	A+	B	A	B	B	O	B
312818104033	KARTHIKEYAN K	B	O	O	A	A	A	A	O	B
312818104034	KAVINILAVAN N	B+	O	O	B	A	A	B+	O	B
312818104035	KONGARA TENIKAR	A+	A+	A+	A	A+	A	B	O	A
312818104036	KOWSALYA S	A	O	O	A+	A+	A+	A+	O	B+
312818104037	MADHAN RAJ K	O	O	O	O	O	O	O	O	O
312818104038	MADHUMITA R	O	O	O	O	O	O	O	O	O
312818104039	MAHINDRRA MAURIYAN T	A+	O	O	A+	O	A+	A	O	A+
312818104040	MUKILAN S	O	O	O	O	O	O	O	O	A

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312818104042	NARESH S	A+	O	O	A+	A+	A+	B	O	B+
312818104043	NAVEEN R	A	O	O	A	A	A	A	O	A
312818104044	NAVEEN RG	O	O	O	O	O	O	O	O	O
312818104045	NIDHIN R	B	O	O	B+	B+	B+	B	O	B
312818104046	NIVETHA G	A	O	O	A+	A	A+	A	O	A
312818104047	NIVETHA S	O	O	O	A+	O	O	O	O	O
312818104048	PARAMASIVAM M	B+	A+	A+	B+	A	B+	A	O	B
312818104049	PAVITHRA S	A+	O	O	O	A+	A+	A+	O	A
312818104050	PRAGATHISHWARAN S	A+	O	O	A+	A+	A+	A+	O	A+
312818104051	PREM KUMAR V	B	A+	A+	B	B	B	B	A+	B
312818104052	RAGHUL K	A	O	O	B+	A	B	B+	O	B+
312818104053	RAHMAN SHERIFF M A	A	O	O	A	B+	A	A	O	A+
312818104054	RAJIVGANDHI G	B+	A+	A+	B+	B	B+	B	A+	A
312818104055	RAMANATHAN S	A+	O	O	A	A+	A+	A+	O	A
312818104056	RANJITH KUMAR S	B+	A+	A+	B+	A	A	B+	O	B+
312818104057	RENI PIER CIRIN A	B	A+	A+	B	B	B	B	A+	B
312818104058	REVATHI R	A+	A+	O	A	A+	A	A	O	A
312818104059	SAMEERA FATHIMA G	B+	A+	O	A+	A	A	A+	O	B+
312818104060	SANKAR S	B+	O	O	A	A	B+	B+	O	A
312818104061	SANTHOSH A S	B+	A+	O	B+	B	B+	B	O	B
312818104062	SANTHOSH RAJ M	A	A+	O	B	A	B	B+	O	B+
312818104063	SARASWATHI K	O	O	O	O	O	O	A	O	O
312818104064	SARATH S	A	A+	O	B+	A	B	B+	O	B
312818104065	SASIDHARAN V	B+	A+	A+	B	B+	B	B+	O	B+
312818104066	SATHIYAPRIYA B	A	O	O	A	B+	A+	A	O	A+
312818104067	SHALINI B	A+	O	O	A+	A+	A+	A+	O	A+
312818104068	SHANMUGA SUNDHARAM E	A	O	O	B+	B+	A	B	O	B+
312818104069	SHARATH S	B+	A+	A+	B+	A	B+	B+	O	A
312818104070	SHARMILA A	A+	O	O	A+	A+	A+	A+	O	A+
312818104071	SHEIK ABDULLAH M	B+	A+	O	B+	B	A	B	O	A
312818104072	SHERYL CATHERINE S	A+	O	O	A+	A+	A+	A+	O	A+
312818104073	SIVAKUMAR R	B+	A+	A+	B	B	B	B+	A+	B+
312818104074	SIVA VIGNESH G	A+	O	O	A	A	A	B	O	B+
312818104076	SRIPRADA S	A+	O	O	A+	A+	A+	A+	O	B+
312818104077	SRIRAM M	B	A+	O	B	A	B	B	O	B
312818104078	STEPHY J	B+	A+	O	B+	A	B+	B	A+	B+
312818104079	SUBASH K	A+	O	O	A	A+	A+	A	O	A+
312818104080	SUBHIKSHA R	O	O	O	O	O	O	O	O	O
312818104081	SUDHARSAN P	A+	O	O	A	A+	A	A+	O	A

312818104082	SURIYA PRAKASH P	A+	A+	O	A	A	B+	A	O	A
312818104083	SURIYA PRAKASH R	A+	O	O	B+	A	B+	B	O	B+
312818104084	SWATHI P	A+	O	O	A	A+	B+	A+	O	B+
312818104085	THANUSH RAM M	A	O	O	B+	B	B+	B+	O	A
312818104086	THARANI K	O	O	O	O	O	O	A+	O	O
312818104087	THOSSI BALA V	O	O	O	A+	O	O	A+	O	A+
312818104088	VAISHALINI S	O	O	O	O	O	A+	A+	O	O
312818104089	VAISHNAVI L	O	O	O	O	O	A+	A+	O	O
312818104090	VIJAYALAKSHMI G	A	O	O	B+	A+	A	B+	O	A
312818104091	VINAY KUMAR V	B	A+	A+	B	B	B	B	A+	B
312818104092	YAMINI M C	A+	O	O	A+	A+	A+	A+	O	A+

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 06** **DATE OF PUBLICATION :15-08-2020**

Branch : 104-B.E. Computer Science and Engineering

	Subject Code - >	CS8075	CS8601	CS8602	CS8603	CS8611	CS8651	CS8661	CS8662	CS8691	HS8581	ON2026
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817104001	ABIRAMI A	A+	A+	A+	A	O	A+	O	O	A+	O	
312817104002	AJITH GUNA I	A	A+	A	A	O	B+	O	O	A+	O	
312817104003	ALEEMA SHAJNU S	O	O	O	O	O	A+	O	O	O	O	
312817104004	ANDREW SHELTON L	O	O	O	O	O	O	O	O	O	O	
312817104005	ARAVINDHAN R	A	A+	B+	B+	O	B+	O	O	A	O	
312817104007	BANSIE V IYENGAR	O	A+	A+	A	O	A+	O	O	A+	O	
312817104008	BAVANI E	O	A+	A+	A+	O	A+	O	O	A+	O	
312817104009	BHARATHI N	O	O	O	A+	O	A+	O	O	O	O	
312817104010	BHARATHI R	A+	A+	A	B+	O	A	O	O	B+	O	
312817104011	DEEPAK R	O	O	A+	A	O	A+	O	O	O	O	
312817104012	DEEPIKA M	O	O	O	O	O	O	O	O	O	O	
312817104013	DEVI C	O	O	O	O	O	O	O	O	O	O	
312817104014	DHIVYA BHARATHI A	O	A+	A+	A	O	A+	O	O	A+	O	
312817104015	DINESH S	O	A+	A+	B	O	A+	O	O	A	O	
312817104017	EAGALAIVAN R	O	A+	A+	A	O	A+	O	O	A+	O	
312817104018	GIRIDHARAN S	B	B	B	B	A+	B	A+	A+	B	A+	
312817104020	GOKUL KRISHNA T	O	A+	A	A	O	B+	O	O	A+	O	
312817104022	GOPI M	A	A+	A	B+	O	A	O	O	A	O	
312817104024	HAJARA FATHIMA S	O	O	O	O	O	O	O	O	O	O	
312817104025	HARIHARAN K	O	O	O	O	O	O	O	O	O	O	
312817104026	HARI PRIYA S	O	A+	A+	A	O	A+	O	O	A+	O	
312817104028	INDIRANI G	O	O	O	O	O	O	O	O	O	O	
312817104029	JACKMA VINCELET	O	A+	O	A	O	O	O	O	A	O	
312817104030	JAMUNA RANI M	O	O	O	O	O	O	O	O	O	O	
312817104031	JANANI R	O	A+	A+	A	O	A	O	O	A+	O	
312817104032	JEEVAN KUMAR R	B	B+	B+	B	A+	B	A+	A+	A	A+	
312817104033	KAMALESH HARI M U	A+	A+	A	A+	O	A+	O	O	A+	O	
312817104034	KAMALI D	O	O	O	A+	O	O	O	O	O	O	
312817104035	KANISHYA GAYATHRI D	A+	A+	A	A+	O	A	O	O	A	O	
312817104036	KARTHIK R	A	A+	B+	B+	O	B+	O	O	A	O	
312817104037	KOWSALYA R	O	A+	A+	A+	O	A+	O	O	A+	O	
312817104038	MANO S	B	B	B	B	A+	B	A+	A+	B	A+	
312817104040	MOHAMMED ABDUL SHUKUR M	O	A+	A	B+	O	A	O	O	A+	O	
312817104041	MRINAL MAHINDRAN	O	O	O	A	O	A+	O	O	O	O	

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312817104042	MUTHUKUMAR S	B	A+	B+	B	O	A	O	O	B+	O	
312817104043	MUTHULAKSHMI T	O	O	O	O	O	O	O	O	O	O	
312817104044	NAINA MUHAMMED K	B+	A+	B+	B	A+	B	O	A+	B+	A+	
312817104045	NANDHINI S	O	O	O	A+	O	O	O	O	O	O	
312817104046	NAVEEN KUMAR S	O	A+	A	B+	O	A	O	O	A+	O	
312817104047	NEVETHA M D	O	A+	A+	A+	O	A	O	O	A+	O	
312817104048	NIRANJIAN T K	B	B	B	B	A+	B	A+	A+	B	A+	
312817104049	NISHANTH KUMAR R	O	A+	A+	A+	O	A+	O	O	A+	O	
312817104050	NISHI VILMA A	O	A+	A+	A+	O	A	O	O	A+	O	
312817104051	NITHISH KUMAR N	B+	A	B+	B	O	B	O	O	A	O	
312817104052	NITHYASREE A	O	O	O	O	O	O	O	O	O	O	
312817104053	PARKAVI K	O	A+	A+	A+	O	A+	O	O	A+	O	
312817104054	PARVEENBANU A	O	O	O	O	O	O	O	O	O	O	
312817104055	PONMUGI M	A+	B+	A	A	O	A	O	O	A	O	
312817104056	POOVARASAN A	O	A+	A+	A+	O	A+	O	O	A+	O	
312817104057	POOVARASAN P	O	A+	A+	A+	O	A+	O	O	A+	O	
312817104058	PRASANNA M	O	A+	A+	A+	O	A+	O	O	A+	O	
312817104059	PRATHEEBHA RANI S	O	O	O	O	O	O	O	O	O	O	
312817104061	PRAVALIKA B	O	O	O	O	O	O	O	O	O	O	
312817104062	PRAVEEN KUMAR P	A+	A+	A+	A+	O	A+	O	O	A+	O	
312817104063	PRIYADHARSHINI B	O	A	A	A	A+	B	A+	A+	A	A+	
312817104065	RAJA JOHN NAVEEN R	O	A+	A+	A+	O	A+	O	O	A+	O	
312817104068	RAMACHANDRAN P	O	O	O	O	O	O	O	O	O	O	
312817104069	RAMAGAYATRI B	O	A+	A+	A+	A+	A	A+	A+	A+	A+	
312817104070	RASATHI K	O	O	O	O	O	O	O	O	O	O	
312817104071	RATHIKA E	O	O	O	O	O	O	O	O	O	O	
312817104073	SAMANTHA E	A+	A+	A+	A+	O	A+	O	O	O	O	
312817104074	SANDHIYA R	A+	A+	A+	A+	O	A+	O	O	A+	O	
312817104075	SANKARAN R	B+	A	B+	A+	O	A	O	O	A	O	
312817104076	SANTHANAKUMARI M	O	A+	A+	A+	O	A+	O	O	A+	O	
312817104077	SANTHOSH R	O	O	O	O	O	O	O	O	O	O	
312817104078	SATHISH KUMAR D	O	A+	B+	A+	O	A+	O	O	A+	O	
312817104079	SATHIYA NARAYANAN S	A+	A+	A	A+	O	B	O	O	A+	O	
312817104080	SENGENI K	O	A+	A+	A+	O	A+	O	O	A+	O	
312817104083	SHOBANA S	O	A+	A+	A+	O	A+	O	O	A+	O	
312817104084	SHREEDEVI S	A+	O	O	A+	O	A+	O	O	O	O	
312817104087	SOUNDHARYA S	O	A+	A+	A+	O	A+	O	O	A+	O	
312817104088	SUMITHRA N	O	O	O	O	O	O	O	O	O	O	
312817104089	SUSEELA DEVI S	O	O	O	O	O	A+	O	O	O	O	
312817104090	THIRUMARAN P	O	A+	A+	A+	O	A+	O	O	A+	O	

312817104091	VALLARASU M	O	O	O	O	O	A+	O	O	O	O	
312817104092	VARSHA S B	O	O	O	O	O	O	O	O	O	O	
312817104094	VISHNU RAM M	A+	A+	A+	A	O	A	O	O	A	O	
312817104301	LAKSHMI SANKARI A	O	A+	A+	A	O	A+	O	O	A+	O	
312817104501	PRADEESH RAJ M	B	B	B	B	A+	B	A+	A+	B	A+	

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 07** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 104-B.E. Computer Science and Engineering

	Subject Code - >	CS6003	CS6701	CS6702	CS6703	CS6704	CS6711	CS6712	IT6005	IT6006
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312813104009	CHRISTY RUFUS I					UA				
312813104047	NAVEEN A			UA					UA	
312813104052	NISHANTH R								E	
312813104056	PRASANTH R				UA					
312813104084	VIDYA G	UA	UA			UA			UA	
312814104037	NAVEEN PRASANTH J B								E	
312814104065	VENKATESH R	UA	UA	UA	UA	UA			UA	
312814104503	VIGNESHWARA BALACHANDAR AR	U			UA	UA				
312815104017	GOKULAKRISHNAN V	UA		UA						UA
312815104020	GOWTHAM M									U
312815104031	KARTHIKEYAN E	U								E
312815104038	LOKESH S									E
312815104046	MEENAKSHI SUNDARAM M									U
312815104065	RAMPRABHAKARAN M	UA		UA						
312815104080	SIVAKARAN N									UA
312816104001	ABDUL KALAM ASATH K	B	C	A	D	C	A	A	C	
312816104002	ABINAYA R	UA	UA	UA	UA	UA	UA	UA	UA	
312816104003	ABINESH KUMAR N	U	U	UA	U	UA	U	C	U	
312816104005	AJAY KUMAR S	C	B	C	C	D	S	S	B	
312816104007	AJITH KUMAR V A	C	D	B	E	E	B	A	D	
312816104008	AKSHAYA R	C	C	C	C	U	A	S	C	
312816104009	AMRITHA VARSHINI K	B	C	C	C	U	A	S	E	
312816104010	ANTONY JOSEPH RAJ VISHAL S	E	C	B	C	D	A	S	U	
312816104011	ASWINI P	B	C	C	B	A	S	S	C	
312816104012	BALAJI S	C	C	C	B	B	A	S	C	
312816104013	BALAMURALI P	D	B	B	C	C	S	S	C	
312816104014	BANU PRIYA K	C	B	C	C	B	S	S	C	
312816104015	BHANU PRAKASH REDDY M	C	E	E	U	E	A	D	U	
312816104016	BHARATHI KANNAN R	E	C	U	E	E	S	S	U	
312816104017	BHAVANATHI K	E	B	C	E	U	A	A	E	
312816104018	CHANDRA SEKAR M	C	B	B	C	B	A	A	C	

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312816104019	CHEDHELLA SAI GOUTHAM	C	B	C	D	B	S	A	D	
312816104020	DAYA MEENAKSHI B	A	B	C	C	D	S	A	B	
312816104021	DEEPALAKSHMI K	A	A	A	A	A	S	S	A	
312816104022	DELIP K	E	C	D	U	E	A	S	D	
312816104023	DEVA ANUSHA J	C	B	B	C	C	A	A	C	
312816104024	DEVI E	C	B	C	C	D	A	A	C	
312816104025	DHAMODHARAN R	B	B	B	C	B	S	S	C	
312816104028	GOKUL PRIYA R	A	B	D	D	C	A	A	C	
312816104029	HAMEED BADHUSHA IRFAN F	B	A	D	C	A	S	S	B	
312816104030	HANNAH ELEZABATH M A	B	C	C	D	B	S	A	C	
312816104032	INAYATHULLAH SHERIFF M A	C	E	C	E	B	A	A	E	
312816104033	JEBAZ SHERWIN P	E	E	E	E	E	B	B	E	
312816104034	JOSEPH PATRICK SOLOMAN R	D	B	D	E	E	A	B	U	
312816104035	KAGITA HARITHA	B	B	B	B	C	A	S	B	
312816104036	KALAISELVI S	C	C	C	E	E	B	A	E	
312816104037	KANIMOZHI M	E	C	C	D	D	A	A	C	
312816104038	KARTHIK M	E	E	E	E	E	B	B	E	
312816104039	KARTHIK RAJA R	E	D	E	E	U	B	B	C	
312816104040	KAVINKUMAR B	U	C	E	U	U	S	A	E	
312816104041	KOKILA S	B	B	C	B	B	A	A	C	
312816104042	KRISHNA KUMAR S	D	C	B	D	E	S	S	C	
312816104043	KUMAR ADITYA	E	C	D	E	C	S	S	C	
312816104044	LAVANYA R	A	C	E	C	C	A	A	C	
312816104045	LINGARAJ N	E	E	E	U	E	S	S	E	
312816104047	MALAR S	B	C	A	B	A	S	S	B	
312816104048	MALATHI V	B	C	A	C	E	S	S	B	
312816104049	MAREEDU KUNDANIKA	C	D	D	C	D	S	A	C	
312816104050	MOHAN P	D	E	E	D	C	U	A	C	
312816104051	MOHANAPRIYA S	B	C	B	B	B	S	S	B	
312816104052	NAGA REKHA R	E	C	C	C	D	S	S	B	
312816104053	NANDHINI S	C	C	E	C	D	A	B	C	
312816104054	NARASINGAPERUMAL P	U	U	U	C	U	A	A	B	
312816104055	NITHYA RAK A S	D	C	D	C	U	A	S	C	
312816104056	OPPILIAPPAN T	C	A	B	C	U	S	S	C	
312816104057	PARVEEN R	B	C	D	B	C	S	S	A	
312816104058	PAVITHRA S V	A	B	B	B	A	S	S	B	

312816104059	PONMANDHIRAMUTHU I	B	B	C	D	B	S	S	B	
312816104060	POOJA C	B	C	C	C	U	A	B	C	
312816104062	PRATAPREDDY PERAM	E	E	C	E	U	A	C	C	
312816104063	PREETHA M	E	U	E	E	U	A	C	C	
312816104064	PRIYANKA S	B	C	C	C	D	A	S	B	
312816104065	PRIYAVADHANA S R	C	C	C	C	D	A	S	C	
312816104066	PROMOD VISHNU R	E	E	E	D	E	B	S	D	
312816104068	RAHUL S	D	D	E	E	E	A	B	E	
312816104069	RAMYA V	C	B	C	C	C	S	S	D	
312816104072	ROGHINI M	D	C	C	D	E	S	A	E	
312816104073	SABARINATH K S	E	E	U	U	U	A	B	U	
312816104074	SABARI NIVAS SUDHAN R	U	E	U	U	U	A	B	U	
312816104076	SATHISH KUMAR A	E	U	U	E	U	A	C	E	
312816104077	SATHYANARAYANAN M	C	E	E	D	D	S	A	C	
312816104078	SELVARAJ B	U	D	E	C	E	S	S	B	
312816104079	SHAFA PARVEEN S	B	E	B	D	A	S	A	B	
312816104080	SHANKARI A	E	B	C	C	U	A	A	C	
312816104081	SOORNA RAJ R	U	E	D	E	U	S	B	E	
312816104082	SREEDHARAN B R	E	D	E	E	E	A	A	E	
312816104083	SRIRAM A	C	C	C	D	C	S	A	B	
312816104084	SURENDAR R	E	C	E	E	E	S	A	E	
312816104085	SUVATHI A	C	B	C	C	C	S	S	B	
312816104086	SWARNA K	B	C	C	D	E	A	A	E	
312816104087	SYED MUNAZIR S	E	C	E	C	E	A	A	U	
312816104088	THARUN M	E	U	E	E	C	A	B	U	
312816104089	THIYANESWARI R	B	E	C	B	B	S	S	D	
312816104090	USHA NANDHINI K	D	C	C	B	B	S	S	C	
312816104091	VENKATESH PRASAD K	U	E	C	C	C	A	A	D	
312816104092	VIGNESH M	C	U	E	C	U	A	S	D	
312816104093	VIGNESH R	E	E	D	E	C	A	A	D	
312816104094	VISHNUVARTHAN S	C	C	B	D	C	S	S	C	
312816104301	NANDA KUMAR V	U	E	U	E	U	B	C	E	
312816104701	AKASH KUNA R	E	U	U	U	U	A	B	U	
312816104702	JAYAPRIYA J	E	E	E	C	D	S	A	E	

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 01** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 104-B.E. Computer Science and Engineering

	Subject Code - >	BS8161	CY8151	GE8151	GE8152	GE8161	HS8151	MA8151	PH8151
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817104010	BHARATHI R							B	
312817104018	GIRIDHARAN S							U	UA
312817104022	GOPI M							U	
312817104032	JEEVAN KUMAR R							U	
312817104038	MANO S			U				U	U
312817104046	NAVEEN KUMAR S							U	
312817104048	NIRANJIAN T K							U	
312817104063	PRIYADHARSHINI B							U	
312817104069	RAMAGAYATRI B							B	
312817104074	SANDHIYA R							B	
312817104075	SANKARAN R							B	
312817104501	PRADEESH RAJ M			UA					
312818104001	ABDUL ALTHAF N		UA	U	UA			UA	U
312818104003	ABINESH V		U	U				UA	U
312818104004	ANBU S							B	
312818104005	ANBUMANI S								B+
312818104006	ARAVINTH DHARMAR S			U				B	U
312818104013	BIRUNTHA J		B						B
312818104014	CALEB KINGSLEY B							U	
312818104019	ELAKIYA A							U	
312818104020	ELAVARASAN V							U	
312818104025	HARIHARAN K		U	U	U			U	U
312818104031	JEFRE JUDE J							U	U
312818104032	KARTHIK C		U	U				UA	U
312818104033	KARTHIKEYAN K							U	
312818104034	KAVINILAVAN N							U	U
312818104036	KOWSALYA S							U	
312818104043	NAVEEN R							U	
312818104045	NIDHIN R			U				U	U
312818104048	PARAMASIVAM M			U				U	U
312818104051	PREM KUMAR V			UA				U	U
312818104052	RAGHUL K							U	U
312818104054	RAJIVGANDHI G		B					U	U
312818104057	RENI PIER CIRIN A			U				U	U
312818104059	SAMEERA FATHIMA G				UA			UA	

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312818104061	SANTHOSH A S		B	U				U	U
312818104062	SANTHOSH RAJ M							U	
312818104064	SARATH S							U	U
312818104065	SASIDHARAN V			U				U	U
312818104071	SHEIK ABDULLAH M			U					
312818104076	SRIPRADA S							UA	
312818104077	SRIRAM M			U				U	B
312818104078	STEPHY J							U	U
312818104082	SURIYA PRAKASH P							U	
312818104084	SWATHI P								U
312818104085	THANUSH RAM M			U	B				U
312818104091	VINAY KUMAR V		U	U				U	U
312819104001	AADHITYAN S	O	B+	B	A+	O	B+	B+	B
312819104002	AAKASH PRABHU P	A+	B+	U	B	A	B	B	B
312819104003	ABHISHEK T	UA	UA	UA	UA	UA	UA	UA	UA
312819104004	ABISHEK K	O	A	B	A	O	A	O	A
312819104005	ADHARSH S	O	B+	B	A+	A+	B+	B+	B+
312819104006	AKASH S	A	B+	B	B+	A	B	A	B
312819104007	ANAND S	A+	B	U	A+	O	B	B	B
312819104008	ANGELO SIEON V	A	B+	U	A	O	B	U	U
312819104009	ARAVIND R	O	A+	U	B+	O	U	B	B+
312819104010	ARUNKUMAR S	O	B	U	B	A	B	B	B
312819104011	ARUN KUMAR M	A	B	U	B	A+	B	U	U
312819104013	ARUN VIGNESH S	A	B	U	B	B+	B	U	U
312819104014	ASWIN P	A	B	U	A	A	B	B	B
312819104015	BALAGURU R	O	B+	B	A	A+	B	U	U
312819104016	BHAVITHA R	O	O	B+	A	O	B+	A	B+
312819104017	BHUVANESHWARAN A	A	B	U	B	A	B	U	U
312819104018	CATHERIN SELVA CHARJANA A	O	B+	B+	A+	O	A	A	A
312819104019	CHITHRAI SELVAN S	A	B+	B+	B+	A+	B+	U	U
312819104020	DEEPAK RAM R	A+	B+	U	B+	A	B+	U	B
312819104021	DHANALAKSHMI G	O	O	B	B+	O	A	B+	A+
312819104022	DHIWAKAR N R	B+	B+	U	B+	A	A	U	UA
312819104024	DINESH P	A	A	U	B	A+	B+	B	B+
312819104025	DIVAKAR S	A	U	U	B+	A	B	U	U
312819104026	DIVYA K	O	A	B	O	O	B+	A+	A+
312819104027	DURGA A	O	A	B	B	A+	B	B+	B
312819104028	EVANJELINE OSWALD E	A+	A+	B+	A	O	B+	A+	B+
312819104029	GIBSON S	O	A	U	A+	O	B+	B	B

312819104030	GOKUL S	A	U	U	B	B+	U	U	U
312819104031	GOMATHY K	A+	B	U	B+	A	B	B	B
312819104032	GOWTHAM KANNAN R	B+	U	U	A	A+	U	B	U
312819104033	GRACY S	A+	A	B	A+	O	B	B+	B+
312819104034	HARI HARAN E	A	B	U	A	B+	U	U	U
312819104035	HARI NAATH K	A	B+	U	B+	A	U	U	U
312819104036	HARISH B	A	A	U	B+	A	B+	U	U
312819104037	JEROME J	A+	B+	U	B+	B+	B+	U	U
312819104038	JOTHIKA A	A+	B	B	B	A+	U	B	B
312819104039	KANNIKHAN CHOUDRY D	A	B+	B	A	A	B+	B	B
312819104040	LALITH KISHORE V	O	B	U	B	A	B	U	U
312819104041	LOGESH R	B+	B+	U	B+	A	B+	U	B
312819104042	LOGESHWARAN S	B+	B	U	U	A+	A	B	U
312819104043	LOHIT S T	O	A+	B	B+	O	B+	A+	A
312819104044	MADHUMITHA R	A+	A	B+	B	O	B+	B+	A
312819104045	MAGESH KUMAR P	A+	B	U	B+	A+	B+	B	B
312819104046	MANIGANDAN R	A+	B+	U	A	A+	B	U	B+
312819104047	MATHANKUMAR S	B+	B+	U	B	B+	B+	U	B+
312819104048	MOHAMMED TAHA MEERAN R	A	U	U	U	B+	U	U	U
312819104049	MOHAN M	A+	A	U	A	A	U	B+	B
312819104050	MONISH V	O	O	B+	B+	O	B	A+	A+
312819104051	MRITHULA V	O	A+	B+	A+	O	B+	O	A+
312819104052	MUKESH KANNA G	B+	B	U	B+	A+	U	B	B
312819104053	NANDHINI DEVI N	O	A+	B+	A	O	A	A+	A
312819104054	PARTHIBAN V	B+	B	U	U	A+	U	U	U
312819104055	PAVITHRA V	A+	B+	U	A+	O	B	B	B
312819104056	PRAVEENA M	B+	UA	UA	UA	A+	UA	UA	UA
312819104057	PRIYANJALI S	UA	UA	UA	UA	UA	UA	UA	UA
312819104058	RAGHUL J								
312819104059	RAJABALA R	B+	B	U	A	A	B	U	U
312819104060	RAJALAKSHMI M	UA	UA	UA	UA	UA	UA	UA	UA
312819104061	RAMYA A K	A+	B	U	B	A+	B	U	U
312819104062	ROHITH B	O	B	U	B+	A+	B	B	B
312819104063	ROSY S	A+	B	U	B+	A+	U	B	U
312819104064	SAI RAM G	O	A	B	A+	O	B	A	B
312819104065	SANJAY H	O	A	B+	A	O	B+	A	B+
312819104066	SANJAY M	B+	B	B	B+	O	U	U	U
312819104067	SARATH KUMAR D	A	B+	B	B	O	B	B+	U
312819104068	SARAVANAN K	O	A	B+	B	A+	B	B	B

312819104069	SATHISH G	A+	B+	B+	B+	A	U	B+	B+
312819104070	SHRIJAYANTH S	A+	B+	B	B	A+	B+	B	U
312819104071	SIVA SANKARI L	A+	B+	U	U	A	U	U	U
312819104072	SONIYA K	O	A	U	A	O	B	B+	B+
312819104073	SOWMIYA T	A	O	B+	B	O	B+	B+	B+
312819104074	SRINISHANTHINI RB	A+	B	U	B	A+	B	B	U
312819104075	SRI SAI KRISHNAA R C	O	B+	B	B	A+	B+	B	B
312819104076	SUGANTHI SWARNA P	O	A	B	B+	O	B+	B+	B+
312819104077	SURIYA PRIYA M	A	B	U	B+	O	U	U	B
312819104078	THENGUZHALI J	A+	B+	B	B	O	U	U	B
312819104079	UMAMAHESHWARI K	O	A	B+	B+	O	B+	B+	A
312819104080	VARDHA PARVEEN M	A+	B	U	A	O	B+	U	U
312819104081	VENKATESH KSB	A+	B	U	U	B+	B+	U	U
312819104082	VISHNU ARAVIND R	O	A	B	A	O	B	B+	B+
312819104083	HIMANSHU								

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 03** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 104-B.E. Computer Science and Engineering

	Subject Code - >	CS8351	CS8381	CS8382	CS8383	CS8391	CS8392	EC8395	HS8381	MA8351
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817104005	ARAVINDHAN R									B
312817104010	BHARATHI R									B
312817104018	GIRIDHARAN S	U					B	U		U
312817104022	GOPI M									B
312817104032	JEEVAN KUMAR R	B					U	U		B
312817104035	KANISHYA GAYATHRI D	B				U	U	B		B
312817104038	MANO S	U				UA	U	U		U
312817104042	MUTHUKUMAR S									B
312817104046	NAVEEN KUMAR S						B+			
312817104048	NIRANJIAN T K	B				U				
312817104051	NITHISH KUMAR N	U								B
312817104055	PONMUGI M	B+				B				
312817104063	PRIYADHARSHINI B	B					B			B
312817104069	RAMAGAYATRI B									B+
312817104074	SANDHIYA R									B
312817104075	SANKARAN R									B+
312817104079	SATHIYA NARAYANAN S									B
312817104083	SHOBANA S									B+
312817104301	LAKSHMI SANKARI A									B
312817104501	PRADEESH RAJ M						UA	UA		UA
312818104001	ABDUL ALTHAF N	U	B+	B+	A+	U	U	U	O	U
312818104002	ABHISHEK SINGH TOMAR	B+	A+	O	A+	B+	B+	B	O	B
312818104003	ABINESH V	B	B+	A	A	U	U	U	O	U
312818104004	ANBU S	B+	O	A+	A+	B	B	B	O	B+
312818104005	ANBUMANI S	A	O	O	O	B+	B	B	O	B+
312818104006	ARAVINTH DHARMAR S	U	A	A	A+	U	B	U	O	U
312818104007	ASWIN RIJO J G	B	A+	A+	O	A	A	B	O	B
312818104008	AYESHA SIDDIQUA K M	B+	O	O	O	A+	A	A+	O	B
312818104009	BABY SHALINI A	B	B+	A	O	B+	B	B+	O	B
312818104010	BALAKRISHNAN P	U	O	O	O	B+	A	B+	O	U
312818104011	BALAKUMAR S	B	O	O	O	A	A	B+	O	B
312818104012	BALAMURUGAN K	B	A+	A+	O	U	B+	B	O	B
312818104013	BIRUNTHA J	B+	A+	O	O	B+	A	B	O	B
312818104014	CALEB KINGSLEY B	B+	A+	A+	O	B+	B+	B+	O	B
312818104015	DAMODARAN D	U	A+	A+	O	B	B	B	O	B

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312818104016	DEEPALINGAM M	B	O	O	O	B	B	B+	O	B
312818104017	DHANUSH KODI C	A	O	O	O	B+	B	B	O	B
312818104019	ELAKIYA A	B	O	O	O	B+	B+	U	O	U
312818104020	ELAVARASAN V	B	B+	B+	A	B	U	U	O	U
312818104022	GANESHWARI M	B+	A	A+	O	B+	B	B+	O	B
312818104024	GOWTHAM M	B+	O	O	O	B	B	U	O	B
312818104025	HARIHARAN K	U	B+	U	A	U	U	U	O	U
312818104026	HARIHARAN S	U	A+	O	O	U	B	U	O	B
312818104028	HARINISHREE V	B	O	O	O	B	B	U	O	B
312818104029	JAGANKUMAR R	B	O	O	O	B	B+	B	O	B
312818104031	JEFRE JUDE J	B	O	A	A+	U	B+	B	O	U
312818104032	KARTHIK C	B	B+	B+	A+	U	B	U	O	U
312818104033	KARTHIKEYAN K	B	A+	A	A+	B	B	U	O	B
312818104034	KAVINILAVAN N	U	B+	A+	O	U	B	U	O	B
312818104035	KONGARA TENIKAR	B+	A+	A+	O	U	U	U	O	B
312818104036	KOWSALYA S	A	A	O	O	B	U	U	O	B
312818104037	MADHAN RAJ K	A	O	O	O	B+	B+	U	O	B+
312818104038	MADHUMITA R	A	O	O	O	B	A	B+	O	B+
312818104039	MAHINDRRA MAURIYAN T	B+	O	O	O	B	A	B	O	B
312818104040	MUKILAN S	A	O	O	O	B	B+	B	O	B+
312818104042	NARESH S	B+	O	B+	O	B	B	B	O	B
312818104043	NAVEEN R	B	A	A+	O	U	B	B	O	U
312818104044	NAVEEN RG	A	O	O	O	B+	B+	A	O	A
312818104045	NIDHIN R	B	B+	A	O	U	U	U	O	U
312818104046	NIVETHA G	A	A	A+	O	B	B+	B	O	B
312818104047	NIVETHA S	A+	A	A+	O	B+	A+	B+	O	B+
312818104048	PARAMASIVAM M	B+	B+	B+	O	B	B	B	O	U
312818104049	PAVITHRA S	U	O	A+	O	B+	A	B	O	B
312818104050	PRAGATHISHWARAN S	U	O	O	O	B+	B+	B	O	B
312818104051	PREM KUMAR V	U	B+	B	B	U	U	U	O	B
312818104052	RAGHUL K	U	A	B+	A	B	U	B	O	B
312818104053	RAHMAN SHERIFF M A	B	O	A+	A+	B	B	B	O	B
312818104054	RAJIVGANDHI G	U	B+	B	B	B	B	B	O	U
312818104055	RAMANATHAN S	B	A	A+	B+	B	B+	B	O	B+
312818104056	RANJITH KUMAR S	U	A+	B+	A+	U	B	B	O	B
312818104057	RENI PIER CIRIN A	U	A+	B	B+	U	U	U	O	U
312818104058	REVATHI R	U	A+	O	A+	U	U	B	O	U
312818104059	SAMEERA FATHIMA G	U	A	B+	O	B	B	B	O	U
312818104060	SANKAR S	B+	A	B	A+	B	B	B+	O	B
312818104061	SANTHOSH A S	B	A	B+	A	B	U	U	O	U

312818104062	SANTHOSH RAJ M	B+	O	A+	A	U	B	B	O	B
312818104063	SARASWATHI K	A+	O	A+	O	B	A	B+	O	A
312818104064	SARATH S	U	A	B+	A+	B	U	B	O	B
312818104065	SASIDHARAN V	U	A	B+	B	B	U	U	O	U
312818104066	SATHIYAPRIYA B	B	O	A+	A+	B	B+	B	O	B
312818104067	SHALINI B	B	O	A+	O	B+	B+	B+	O	B
312818104068	SHANMUGA SUNDHARAM E	U	O	B+	O	B	B	U	O	B
312818104069	SHARATH S	U	A+	A	A	U	U	U	O	U
312818104070	SHARMILA A	B	O	A+	O	B+	B+	B	O	B
312818104071	SHEIK ABDULLAH M	B	A+	B+	B+	B	U	B	O	B
312818104072	SHERYL CATHERINE S	B+	A+	A+	O	B	B	B	O	B
312818104073	SIVAKUMAR R	U	A+	B+	B+	B	U	U	O	U
312818104074	SIVA VIGNESH G	B	A+	B+	A	B	B	B	O	B
312818104076	SRIPRADA S	B	O	A+	A+	B+	A	B+	O	B
312818104077	SRIRAM M	U	B+	A	B	U	U	U	O	U
312818104078	STEPHY J	U	A	A	B	U	B	B	O	B
312818104079	SUBASH K	B	O	A+	A+	B	B+	B+	O	B
312818104080	SUBHIKSHA R	A	O	O	O	A	A+	B+	O	A
312818104081	SUDHARSAN P	B+	A+	A+	O	B	B+	B	O	B
312818104082	SURIYA PRAKASH P	B	A+	A	A	B	U	B	O	U
312818104083	SURIYA PRAKASH R	B	A+	A	A+	B+	B	U	O	B
312818104084	SWATHI P	B	A+	A+	B+	U	B	U	O	B
312818104085	THANUSH RAM M	U	A	B+	B+	U	U	U	O	U
312818104086	THARANI K	A	O	O	O	A	B+	B+	O	A
312818104087	THOSSI BALA V	B+	O	O	O	A	U	B+	O	B+
312818104088	VAISHALINI S	B+	O	A+	O	A	B+	A+	O	B
312818104089	VAISHNAVI L	B+	O	A+	O	B+	A	A	O	B+
312818104090	VIJAYALAKSHMI G	B+	A+	A	A	U	B	B	O	B
312818104091	VINAY KUMAR V	B	A	B	B	U	U	U	O	U
312818104092	YAMINI M C	B+	A+	A+	A+	U	B	B+	O	B+

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 05** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 104-B.E. Computer Science and Engineering

	Subject Code - >	CS8501	CS8581	CS8582	CS8591	CS8592	EC8681	EC8691	MA8551	OMD553
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817104001	ABIRAMI A	B	A	A+	B	B	A	U	B	B
312817104002	AJITH GUNA I	B+	A+	A+	B+	B	B+	U	B+	B+
312817104003	ALEEMA SHAJNU S	B	A+	O	B+	A	O	B	B+	A+
312817104004	ANDREW SHELTON L	B+	O	O	B+	A	O	U	B+	A
312817104005	ARAVINDHAN R	U	A+	O	U	B+	B+	U	U	B
312817104007	BANSIE V IYENGAR	B+	O	O	B+	B+	O	U	B	B
312817104008	BAVANI E	B	A+	O	U	B+	O	B	A	B+
312817104009	BHARATHI N	B	O	O	B+	A	A+	U	A	A+
312817104010	BHARATHI R	B	O	A+	B+	A	A+	U	B	A
312817104011	DEEPAK R	B+	O	O	A	A	O	U	B	B+
312817104012	DEEPIKA M	B+	O	O	A+	A	O	B	A	O
312817104013	DEVI C	B+	O	O	A	B+	O	B	B+	A
312817104014	DHIVYA BHARATHI A	B	A+	A+	A	B	A+	U	B+	B+
312817104015	DINESH S	B	A+	A+	B+	B	B+	B	B	B+
312817104017	EAGALAIVAN R	B	O	O	A	B+	B+	B	B+	B+
312817104018	GIRIDHARAN S	U	B+	A	U	U	A	U	U	U
312817104020	GOKUL KRISHNA T	U	O	A+	B+	U	B+	U	B	B+
312817104022	GOPI M	U	A+	O	B	B+	B+	U	B	B+
312817104024	HAJARA FATHIMA S	B+	O	O	B+	A+	O	A	A+	O
312817104025	HARIHARAN K	B	O	O	B	B+	O	B	A+	A+
312817104026	HARI PRIYA S	B	A+	O	B	A	O	U	B	B
312817104028	INDIRANI G	B+	O	O	B+	B+	O	B	A	B+
312817104029	JACKMA VINCELET	B	O	O	B	B+	O	B	B+	A+
312817104030	JAMUNA RANI M	A	O	O	B+	B+	O	B	B+	B+
312817104031	JANANI R	U	O	O	B+	B+	O	U	B	A+
312817104032	JEEVAN KUMAR R	U	B+	A+	B	B	A	U	U	U
312817104033	KAMALESH HARI M U	U	O	O	B+	B	A	U	B	B
312817104034	KAMALI D	B+	O	O	A	A	A+	B	A+	A
312817104035	KANISHYA GAYATHRI D	U	A	O	B+	B+	O	U	B	B+
312817104036	KARTHIK R	U	O	A+	B+	A	A	U	B	B+
312817104037	KOWSALYA R	B	O	O	A	B+	A+	B	B	A
312817104038	MANO S	U	B+	A	U	U	B+	U	U	B+
312817104040	MOHAMMED ABDUL SHUKUR M	B	O	O	U	A	A	B	B+	B+
312817104041	MRINAL MAHINDRAN	A	O	O	B	B+	A+	B	A	B+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312817104042	MUTHUKUMAR S	B	A	A	U	B+	A+	B	B+	B
312817104043	MUTHULAKSHMI T	A+	O	O	U	A	A+	U	O	A+
312817104044	NAINA MUHAMMED K	U	A	A+	U	B+	A	U	B	U
312817104045	NANDHINI S	B	O	O	B	A	O	B	B+	A
312817104046	NAVEEN KUMAR S	U	A+	A+	U	A	B+	B	B	B+
312817104047	NEVETHA M D	B+	A+	A+	B	A	A+	B	B+	B+
312817104048	NIRANJIAN T K	U	A	A	B	U	B+	U	U	B+
312817104049	NISHANTH KUMAR R	B	O	O	U	B+	O	B	B+	B+
312817104050	NISHI VILMA A	B	A+	A+	B+	B+	A	B	B	B+
312817104051	NITHISH KUMAR N	U	A+	A+	B	B+	A	B	B+	B+
312817104052	NITHYASREE A	B+	O	O	A	A+	O	B	A+	A
312817104053	PARKAVI K	B	O	O	B+	A	O	U	B+	B
312817104054	PARVEENBANU A	B+	O	O	B+	A+	O	B	A+	B+
312817104055	PONMUGI M	B	A+	A+	B+	A	B+	U	B+	B
312817104056	POOVARASAN A	B	O	O	B	A	A+	U	A	B
312817104057	POOVARASAN P	B+	O	O	B	B+	O	B	B+	B
312817104058	PRASANNA M	B+	A+	A+	B+	A	A+	B	B+	B
312817104059	PRATHEEBHA RANI S	B+	O	O	B+	A	O	B	B	B+
312817104061	PRAVALIKA B	A	O	O	B+	A+	O	B+	A+	B+
312817104062	PRAVEEN KUMAR P	B+	O	A+	B	A	A+	U	B	B
312817104063	PRIYADHARSHINI B	U	A	A	B	B+	B	U	U	B
312817104065	RAJA JOHN NAVEEN R	B+	A+	A+	B+	A	A+	B	B+	B
312817104068	RAMACHANDRAN P	A	O	O	B+	A+	A+	B	A+	B+
312817104069	RAMAGAYATRI B	U	A+	A	B	A	A+	U	U	B+
312817104070	RASATHI K	B+	O	O	B+	A+	O	B	A	A
312817104071	RATHIKA E	A+	O	O	A	B+	O	B+	B+	A
312817104073	SAMANTHA E	B+	O	O	A	A	A+	B	B	B+
312817104074	SANDHIYA R	U	A+	A	B	B+	B+	B	U	B
312817104075	SANKARAN R	B	A+	B+	B	B+	B+	U	B	U
312817104076	SANTHANAKUMARI M	B+	O	A+	B+	A	A	B	B	B
312817104077	SANTHOSH R	B+	O	O	A	A	O	B+	B+	B+
312817104078	SATHISH KUMAR D	B	A+	A+	B+	A	A	U	B	U
312817104079	SATHIYA NARAYANAN S	B	A+	A+	B+	A	A+	U	B	B+
312817104080	SENGENI K	B+	O	O	B	A	A+	B+	B+	B
312817104083	SHOBANA S	B	A+	A+	B	B+	O	B	U	B+
312817104084	SHREEDEVI S	B+	O	O	B	B+	O	B	B+	B+
312817104087	SOUNDHARYA S	B+	O	A+	B+	B+	O	U	A	B+
312817104088	SUMITHRA N	A+	O	O	B+	A	O	B+	O	B+
312817104089	SUSEELA DEVI S	B+	O	A+	A	B+	A+	B	A	B+
312817104090	THIRUMARAN P	B	O	O	B	B+	O	B	B+	B+

312817104091	VALLARASU M	B	O	A+	B+	B+	O	B+	A	A
312817104092	VARSHA S B	A	O	A+	B+	A	O	B	O	A
312817104094	VISHNU RAM M	B	O	A	B+	B+	A+	B	B+	B+
312817104301	LAKSHMI SANKARI A	B	A+	O	A+	A	A	B	B	B+
312817104501	PRADEESH RAJ M	U	A	B	U	U	B+	U	U	U
312817104502	RATAN RANA P S									

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 08** **DATE OF PUBLICATION :17-10-2020**

Branch : 104-B.E. Computer Science and Engineering

	Subject Code - >	CS6801	CS6811	GE6075	IT6011
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade
312813104056	PRASANTH R	E			
312813104065	RANJITH KUMAR P	E			
312813104069	SASIPUTHIRAN S			E	
312813104084	VIDYA G	E			E
312814104065	VENKATESH R	D			C
312814104502	AAKHASH K	UA		C	D
312815104017	GOKULAKRISHNAN V	E			
312815104023	JACOB MACHADO S	D			
312815104075	SATHEESH B	D		UA	D
312815104081	SIVARAMAKRISHNAN S	UA		UA	UA
312815104301	PRASANTH A	UA			
312816104001	ABDUL KALAM ASATH K	C	S	A	B
312816104003	ABINESH KUMAR N	E	S	C	B
312816104005	AJAY KUMAR S	B	S	A	A
312816104007	AJITH KUMAR V A	D	S	B	B
312816104008	AKSHAYA R	B	S	A	A
312816104009	AMRITHA VARSHINI K	C	S	A	A
312816104010	ANTONY JOSEPH RAJ VISHAL S	B	S	A	B
312816104011	ASWINI P	A	S	A	A
312816104012	BALAJI S	B	S	B	B
312816104013	BALAMURALI P	C	S	A	A
312816104014	BANU PRIYA K	A	S	A	A
312816104015	BHANU PRAKASH REDDY M	E	S	B	C
312816104016	BHARATHI KANNAN R	C	S	B	D
312816104017	BHAVANATHI K	C	A	B	C
312816104018	CHANDRA SEKAR M	B	S	A	A
312816104019	CHEDHELLA SAI GOUTHAM	B	S	A	A
312816104020	DAYA MEENAKSHI B	C	S	A	B
312816104021	DEEPALAKSHMI K	A	S	S	S
312816104022	DELIP K	C	S	B	B
312816104023	DEVA ANUSHA J	C	S	A	B
312816104024	DEVI E	C	S	B	C

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312816104025	DHAMODHARAN R	A	S	S	A
312816104028	GOKUL PRIYA R	B	S	A	A
312816104029	HAMEED BADHUSHA IRFAN F	B	S	A	A
312816104030	HANNAH ELEZABATH M A	B	S	A	A
312816104032	INAYATHULLAH SHERIFF M A	B	S	A	B
312816104033	JEBAZ SHERWIN P	D	S	C	C
312816104034	JOSEPH PATRICK SOLOMAN R	C	S	B	B
312816104035	KAGITA HARITHA	B	S	A	A
312816104036	KALAISELVI S	D	A	C	C
312816104037	KANIMOZHI M	C	S	B	C
312816104038	KARTHIK M	E	A	B	B
312816104039	KARTHIK RAJA R	D	S	B	C
312816104040	KAVINKUMAR B	C	S	A	B
312816104041	KOKILA S	B	S	A	B
312816104042	KRISHNA KUMAR S	B	S	A	B
312816104043	KUMAR ADITYA	C	S	B	B
312816104044	LAVANYA R	B	S	A	B
312816104045	LINGARAJ N	C	S	B	B
312816104047	MALAR S	A	S	A	A
312816104048	MALATHI V	A	S	A	A
312816104049	MAREEDU KUNDANIKA	B	S	B	B
312816104050	MOHAN P	E	A	B	B
312816104051	MOHANAPRIYA S	B	S	A	A
312816104052	NAGA REKHA R	B	S	A	A
312816104053	NANDHINI S	C	S	A	C
312816104054	NARASINGAPERUMAL P	D	S	B	C
312816104055	NITHYA RAK A S	C	S	A	C
312816104056	OPPILIAPPAN T	B	S	A	A
312816104057	PARVEEN R	C	S	A	A
312816104058	PAVITHRA S V	A	S	S	A
312816104059	PONMANDHIRAMUTHU I	B	S	A	A
312816104060	POOJA C	D	S	B	B
312816104062	PRATAPREDDY PERAM	D	S	B	B
312816104063	PREETHA M	D	A	D	E
312816104064	PRIYANKA S	C	S	B	C
312816104065	PRIYAVADHANA S R	C	S	A	B
312816104066	PROMOD VISHNU R	D	S	B	E

312816104068	RAHUL S	E	S	C	C
312816104069	RAMYA V	A	S	A	A
312816104072	ROGHINI M	B	A	B	B
312816104073	SABARINATH K S	E	S	C	E
312816104074	SABARI NIVAS SUDHAN R	E	S	B	B
312816104076	SATHISH KUMAR A	E	S	C	C
312816104077	SATHYANARAYANAN M	C	S	B	C
312816104078	SELVARAJ B	B	S	A	B
312816104079	SHAFA PARVEEN S	C	S	A	C
312816104080	SHANKARI A	C	S	B	B
312816104081	SOORNA RAJ R	C	S	B	C
312816104082	SREEDHARAN B R	E	S	C	D
312816104083	SRIRAM A	E	S	B	C
312816104084	SURENDAR R	D	S	B	C
312816104085	SUVATHI A	B	S	B	C
312816104086	SWARNA K	C	S	B	B
312816104087	SYED MUNAZIR S	D	S	C	E
312816104088	THARUN M	D	S	C	D
312816104089	THIYANESWARI R	B	S	A	B
312816104090	USHA NANDHINI K	B	A	A	B
312816104091	VENKATESH PRASAD K	D	S	B	B
312816104092	VIGNESH M	D	S	C	C
312816104093	VIGNESH R	C	A	C	C
312816104094	VISHNUVARTHAN S	B	S	A	A
312816104301	NANDA KUMAR V	E	A	C	E
312816104701	AKASH KUNA R	D	S	B	D
312816104702	JAYAPRIYA J	C	A	B	C

GE8151 PROBLEM SOLVING AND PYTHON PROGRAMMING L T P C
3 0 0 3

OBJECTIVES:

- To know the basics of algorithmic problem solving
- To read and write simple Python programs.
- To develop Python programs with conditionals and loops.
- To define Python functions and call them.
- To use Python data structures –- lists, tuples, dictionaries.
- To do input/output with files in Python.

UNIT I ALGORITHMIC PROBLEM SOLVING 9

Algorithms, building blocks of algorithms (statements, state, control flow, functions), notation (pseudo code, flow chart, programming language), algorithmic problem solving, simple strategies for developing algorithms (iteration, recursion). Illustrative problems: find minimum in a list, insert a card in a list of sorted cards, guess an integer number in a range, Towers of Hanoi.

UNIT II DATA, EXPRESSIONS, STATEMENTS 9

Python interpreter and interactive mode; values and types: int, float, boolean, string, and list; variables, expressions, statements, tuple assignment, precedence of operators, comments; modules and functions, function definition and use, flow of execution, parameters and arguments; Illustrative programs: exchange the values of two variables, circulate the values of n variables, distance between two points.

UNIT III CONTROL FLOW, FUNCTIONS 9

Conditionals: Boolean values and operators, conditional (if), alternative (if-else), chained conditional (if-elif-else); Iteration: state, while, for, break, continue, pass; Fruitful functions: return values, parameters, local and global scope, function composition, recursion; Strings: string slices, immutability, string functions and methods, string module; Lists as arrays. Illustrative programs: square root, gcd, exponentiation, sum an array of numbers, linear search, binary search.

UNIT IV LISTS, TUPLES, DICTIONARIES 9

Lists: list operations, list slices, list methods, list loop, mutability, aliasing, cloning lists, list parameters; Tuples: tuple assignment, tuple as return value; Dictionaries: operations and methods; advanced list processing - list comprehension; Illustrative programs: selection sort, insertion sort, mergesort, histogram.

UNIT V FILES, MODULES, PACKAGES 9

Files and exception: text files, reading and writing files, format operator; command line arguments, errors and exceptions, handling exceptions, modules, packages; Illustrative programs: word count, copy file.

TOTAL: 45 PERIODS

OUTCOMES:

Upon completion of the course, students will be able to

- Develop algorithmic solutions to simple computational problems
- Read, write, execute by hand simple Python programs.
- Structure simple Python programs for solving problems.
- Decompose a Python program into functions.
- Represent compound data using Python lists, tuples, dictionaries.
- Read and write data from/to files in Python Programs.

TEXT BOOKS:

1. Allen B. Downey, ``Think Python: How to Think Like a Computer Scientist", 2nd edition, Updated for Python 3, Shroff/O'Reilly Publishers, 2016 (http://greenteapress.com/wp/think-python/)
2. Guido van Rossum and Fred L. Drake Jr, -An Introduction to Python – Revised and updated for Python 3.2, Network Theory Ltd., 2011.

REFERENCES:

1. John V Guttag, -Introduction to Computation and Programming Using Python‘‘, Revised and expanded Edition, MIT Press , 2013
2. Robert Sedgewick, Kevin Wayne, Robert Dondero, -Introduction to Programming in Python: An Inter-disciplinary Approach, Pearson India Education Services Pvt. Ltd., 2016.
3. Timothy A. Budd, -Exploring Python‖, Mc-Graw Hill Education (India) Private Ltd.,, 2015.
4. Kenneth A. Lambert, -Fundamentals of Python: First Programs‖, CENGAGE Learning, 2012.
5. Charles Dierbach, -Introduction to Computer Science using Python: A Computational Problem-Solving Focus, Wiley India Edition, 2013.
6. Paul Gries, Jennifer Campbell and Jason Montojo, -Practical Programming: An Introduction to Computer Science using Python 3‖, Second edition, Pragmatic Programmers, LLC, 2013.

CS8651	INTERNET PROGRAMMING	L	T	P	C
		3	0	0	3

OBJECTIVES:

- To understand different Internet Technologies.
- To learn java-specific web services architecture

UNIT I WEBSITE BASICS, HTML 5, CSS 3, WEB 2.0 9

Web Essentials: Clients, Servers and Communication – The Internet – Basic Internet protocols – World wide web – HTTP Request Message – HTTP Response Message – Web Clients – Web Servers – HTML5 – Tables – Lists – Image – HTML5 control elements – Semantic elements – Drag and Drop – Audio – Video controls - CSS3 – Inline, embedded and external style sheets – Rule cascading – Inheritance – Backgrounds – Border Images – Colors – Shadows – Text – Transformations – Transitions – Animations.

UNIT II CLIENT SIDE PROGRAMMING 9

Java Script: An introduction to JavaScript–JavaScript DOM Model-Date and Objects,-Regular Expressions- Exception Handling-Validation-Built-in objects-Event Handling-DHTML with JavaScript- JSON introduction – Syntax – Function Files – Http Request – SQL.

UNIT III SERVER SIDE PROGRAMMING 9

Servlets: Java Servlet Architecture- Servlet Life Cycle- Form GET and POST actions-Session Handling- Understanding Cookies- Installing and Configuring Apache Tomcat Web Server- DATABASE CONNECTIVITY: JDBC perspectives, JDBC program example - JSP: Understanding Java Server Pages-JSP Standard Tag Library (JSTL)-Creating HTML forms by embedding JSP code.

UNIT V INTRODUCTION TO AJAX and WEB SERVICES 9

AJAX: Ajax Client Server Architecture-XML Http Request Object-Call Back Methods; Web Services: Introduction- Java web services Basics – Creating, Publishing, Testing and Describing a Web services (WSDL)-Consuming a web service, Database Driven web service from an application –SOAP.

TOTAL 45 PERIODS

OUTCOMES:

At the end of the course, the students should be able to:

- Construct a basic website using HTML and Cascading Style Sheets.
- Build dynamic web page with validation using Java Script objects and by applying different event handling mechanisms.
- Develop server side programs using Servlets and JSP.
- Construct simple web pages in PHP and to represent data in XML format.
- Use AJAX and web services to develop interactive web applications

TEXT BOOK:

1. Deitel and Deitel and Nieto, -Internet and World Wide Web - How to Program‖, Prentice Hall, 5th Edition, 2011.

REFERENCES:

1. Stephen Wynkoop and John Burke -Running a Perfect Website‖, QUE, 2nd Edition,1999.
2. Chris Bates, Web Programming – Building Intranet Applications, 3rd Edition, Wiley Publications, 2009.
3. Jeffrey C and Jackson, -Web Technologies A Computer Science Perspective‖, Pearson Education, 2011.
4. Gopalan N.P. and Akilandeswari J., -Web Technology‖, Prentice Hall of India, 2011.
5. UttamK.Roy, -Web Technologies‖, Oxford University Press, 2011.

CS8792	CRYPTOGRAPHY AND NETWORK SECURITY	L	T	P	C
		3	0	0	3

OBJECTIVES:

- To understand Cryptography Theories, Algorithms and Systems.
- To understand necessary Approaches and Techniques to build protection mechanisms in order to secure computer networks.

UNIT I INTRODUCTION 9

Security trends - Legal, Ethical and Professional Aspects of Security, Need for Security at Multiple levels, Security Policies - Model of network security – Security attacks, services and mechanisms – OSI security architecture – Classical encryption techniques: substitution techniques, transposition techniques, steganography- Foundations of modern cryptography: perfect security – information theory – product cryptosystem – cryptanalysis.

UNIT II SYMMETRIC KEY CRYPTOGRAPHY 9

MATHEMATICS OF SYMMETRIC KEY CRYPTOGRAPHY: Algebraic structures - Modular arithmetic-Euclid"s algorithm- Congruence and matrices - Groups, Rings, Fields- Finite fields- SYMMETRIC KEY CIPHERS**:** SDES – Block cipher Principles of DES – Strength of DES – Differential and linear cryptanalysis - Block cipher design principles – Block cipher mode of operation – Evaluation criteria for AES – Advanced Encryption Standard - RC4 – Key distribution.

UNIT III PUBLIC KEY CRYPTOGRAPHY 9

MATHEMATICS OF ASYMMETRIC KEY CRYPTOGRAPHY: Primes – Primality Testing – Factorization – Euler‘s totient function, Fermat‘s and Euler‘s Theorem - Chinese Remainder Theorem – Exponentiation and logarithm - ASYMMETRIC KEY CIPHERS: RSA cryptosystem – Key distribution – Key management – Diffie Hellman key exchange - ElGamal cryptosystem – Elliptic curve arithmetic-Elliptic curve cryptography.

UNIT IV MESSAGE AUTHENTICATION AND INTEGRITY 9

Authentication requirement – Authentication function – MAC – Hash function – Security of hash function and MAC – SHA –Digital signature and authentication protocols – DSS- Entity Authentication: Biometrics, Passwords, Challenge Response protocols- Authentication applications - Kerberos, X.509

UNIT V SECURITY PRACTICE AND SYSTEM SECURITY 9

Electronic Mail security – PGP, S/MIME – IP security – Web Security - SYSTEM SECURITY: Intruders – Malicious software – viruses – Firewalls.

TOTAL 45 PERIODS

OUTCOMES:

At the end of the course, the student should be able to:

- Understand the fundamentals of networks security, security architecture, threats and vulnerabilities
- Apply the different cryptographic operations of symmetric cryptographic algorithms
- Apply the different cryptographic operations of public key cryptography
- Apply the various Authentication schemes to simulate different applications.
- Understand various Security practices and System security standards

TEXT BOOK:

1. William Stallings, Cryptography and Network Security: Principles and Practice, PHI 3rd Edition, 2006.

REFERENCES:

1. C K Shyamala, N Harini and Dr. T R Padmanabhan: Cryptography and Network Security, Wiley India Pvt.Ltd
2. BehrouzA.Foruzan, Cryptography and Network Security, Tata McGraw Hill 2007.
3. Charlie Kaufman, Radia Perlman, and Mike Speciner, Network Security: PRIVATE Communication in a PUBLIC World, Prentice Hall, ISBN 0-13-046019-2

GE8074 HUMAN RIGHTS L T P C
3 0 0 3

OBJECTIVE :

- To sensitize the Engineering students to various aspects of Human Rights.

UNIT I 9

Human Rights – Meaning, origin and Development. Notion and classification of Rights – Natural, Moral and Legal Rights. Civil and Political Rights, Economic, Social and Cultural Rights; collective / Solidarity Rights.

UNIT II 9

Evolution of the concept of Human Rights Magana carta – Geneva convention of 1864. Universal Declaration of Human Rights, 1948. Theories of Human Rights.

UNIT III 9

Theories and perspectives of UN Laws – UN Agencies to monitor and compliance.

UNIT IV 9

Human Rights in India – Constitutional Provisions / Guarantees.

UNIT V 9

Human Rights of Disadvantaged People – Women, Children, Displaced persons and Disabled persons, including Aged and HIV Infected People. Implementation of Human Rights – National and State Human Rights Commission – Judiciary – Role of NGO‘s, Media, Educational Institutions, Social Movements.

TOTAL: 45 PERIODS

OUTCOME:

- Engineering students will acquire the basic knowledge of human rights.

REFERENCES:

1. Kapoor S.K., -Human Rights under International law and Indian Laws‖, Central Law Agency, Allahabad, 2014.
2. Chandra U., -Human Rights‖, Allahabad Law Agency, Allahabad, 2014.
3. Upendra Baxi, The Future of Human Rights, Oxford University Press, New Delhi.

GE8076 PROFESSIONAL ETHICS IN ENGINEERING LT P C
3 0 0 3

OBJECTIVES:

- To enable the students to create an awareness on Engineering Ethics and Human Values, to instill Moral and Social Values and Loyalty and to appreciate the rights of others.

UNIT I HUMAN VALUES 10

Morals, values and Ethics – Integrity – Work ethic – Service learning – Civic virtue – Respect for others – Living peacefully – Caring – Sharing – Honesty – Courage – Valuing time – Cooperation – Commitment – Empathy – Self confidence – Character – Spirituality – Introduction to Yoga and meditation for professional excellence and stress management.

UNIT II ENGINEERING ETHICS 9

Senses of ‗Engineering Ethics' – Variety of moral issues – Types of inquiry – Moral dilemmas – Moral Autonomy – Kohlberg's theory – Gilligan's theory – Consensus and Controversy – Models of professional roles - Theories about right action – Self-interest – Customs and Religion – Uses of Ethical Theories.

UNIT III ENGINEERING AS SOCIAL EXPERIMENTATION 9

Engineering as Experimentation – Engineers as responsible Experimenters – Codes of Ethics – A Balanced Outlook on Law.

UNIT IV SAFETY, RESPONSIBILITIES AND RIGHTS 9

Safety and Risk – Assessment of Safety and Risk – Risk Benefit Analysis and Reducing Risk - Respect for Authority – Collective Bargaining – Confidentiality – Conflicts of Interest – Occupational Crime – Professional Rights – Employee Rights – Intellectual Property Rights (IPR) – Discrimination.

UNIT V GLOBAL ISSUES 8

Multinational Corporations – Environmental Ethics – Computer Ethics – Weapons Development – Engineers as Managers – Consulting Engineers – Engineers as Expert Witnesses and Advisors – Moral Leadership –Code of Conduct – Corporate Social Responsibility.

TOTAL: 45 PERIODS

OUTCOMES:

- Upon completion of the course, the student should be able to apply ethics in society, discuss the ethical issues related to engineering and realize the responsibilities and rights in the society.

TEXT BOOKS:

1. Mike W. Martin and Roland Schinzinger, -Ethics in Engineering‖, Tata McGraw Hill, New Delhi, 2003.
2. Govindarajan M, Natarajan S, Senthil Kumar V. S, -Engineering Ethics‖, Prentice Hall of India,

New Delhi, 2004.

REFERENCES:

1. Charles B. Fleddermann, -Engineering Ethics‖, Pearson Prentice Hall, New Jersey, 2004.
2. Charles E. Harris, Michael S. Pritchard and Michael J. Rabins, -Engineering Ethics – Concepts and Cases‖, Cengage Learning, 2009.
3. John R Boatright, -Ethics and the Conduct of Business‖, Pearson Education, New Delhi, 2003
4. Edmund G Seebauer and Robert L Barry, -Fundamentals of Ethics for Scientists and Engineers‖, Oxford University Press, Oxford, 2001.
5. Laura P. Hartman and Joe Desjardins, -Business Ethics: Decision Making for Personal Integrity and Social Responsibility‖ Mc Graw Hill education, India Pvt. Ltd.,New Delhi, 2013.
6. World Community Service Centre, ‗Value Education‘, Vethathiri publications, Erode, 2011.

Web sources:

1. www.onlineethics.org
2. www.nspe.org
3. www.globalethics.org
4. www.ethics.org

CS8601	MOBILE COMPUTING	L	T	P	C
		3	0	0	3

OBJECTIVES:

- To understand the basic concepts of mobile computing.
- To learn the basics of mobile telecommunication system .
- To be familiar with the network layer protocols and Ad-Hoc networks.
- To know the basis of transport and application layer protocols.
- To gain knowledge about different mobile platforms and application development.

UNIT I INTRODUCTION 9

Introduction to Mobile Computing – Applications of Mobile Computing- Generations of Mobile Communication Technologies- Multiplexing – Spread spectrum -MAC Protocols – SDMA- TDMA- FDMA- CDMA

UNIT II MOBILE TELECOMMUNICATION SYSTEM 9

Introduction to Cellular Systems - GSM – Services & Architecture – Protocols – Connection Establishment – Frequency Allocation – Routing – Mobility Management – Security – GPRS-UMTS – Architecture – Handover - Security

UNIT III MOBILE NETWORK LAYER 9

Mobile IP – DHCP – AdHoc– Proactive protocol-DSDV, Reactive Routing Protocols – DSR, AODV , Hybrid routing –ZRP, Multicast Routing- ODMRP, Vehicular Ad Hoc networks (VANET) –MANET Vs VANET – Security.

UNIT IV MOBILE TRANSPORT AND APPLICATION LAYER 9

Mobile TCP– WAP – Architecture – WDP – WTLS – WTP –WSP – WAE – WTA Architecture – WML

UNIT V MOBILE PLATFORMS AND APPLICATIONS 9

Mobile Device Operating Systems – Special Constraints & Requirements – Commercial Mobile Operating Systems – Software Development Kit: iOS, Android, BlackBerry, Windows Phone – MCommerce – Structure – Pros & Cons – Mobile Payment System – Security Issues

TOTAL 45 PERIODS

OUTCOMES:

At the end of the course, the students should be able to:

- Explain the basics of mobile telecommunication systems
- Illustrate the generations of telecommunication systems in wireless networks
- Determine the functionality of MAC, network layer and Identify a routing protocol for a given Ad hoc network
- Explain the functionality of Transport and Application layers
- Develop a mobile application using android/blackberry/ios/Windows SDK

TEXT BOOKS:

1. Jochen Schiller, -Mobile Communications‖, PHI, Second Edition, 2003.
2. Prasant Kumar Pattnaik, Rajib Mall, -Fundamentals of Mobile Computing‖, PHI Learning Pvt.Ltd, New Delhi – 2012

REFERENCES

1. Dharma Prakash Agarval, Qing and An Zeng, "Introduction to Wireless and Mobile systems",Thomson Asia Pvt Ltd, 2005.
2. Uwe Hansmann, Lothar Merk, Martin S. Nicklons and Thomas Stober, -Principles of Mobile Computing‖, Springer, 2003.
3. William.C.Y.Lee,-Mobile Cellular Telecommunications-Analog and Digital Systems‖, Second Edition,TataMcGraw Hill Edition ,2006.
4. C.K.Toh, -AdHoc Mobile Wireless Networks‖, First Edition, Pearson Education, 2002.
5. Android Developers : http://developer.android.com/index.html
6. Apple Developer : https://developer.apple.com/
7. Windows Phone DevCenter : http://developer.windowsphone.com
8. BlackBerry Developer : http://developer.blackberry.com

CS8691	ARTIFICIAL INTELLIGENCE	L	T	P	C
		3	0	0	3

OBJECTIVES:

- To understand the various characteristics of Intelligent agents
- To learn the different search strategies in AI
- To learn to represent knowledge in solving AI problems
- To understand the different ways of designing software agents
- To know about the various applications of AI.

UNIT I INTRODUCTION 9

Introduction–Definition - Future of Artificial Intelligence – Characteristics of Intelligent Agents– Typical Intelligent Agents – Problem Solving Approach to Typical AI problems.

UNIT II PROBLEM SOLVING METHODS 9

Problem solving Methods - Search Strategies- Uninformed - Informed - Heuristics - Local Search Algorithms and Optimization Problems - Searching with Partial Observations - Constraint Satisfaction Problems – Constraint Propagation - Backtracking Search - Game Playing - Optimal Decisions in Games – Alpha - Beta Pruning - Stochastic Games

UNIT III KNOWLEDGE REPRESENTATION 9

First Order Predicate Logic – Prolog Programming – Unification – Forward Chaining-Backward Chaining – Resolution – Knowledge Representation - Ontological Engineering-Categories and Objects – Events - Mental Events and Mental Objects - Reasoning Systems for Categories - Reasoning with Default Information

UNIT IV SOFTWARE AGENTS 9

Architecture for Intelligent Agents – Agent communication – Negotiation and Bargaining – Argumentation among Agents – Trust and Reputation in Multi-agent systems.

UNIT V APPLICATIONS 9

AI applications – Language Models – Information Retrieval- Information Extraction – Natural Language Processing - Machine Translation – Speech Recognition – Robot – Hardware – Perception – Planning – Moving

TOTAL :45 PERIODS

OUTCOMES:

Upon completion of the course, the students will be able to:

- Use appropriate search algorithms for any AI problem
- Represent a problem using first order and predicate logic
- Provide the apt agent strategy to solve a given problem
- Design software agents to solve a problem
- Design applications for NLP that use Artificial Intelligence.

TEXT BOOKS:

1 S. Russell and P. Norvig, "Artificial Intelligence: A Modern Approach‖, Prentice Hall, Third Edition, 2009.

2 I. Bratko, -Prolog: Programming for Artificial Intelligence‖, Fourth edition, Addison-Wesley Educational Publishers Inc., 2011.

REFERENCES:

1. M. Tim Jones, -Artificial Intelligence: A Systems Approach(Computer Science)‖, Jones and Bartlett Publishers, Inc.; First Edition, 2008
2. Nils J. Nilsson, -The Quest for Artificial Intelligence‖, Cambridge University Press, 2009.
3. William F. Clocksin and Christopher S. Mellish,‖ Programming in Prolog: Using the ISO Standard‖, Fifth Edition, Springer, 2003.
4. Gerhard Weiss, -Multi Agent Systems‖, Second Edition, MIT Press, 2013.
5. David L. Poole and Alan K. Mackworth, -Artificial Intelligence: Foundations of Computational Agents‖, Cambridge University Press, 2010.

CS8492 DATABASE MANAGEMENT SYSTEMS L T P C
3 0 0 3

OBJECTIVES

- To learn the fundamentals of data models and to represent a database system using ER diagrams.
- To study SQL and relational database design.
- To understand the internal storage structures using different file and indexing techniques which will help in physical DB design.
- To understand the fundamental concepts of transaction processing- concurrency control techniques and recovery procedures.
- To have an introductory knowledge about the Storage and Query processing

Techniques

UNIT I RELATIONAL DATABASES 10

Purpose of Database System – Views of data – Data Models – Database System Architecture – Introduction to relational databases – Relational Model – Keys – Relational Algebra – SQL fundamentals – Advanced SQL features – Embedded SQL– Dynamic SQL

UNIT II DATABASE DESIGN 8

Entity-Relationship model – E-R Diagrams – Enhanced-ER Model – ER-to-Relational Mapping – Functional Dependencies – Non-loss Decomposition – First, Second, Third Normal Forms, Dependency Preservation – Boyce/Codd Normal Form – Multi-valued Dependencies and Fourth Normal Form – Join Dependencies and Fifth Normal Form

UNIT III TRANSACTIONS 9

Transaction Concepts – ACID Properties – Schedules – Serializability – Concurrency Control – Need for Concurrency – Locking Protocols – Two Phase Locking – Deadlock – Transaction Recovery - Save Points – Isolation Levels – SQL Facilities for Concurrency and Recovery.

UNIT IV IMPLEMENTATION TECHNIQUES 9

RAID – File Organization – Organization of Records in Files – Indexing and Hashing –Ordered Indices – B+ tree Index Files – B tree Index Files – Static Hashing – Dynamic Hashing – Query Processing Overview – Algorithms for SELECT and JOIN operations – Query optimization using Heuristics and Cost Estimation.

UNIT V ADVANCED TOPICS 9

Distributed Databases: Architecture, Data Storage, Transaction Processing – Object-based Databases: Object Database Concepts, Object-Relational features, ODMG Object Model, ODL, OQL - XML Databases: XML Hierarchical Model, DTD, XML Schema, XQuery – Information Retrieval: IR Concepts, Retrieval Models, Queries in IR systems.

TOTAL: 45 PERIODS

OUTCOMES:

Upon completion of the course, the students will be able to:

- Classify the modern and futuristic database applications based on size and complexity
- Map ER model to Relational model to perform database design effectively
- Write queries using normalization criteria and optimize queries
- Compare and contrast various indexing strategies in different database systems
- Appraise how advanced databases differ from traditional databases.

TEXT BOOKS:

1. Abraham Silberschatz, Henry F. Korth, S. Sudharshan, -Database System Concepts‖, Sixth Edition, Tata McGraw Hill, 2011.
2. Ramez Elmasri, Shamkant B. Navathe, -Fundamentals of Database Systems‖, Sixth Edition, Pearson Education, 2011.

REFERENCES:

1. C.J.Date, A.Kannan, S.Swamynathan, -An Introduction to Database Systems‖, Eighth Edition, Pearson Education, 2006.
2. Raghu Ramakrishnan, —Database Management Systems‖, Fourth Edition, McGraw-Hill College Publications, 2015.
3. G.K.Gupta,"Database Management Systems‖, Tata McGraw Hill, 2011.

CS8075 DATA WAREHOUSING AND DATA MINING L T P C
3 0 0 3

OBJECTIVES:

- To understand data warehouse concepts, architecture, business analysis and tools
- To understand data pre-processing and data visualization techniques
- To study algorithms for finding hidden and interesting patterns in data
- To understand and apply various classification and clustering techniques using tools.

UNIT I DATA WAREHOUSING, BUSINESS ANALYSIS AND ON-LINE ANALYTICAL PROCESSING (OLAP) 9

Basic Concepts - Data Warehousing Components – Building a Data Warehouse – Database Architectures for Parallel Processing – Parallel DBMS Vendors - Multidimensional Data Model – Data Warehouse Schemas for Decision Support, Concept Hierarchies -Characteristics of OLAP Systems – Typical OLAP Operations, OLAP and OLTP.

UNIT II DATA MINING – INTRODUCTION 9

Introduction to Data Mining Systems – Knowledge Discovery Process – Data Mining Techniques – Issues – applications- Data Objects and attribute types, Statistical description of data, Data Preprocessing – Cleaning, Integration, Reduction, Transformation and discretization, Data Visualization, Data similarity and dissimilarity measures.

UNIT III DATA MINING - FREQUENT PATTERN ANALYSIS 9

Mining Frequent Patterns, Associations and Correlations – Mining Methods- Pattern Evaluation Method – Pattern Mining in Multilevel, Multi Dimensional Space – Constraint Based Frequent Pattern Mining, Classification using Frequent Patterns

UNIT IV CLASSIFICATION AND CLUSTERING 9

Decision Tree Induction - Bayesian Classification – Rule Based Classification – Classification by Back Propagation – Support Vector Machines — Lazy Learners – Model Evaluation and Selection- Techniques to improve Classification Accuracy.

Clustering Techniques – Cluster analysis-Partitioning Methods - Hierarchical Methods – Density Based Methods - Grid Based Methods – Evaluation of clustering – Clustering high dimensional data- Clustering with constraints, Outlier analysis-outlier detection methods.

UNIT V WEKA TOOL 9

Datasets – Introduction, Iris plants database, Breast cancer database, Auto imports database - Introduction to WEKA, The Explorer – Getting started, Exploring the explorer, Learning algorithms, Clustering algorithms, Association–rule learners.

TOTAL: 45 PERIODS

OUTCOMES:

Upon completion of the course, the students should be able to:

- Design a Data warehouse system and perform business analysis with OLAP tools.
- Apply suitable pre-processing and visualization techniques for data analysis
- Apply frequent pattern and association rule mining techniques for data analysis
- Apply appropriate classification and clustering techniques for data analysis

TEXT BOOK:

1. Jiawei Han and Micheline Kamber, -Data Mining Concepts and Techniques‖, Third Edition,

Elsevier, 2012.

REFERENCES:

1. Alex Berson and Stephen J.Smith, -Data Warehousing, Data Mining & OLAP‖, Tata McGraw – Hill Edition, 35th Reprint 2016.
2. K.P. Soman, Shyam Diwakar and V. Ajay, -Insight into Data Mining Theory and Practice‖, Eastern Economy Edition, Prentice Hall of India, 2006.
3. Ian H.Witten and Eibe Frank, -Data Mining: Practical Machine Learning Tools and Techniques‖, Elsevier, Second Edition.

CS8091	BIG DATA ANALYTICS	L	T	P	C
		3	0	0	3

OBJECTIVES:

- To know the fundamental concepts of big data and analytics.
- To explore tools and practices for working with big data
- To learn about stream computing.
- To know about the research that requires the integration of large amounts of data.

UNIT I INTRODUCTION TO BIG DATA 9

Evolution of Big data - Best Practices for Big data Analytics - Big data characteristics - Validating - The Promotion of the Value of Big Data - Big Data Use Cases- Characteristics of Big Data Applications - Perception and Quantification of Value -Understanding Big Data Storage - A General Overview of High-Performance Architecture - HDFS - MapReduce and YARN - Map Reduce Programming Model

UNIT II CLUSTERING AND CLASSIFICATION 9

Advanced Analytical Theory and Methods: Overview of Clustering - K-means - Use Cases - Overview of the Method - Determining the Number of Clusters - Diagnostics - Reasons to Choose and Cautions .- Classification: Decision Trees - Overview of a Decision Tree - The General Algorithm - Decision Tree Algorithms - Evaluating a Decision Tree - Decision Trees in R - Naïve Bayes - Bayes‘ Theorem - Naïve Bayes Classifier.

UNIT III ASSOCIATION AND RECOMMENDATION SYSTEM 9

Advanced Analytical Theory and Methods: Association Rules - Overview - Apriori Algorithm - Evaluation of Candidate Rules - Applications of Association Rules - Finding Association& finding similarity - Recommendation System: Collaborative Recommendation- Content Based Recommendation - Knowledge Based Recommendation- Hybrid Recommendation Approaches.

UNIT IV STREAM MEMORY 9

Introduction to Streams Concepts – Stream Data Model and Architecture - Stream Computing, Sampling Data in a Stream – Filtering Streams – Counting Distinct Elements in a Stream – Estimating moments – Counting oneness in a Window – Decaying Window – Real time Analytics Platform(RTAP) applications - Case Studies - Real Time Sentiment Analysis, Stock Market Predictions. Using Graph Analytics for Big Data: Graph Analytics

UNIT V NOSQL DATA MANAGEMENT FOR BIG DATA AND VISUALIZATION 9

NoSQL Databases : Schema-less Models‖: Increasing Flexibility for Data Manipulation-Key Value Stores- Document Stores - Tabular Stores - Object Data Stores - Graph Databases Hive - Sharding –- Hbase – Analyzing big data with twitter - Big data for E-Commerce Big data for blogs - Review of Basic Data Analytic Methods using R.

TOTAL: 45 PERIODS

OUTCOMES:

Upon completion of the course, the students will be able to:

- Work with big data tools and its analysis techniques
- Analyze data by utilizing clustering and classification algorithms
- Learn and apply different mining algorithms and recommendation systems for large volumes of data
- Perform analytics on data streams
- Learn NoSQL databases and management.

TEXT BOOKS:

1. Anand Rajaraman and Jeffrey David Ullman, "Mining of Massive Datasets", Cambridge University Press, 2012.
2. David Loshin, "Big Data Analytics: From Strategic Planning to Enterprise Integration with Tools, Techniques, NoSQL, and Graph", Morgan Kaufmann/El sevier Publishers, 2013.

REFERENCES:

1. EMC Education Services, "Data Science and Big Data Analytics: Discovering, Analyzing, Visualizing and Presenting Data", Wiley publishers, 2015.
2. Bart Baesens, "Analytics in a Big Data World: The Essential Guide to Data Science and its Applications", Wiley Publishers, 2015.
3. Dietmar Jannach and Markus Zanker, "Recommender Systems: An Introduction", Cambridge University Press, 2010.
4. Kim H. Pries and Robert Dunnigan, "Big Data Analytics: A Practical Guide for Managers " CRC Press, 2015.
5. Jimmy Lin and Chris Dyer, "Data-Intensive Text Processing with MapReduce", Synthesis Lectures on Human Language Technologies, Vol. 3, No. 1, Pages 1-177, Morgan Claypool publishers, 2010.

ECE

2019-20

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
B.E. ELECTRONICS AND COMMUNICATION ENGINEERING
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM
I - VIII SEMESTERS CURRICULA AND SYLLABI

SEMESTER I

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	31	19	0	12	25

SEMESTER II

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8253	Physics for Electronics Engineering	BS	3	3	0	0	3
4.	BE8254	Basic Electrical and Instrumentation Engineering	ES	3	3	0	0	3
5.	EC8251	Circuit Analysis	PC	4	4	0	0	4
6.	EC8252	Electronic Devices	PC	3	3	0	0	3
PRACTICALS								
7.	EC8261	Circuits and Devices Laboratory	PC	4	0	0	4	2
8.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
			TOTAL	29	21	0	8	25

SEMESTER III

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8352	Linear Algebra and Partial Differential Equations	BS	4	4	0	0	4
2.	EC8393	Fundamentals of Data Structures In C	ES	3	3	0	0	3
3.	EC8351	Electronic Circuits- I	PC	3	3	0	0	3
4.	EC8352	Signals and Systems	PC	4	4	0	0	4
5.	EC8392	Digital Electronics	PC	3	3	0	0	3
6.	EC8391	Control Systems Engineering	PC	3	3	0	0	3
PRACTICALS								
7.	EC8381	Fundamentals of Data Structures in C Laboratory	ES	4	0	0	4	2
8.	EC8361	Analog and Digital Circuits Laboratory	PC	4	0	0	4	2
9.	HS8381	Interpersonal Skills/Listening &Speaking	EEC	2	0	0	2	1
			TOTAL	30	20	0	10	25

SEMESTER IV

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8451	Probability and Random Processes	BS	4	4	0	0	4
2.	EC8452	Electronic Circuits II	PC	3	3	0	0	3
3.	EC8491	Communication Theory	PC	3	3	0	0	3
4.	EC8451	Electromagnetic Fields	PC	4	4	0	0	4
5.	EC8453	Linear Integrated Circuits	PC	3	3	0	0	3
6.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
PRACTICALS								
7.	EC8461	Circuits Design and Simulation Laboratory	PC	4	0	0	4	2
8.	EC8462	Linear Integrated Circuits Laboratory	PC	4	0	0	4	2
			TOTAL	28	20	0	8	24

SEMESTER V

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	EC8501	Digital Communication	PC	3	3	0	0	3
2.	EC8553	Discrete-Time Signal Processing	PC	4	4	0	0	4
3.	EC8552	Computer Architecture and Organization	PC	3	3	0	0	3
4.	EC8551	Communication Networks	PC	3	3	0	0	3
5.		Professional Elective I	PE	3	3	0	0	3
6.		Open Elective I	OE	3	3	0	0	3
PRACTICALS								
7.	EC8562	Digital Signal Processing Laboratory	PC	4	0	0	4	2
8.	EC8561	Communication Systems Laboratory	PC	4	0	0	4	2
9.	EC8563	Communication Networks Laboratory	PC	4	0	0	4	2
			TOTAL	31	19	0	12	25

SEMESTER VI

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	EC8691	Microprocessors and Microcontrollers	PC	3	3	0	0	3
2.	EC8095	VLSI Design	PC	3	3	0	0	3
3.	EC8652	Wireless Communication	PC	3	3	0	0	3
4.	MG8591	Principles of Management	HS	3	3	0	0	3
5.	EC8651	Transmission Lines and RF Systems	PC	3	3	0	0	3
6.		Professional Elective -II	PE	3	3	0	0	3
PRACTICALS								
7.	EC8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
8.	EC8661	VLSI Design Laboratory	PC	4	0	0	4	2
9.	EC8611	Technical Seminar	EEC	2	0	0	2	1
10.	HS8581	Professional Communication	EEC	2	0	0	2	1
			TOTAL	30	18	0	12	24

SEMESTER III

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6351	Transforms and Partial Differential Equations	3	1	0	4
2.	EE6352	Electrical Engineering and Instrumentation	3	1	0	4
3.	EC6301	Object Oriented Programming and Data Structures	3	0	0	3
4.	EC6302	Digital Electronics	3	0	0	3
5.	EC6303	Signals and Systems	3	1	0	4
6.	EC6304	Electronic Circuits- I	3	1	0	4
PRACTICAL						
7.	EC6311	Analog and Digital Circuits Laboratory	0	0	3	2
8.	EC6312	OOPS and Data Structures Laboratory	0	0	3	2
		TOTAL	18	4	6	26

SEMESTER IV

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6451	Probability and Random Processes	3	1	0	4
2.	EC6401	Electronic Circuits II	3	0	0	3
3.	EC6402	Communication Theory	3	0	0	3
4.	EC6403	Electromagnetic Fields	3	1	0	4
5.	EC6404	Linear Integrated Circuits	3	0	0	3
6.	EC6405	Control System Engineering	3	0	0	3
PRACTICAL						
7.	EC6411	Circuit and Simulation Integrated Laboratory	0	0	3	2
8.	EC6412	Linear Integrated Circuit Laboratory	0	0	3	2
9.	EE6461	Electrical Engineering and Control System Laboratory	0	0	3	2
		TOTAL	18	2	9	26

SEMESTER V

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	EC6501	Digital Communication	3	0	0	3
2.	EC6502	Principles of Digital Signal Processing	3	1	0	4
3.	EC6503	Transmission Lines and Wave Guides	3	1	0	4
4.	GE6351	Environmental Science and Engineering	3	0	0	3
5.	EC6504	Microprocessor and Microcontroller	3	0	0	3
PRACTICAL						
6.	EC6511	Digital Signal Processing Laboratory	0	0	3	2
7.	EC6512	Communication System Laboratory	0	0	3	2
8.	EC6513	Microprocessor and Microcontroller Laboratory	0	0	3	2
		TOTAL	15	2	9	23

SEMESTER VI

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MG6851	Principles of Management	3	0	0	3
2.	CS6303	Computer Architecture	3	0	0	3
3.	CS6551	Computer Networks	3	0	0	3
4.	EC6601	VLSI Design	3	0	0	3
5.	EC6602	Antenna and Wave propagation	3	0	0	3
6.		Elective I	3	0	0	3
PRACTICAL						
7.	EC6611	Computer Networks Laboratory	0	0	3	2
8.	EC6612	VLSI Design Laboratory	0	0	3	2
9.	GE6674	Communication and Soft Skills - Laboratory Based	0	0	4	2
		TOTAL	18	0	10	24

SEMESTER VII

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	EC6701	RF and Microwave Engineering	3	0	0	3
2.	EC6702	Optical Communication and Networks	3	0	0	3
3.	EC6703	Embedded and Real Time Systems	3	0	0	3
4.		Elective II	3	0	0	3
5.		Elective III	3	0	0	3
6.		Elective IV	3	0	0	3
PRACTICAL						
7.	EC6711	Embedded Laboratory	0	0	3	2
8.	EC6712	Optical and Microwave Laboratory	0	0	3	2
		TOTAL	18	0	6	22

SEMESTER VIII

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	EC6801	Wireless Communication	3	0	0	3
2.	EC6802	Wireless Networks	3	0	0	3
3.		Elective V	3	0	0	3
4.		Elective VI	3	0	0	3
PRACTICAL						
5.	EC6811	Project Work	0	0	12	6
		TOTAL	12	0	12	18

TOTAL CREDITS:189

SEMESTER VI

ELECTIVE – I

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	EC6001	Medical Electronics	3	0	0	3
2.	EC6002	Advanced Digital Signal Processing	3	0	0	3
3.	CS6401	Operating Systems	3	0	0	3
4.	EC6003	Robotics and Automation	3	0	0	3

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 01** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 106-B.E. Electronics and Communication Engineering

	Subject Code - >	BS8161	CY8151	GE8151	GE8152	GE8161	HS8151	MA8151	PH8151
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817106001	AAKASHRAGHAV A							U	
312817106004	ABHISHEK S							U	
312817106011	ARUN KUMAR B							B	
312817106021	C APARAJITHA				U				
312817106026	DHANASREE M			U				U	
312817106033	GOKUL M			U	U			U	U
312817106035	HARI HARA SUDHAN S							UA	
312817106042	JAGANATH R				U				
312817106055	KUMARAN S							U	U
312817106075	RADHAKRISHNAN R		U	U				UA	UA
312817106079	RAJESH P		B					U	U
312817106080	RAJESH R		U	U				U	U
312817106081	RAMACHANDRAN M							U	
312817106087	SABARI JANATH BP							B	
312817106095	SELVAM P		U					U	U
312817106097	SHAM SUNDAR P							U	
312817106100	SIVAYOGESH R							U	
312817106101	SOWMIYA S							U	
312817106103	SRIDHAR V							U	
312817106109	THARUN AVR			U				U	U
312817106111	UDHAYA KUMAR U							U	
312817106114	VASANTHAKUMAR N							U	U
312817106118	VIJAY RAJ VG			U				U	U
312817106119	VINOTHINI P							B	B
312817106121	YUVAN VARSHITH A							B	
312818106001	AARTHI S			UA				U	U
312818106002	ABINAYA D		U					U	U
312818106004	ANGAMMAL R		UA	UA				U	U
312818106005	ANITHA K			UA				U	U
312818106007	BALAGANESH M								A
312818106008	BALAJI M							B+	
312818106009	BELGIN B							U	U
312818106011	BHARANIDHARAN A							B	
312818106013	CHRISTY JENIFER S							U	
312818106014	DEEPA LAKSHMI S							B	

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312818106016	DEEPIKA K							B+	
312818106019	GAYATHRI P							U	
312818106020	HARI KRISHNAN A							U	U
312818106022	INDUMATHI R							B	
312818106024	JOTHI PRASANNA C							U	
312818106025	JYOTHIKA V			U					
312818106026	KANIMOZHI M							U	B
312818106027	KIRAN SRI B							B	B+
312818106030	MOHAN RAJ M V		U					U	U
312818106031	MONISHA M							U	
312818106034	NANDHINI M							A+	
312818106035	PARIMALA G								B+
312818106039	PRAVEENKUMAR A							B+	
312818106043	RAGUL S							U	
312818106044	RESHMA G							B	
312818106049	SANJAY KUMAR P K							U	
312818106050	SANKAR B			U				U	U
312818106052	SANTHANA KRISHNAN B							U	
312818106056	SETHU PATHI A		B						U
312818106057	SIBI J							U	
312818106058	SINIVASAN V		U					U	UA
312818106063	SUBHIKSHA V K							U	
312818106064	THAMIL ALAGAN M							U	
312818106067	VANISREE K							U	
312818106068	VASANTH P							B	
312818106069	VIGNESHWAR P								U
312818106070	VIKASH ARDHENDRA S								UA
312818106072	VINOTHKUMAR A R								B
312818106074	YOGESVAR T		B					U	U
312818106075	YOKESH D							U	
312819106002	AJAY ASLEEN J	O	A+	B+	B+	O	B	A+	O
312819106003	AKASH S	A	A	B	B	A+	B+	B	A
312819106004	ALBIN FELIX A	A	B+	U	B	A+	B+	B	B
312819106005	ANANTHAN A	A+	B+	U	B+	A	U	B	B
312819106006	ANSHEL DANY MERSTIN P	A+	B+	B	B+	A+	B+	B	B
312819106007	ARTHI M	B+	B	B+	B	A+	U	U	B
312819106008	ARUNA A	A+	B+	U	A+	A+	U	U	B
312819106009	ASHWIN P	A	U	U	U	A+	B	U	U
312819106010	DINESHKUMAR S	O	B+	B	A+	O	A	B	A
312819106011	GANESH P	A+	B+	U	B+	O	B	U	B+

312819106012	GEETHA K	O	B+	U	O	O	U	B	A
312819106013	HARINI P	A	A	B	B+	O	B	B	B
312819106014	HARISH R	O	A+	B	A	O	B+	B	A
312819106015	JAMISON T	B+	U	U	B	UA	U	U	U
312819106016	JEEVAN KUMAR C	A+	B+	B	A	A+	B	B	B
312819106017	JEYAJANANI D	UA	UA	UA	UA	UA	UA	UA	UA
312819106018	KARTHI S	A+	A+	U	A	O	B	A	A
312819106019	KISANA M	O	O	B+	A+	O	B+	O	A
312819106020	KOKILA AISWARYA M	O	A	B+	A+	O	B+	O	A
312819106021	KRISHNAMURTHY R E	O	A	B	A	O	B+	A+	A+
312819106022	LOKESH V	A	U	U	B+	A+	U	B	U
312819106023	MIDHULA R	O	A	U	B	O	B	A	B+
312819106024	NAGA GRISHMA K	O	B+	U	A	O	B+	U	B
312819106025	PAVANI G	O	B+	B	B	O	B	B	A
312819106026	POOJA D	A+	O	B	A+	O	B	A+	A+
312819106027	PRASANNA BHARATHI J	A+	B	B	B+	A+	B	U	B
312819106028	PRAVEEN M	A+	B+	A	A	O	B	B	B
312819106029	PRAVEEN KUMAR G	A+	B+	B	A	O	B	B	B+
312819106030	RADHIKA V	A	U	U	B+	A	U	U	U
312819106031	RAGULGANDHI K	O	B+	U	B+	A+	U	B	B+
312819106032	SAMUVEL S	A+	B+	U	B	A+	U	U	B
312819106033	SATHISH KUMAR M	A+	B	U	B+	O	B	U	B
312819106034	SELVARAJ S	O	A+	B	A	O	U	B+	A
312819106035	SHANMUGAM B	O	O	B	B+	O	B	B+	A
312819106036	SHREEDHAREN M	B+	B+	U	U	A+	B	U	U
312819106037	SNEHA V	A+	A	B	B	A+	U	U	B
312819106038	SOLOMON SAGAYAM D J	A+	A+	B+	B	O	B	U	B+
312819106039	SOWMIYA S	O	O	A	A	O	B+	A+	A+
312819106040	SREEDHAR M	A	A+	B	B+	O	B	B	A
312819106041	TAVASI B	O	A	U	A	O	B	B+	A
312819106042	THIRUGNANA SAMPANTHAM N	A+	B+	U	B	A+	U	B	B
312819106043	TIMILA R	O	O	B	O	O	A	A+	O
312819106044	VASANTH P	O	B+	B	A	O	U	A+	A

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 03** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 106-B.E. Electronics and Communication Engineering

	Subject Code - >	EC8351	EC8352	EC8361	EC8381	EC8391	EC8392	EC8393	HS8381	MA8352
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817106001	AAKASHRAGHAV A	U	UA			UA				UA
312817106002	AARTHI A									B
312817106003	AARTHI M	UA								U
312817106004	ABHISHEK S	UA				UA	UA	UA		UA
312817106006	ABISHEK PRASANNAA R B	U	U					U		U
312817106011	ARUN KUMAR B	UA								UA
312817106015	BALAJI B						B			UA
312817106021	C APARAJITHA									U
312817106022	CHINRASU R									U
312817106026	DHANASREE M	UA	B			U	U	UA		UA
312817106027	DINESH R						B	U		UA
312817106032	GOKUL A									U
312817106033	GOKUL M	UA	UA			UA	UA	UA		UA
312817106034	GOWTHAM G	U						U		U
312817106035	HARI HARA SUDHAN S	UA	UA			UA	UA			UA
312817106037	HARISUTHAN M									UA
312817106042	JAGANATH R							U		U
312817106044	JAYAKUMAR J		B+							B
312817106046	JAYAPRAKASH S	U	B			B		U		UA
312817106048	JOHNDAVID D	U					U			UA
312817106050	KALAIYARASI G									UA
312817106053	KARPAGAM S	UA				U	UA	UA		UA
312817106054	KUMARAN J									B
312817106055	KUMARAN S	UA						UA		UA
312817106058	MADHUMITHA M	B								UA
312817106059	MAGESH R									UA
312817106066	NANDHA BALAN M									B
312817106070	PREETHIGA S		B+					B		U
312817106073	PRIYANKA H									U
312817106075	RADHAKRISHNAN R	UA	UA			UA	U	UA		UA
312817106076	RAGHUL K		B			U	U			UA
312817106079	RAJESH P	U						U		U
312817106080	RAJESH R	UA	U			UA	U	U		UA
312817106081	RAMACHANDRAN M	UA	UA			UA	UA	UA		UA
312817106086	ROKESH R					U	U			UA

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312817106087	SABARI JANATH BP						U			U
312817106089	SAHITHYA V									U
312817106094	SANTHOSH KUMAR S	UA				U	B			U
312817106095	SELVAM P					UA		UA		UA
312817106097	SHAM SUNDAR P							UA		UA
312817106099	SIDDHARTHAN M									UA
312817106100	SIVAYOGESH R	B	U			B	U	UA		UA
312817106101	SOWMIYA S					B				U
312817106102	SOWMIYASHREE K									U
312817106103	SRIDHAR V					UA	B	UA		UA
312817106109	THARUN AVR	U	U			UA	UA	U		UA
312817106111	UDHAYA KUMAR U	U	U			B	U	U		UA
312817106113	VANMATHI M									U
312817106114	VASANTHAKUMAR N	UA				U				UA
312817106115	VASANTHA RAJA G									U
312817106117	VIGNESH R									U
312817106118	VIJAY RAJ VG	UA	UA			U	U			UA
312817106119	VINOTHINI P		B			B		UA		U
312817106121	YUVAN VARSHITH A	UA	UA			U		UA		UA
312817106301	DEVENDRAN R		U			U		UA		U
312817106302	DHANALAKSHMI G		U					UA		U
312818106001	AARTHI S	U	B	B+	A	U	U	U	O	U
312818106002	ABINAYA D	U	B	B+	B+	B	U	B	O	U
312818106003	ABISHEK P	B	B	O	O	B	B	U	O	B
312818106004	ANGAMMAL R	U	B	B+	B+	U	U	U	O	U
312818106005	ANITHA K	U	B	B+	B	U	U	U	O	U
312818106006	ARCHANA R G	A	O	O	O	B+	B	B	O	A
312818106007	BALAGANESH M	B	B	A	A+	B	U	B	O	U
312818106008	BALAJI M	U	B	A	A+	B	U	B	O	B+
312818106009	BELGIN B	U	U	A+	A	B	U	U	O	U
312818106010	BHARANI R	B	B+	A+	O	B+	B+	U	O	B
312818106011	BHARANIDHARAN A	B	B	B+	A+	U	U	B	O	U
312818106012	CHANDRU S	B	B+	A+	A	B	B+	B+	O	B
312818106013	CHRISTY JENIFER S	B	B	O	A+	B	B	B	O	B
312818106014	DEEPA LAKSHMI S	B	B	A+	A	B	B	B+	O	B
312818106015	DEEPIGA B	B	B+	A+	O	A	A	A	O	B
312818106016	DEEPIKA K	B	B+	A+	A+	B	B+	B+	O	U
312818106017	DIVYA PRABHA S	B	B+	O	A+	B	B	U	O	B
312818106018	DURKA P	B	B+	A+	A+	B+	A+	B+	O	B+
312818106019	GAYATHRI P	B	U	O	A+	B+	B	U	O	U

312818106020	HARI KRISHNAN A	B	U	B	A	U	B	U	O	U
312818106021	HARIPRIYA H	B+	A	O	O	A	A	A	O	A+
312818106022	INDUMATHI R	B	U	A+	O	B	A	A	O	B+
312818106023	JAYARAM M	B+	B	B+	A+	B+	B+	U	O	B+
312818106024	JOTHI PRASANNA C	U	U	B+	B+	U	B	U	O	U
312818106025	JYOTHIKA V	B	U	A	A	B	B	U	O	B
312818106026	KANIMOZHI M	U	B	A	A+	B	B+	B+	O	B
312818106027	KIRAN SRI B	B	B	O	A+	B	B+	B+	O	B
312818106028	LOGESH K	U	B	A+	O	B+	B+	B	O	B
312818106029	MANJULA P	B	B	B+	A+	B+	B	B+	O	B
312818106030	MOHAN RAJ M V	U	B	B+	A	B	B	B	O	U
312818106031	MONISHA M	U	U	B+	B+	B	U	B	O	U
312818106032	MONISHA V	B+	A	O	A	B+	B+	B+	O	U
312818106033	MUTHURAMAN S	B	B+	A	A+	B	B	B	O	B
312818106034	NANDHINI M	B+	B	O	A+	B	A	B+	O	U
312818106035	PARIMALA G	B	B	A+	A	B+	B+	B	O	U
312818106036	PAVITHRA S	B+	B+	O	O	A	A	A	O	B
312818106037	PHILIP GABRIEL J	A	B	O	O	B+	A	B+	O	B
312818106038	PRABAKARAN N	B	B	B+	A+	B	B	B	O	U
312818106039	PRAVEENKUMAR A	B+	B	O	O	A	B	U	O	U
312818106040	PREETHI T	B+	B	O	O	B+	B	B+	O	B
312818106041	PREMKUMAR S	B+	A	O	A+	A	B	B	O	B
312818106042	PRIYADHARSHINI V	B	B	O	O	A	B	B+	O	B
312818106043	RAGUL S	B	U	A+	A	B	U	U	O	U
312818106044	RESHMA G	B	U	A	A+	B+	B	B+	O	U
312818106045	RITHICK CHANDRAN R	U	B	A+	A	B	U	B	O	B
312818106046	SAGARIKA V	B+	B	O	A+	B	B	B	O	B
312818106048	SANDHIYA LAKSHMI K	B	B	B+	A+	B	U	B+	O	B
312818106049	SANJAY KUMAR P K	U	U	B+	A	U	U	U	O	U
312818106050	SANKAR B	U	B	B+	A+	U	U	B	O	U
312818106052	SANTHANA KRISHNAN B	B	B	B+	A	B	U	B	O	B
312818106053	SANTHOSH D	B	B+	A	A	B	B	U	O	B
312818106054	SANTHOSH S	B	B+	A	O	B	B	B	O	B
312818106055	SENTHIL KUMAR S	B	B	A+	A+	B	B	B+	O	U
312818106056	SETHU PATHI A	B	B	A+	A+	U	U	B	O	U
312818106057	SIBI J	U	B	B+	A	B	B	B	O	U
312818106058	SINIVASAN V	U	U	B+	A	U	U	U	O	U
312818106059	SNEHA K	U	A	O	O	B+	B	B+	O	B
312818106060	SNEKA T	U	B+	O	O	B	U	B	O	B
312818106061	SRINIVASAN R	B	B	A+	A	B+	B	U	O	B

312818106062	SRI VASSU PANDI R	U	B+	A	A+	B	U	B	O	B
312818106063	SUBHIKSHA V K	U	B	A+	A	B	U	B	O	B
312818106064	THAMIL ALAGAN M	B	B	A	B+	U	U	U	O	U
312818106065	THARNATH B	B+	A	O	O	B+	B+	B+	O	B
312818106066	UMAMAGESHWARI N	B	A+	O	O	B+	B+	A+	O	B
312818106067	VANISREE K	B	B	A+	A+	B	B	B	O	B
312818106068	VASANTH P	U	B	A	A	B	B	B	O	U
312818106069	VIGNESHWAR P	U	B	B+	A	U	U	U	O	U
312818106070	VIKASH ARDHENDRA S	UA	UA	UA	UA	UA	UA	UA	O	UA
312818106071	VINOTHINI S	U	B	O	A+	A	B	U	O	B
312818106072	VINOTHKUMAR A R	B	B+	A+	A	B+	U	B	O	B
312818106073	YAZHARIVAN D S	B	B+	O	O	A	B	A	O	B
312818106074	YOGESVAR T	U	U	B+	B+	U	U	U	O	U
312818106075	YOKESH D	U	B	A	A+	B+	B+	B	O	B

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 05** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 106-B.E. Electronics and Communication Engineering

	Subject Code - >	EC8501	EC8551	EC8552	EC8553	EC8561	EC8562	EC8563	GE8077	OMD551
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817106001	AAKASHRAGHAV A	U	B	U	B	A+	B	A+	B+	U
312817106002	AARTHI A	B	B+	B	B+	A+	O	O	A	A
312817106003	AARTHI M	U	B	B	B	O	A+	O	B	B+
312817106004	ABHISHEK S	U	U	U	U	UA	UA	UA	U	UA
312817106005	ABINAYA M	B+	B+	B+	B	O	O	O	A	B+
312817106006	ABISHEK PRASANNAA R B	U	U	U	U	A+	B+	A	U	U
312817106007	ADHISIVAN P	B	B	B	B	O	O	O	B+	B
312817106008	ANSIN JOSE T	U	U	U	U	A+	B+	O	U	U
312817106009	ARAVIND S	U	B	B	B+	O	A	O	U	U
312817106010	ARCHANA K	A	A+	A+	A	O	O	O	B+	A+
312817106011	ARUN KUMAR B	B	U	B	U	A+	B+	A+	U	B
312817106012	ASHIKA BEHAM A	A	A+	A+	A	O	O	O	A	A+
312817106013	ASHVITHA R	B+	B	B+	B	A+	O	O	A	B+
312817106014	ASWINI C	A	B+	B+	A	O	O	O	A	B+
312817106015	BALAJI B	B+	B	B	U	A+	A+	A+	B	B
312817106016	BALAJI S	B	B	B	B	O	A+	O	B	U
312817106017	BAVANI M	A	A	A	A	O	O	O	B	A
312817106018	BAVITHRA VALLI NAYAGI P	A+	A+	B+	B+	O	O	O	B+	A+
312817106020	BHARGAVI U	B	B+	U	B	A+	A+	O	B	B
312817106021	C APARAJITHA	B	A	B+	B	O	A+	O	B+	B
312817106022	CHINRASU R	U	B+	B	B	A+	A	A+	B	B
312817106023	DEEPIKA B	B+	B+	B+	B+	O	O	O	B+	A
312817106024	DEEPIKA R	B+	B+	B+	B+	O	A+	O	B+	B+
312817106026	DHANASREE M	U	B	U	U	A+	B	A	U	B
312817106027	DINESH R	U	B	U	B	A	B	A	B	B
312817106028	DINESH Y	B+	B+	B+	A	O	O	O	B	A
312817106029	DINESH KUMAR A	B	U	B	A	O	O	O	B	B+
312817106030	GANAPATHARINI G	A	B+	B+	A	O	O	O	A	B
312817106031	GODHANDARAMAN B	B+	B	B+	B+	A+	A+	O	B+	U
312817106032	GOKUL A	B	B	B+	B+	O	B	O	B+	U
312817106033	GOKUL M	U	U	U	U	A	B	A	B+	U
312817106034	GOWTHAM G	U	B	B	B	O	A+	A+	U	U
312817106035	HARI HARA SUDHAN S	UA	UA	UA	UA	A	B	A+	UA	UA
312817106036	HARISH GOWTHAM S	B+	A	A	B+	O	A	O	A+	B

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312817106037	HARISUTHAN M	U	U	UA	U	O	B	O	B+	B
312817106039	ISHWARIYA R	A	A	B+	A	O	O	O	A+	A
312817106040	ISHWARYA M	A	A+	A	A+	O	O	O	A+	A+
312817106041	JAGADEESAN P	A	A	A	A	A	A+	O	A+	A+
312817106042	JAGANATH R	B+	B	B	B	A	B+	O	B+	B
312817106044	JAYAKUMAR J	B+	B+	B	B+	O	A	O	A	A
312817106046	JAYAPRAKASH S	B+	U	U	U	A+	B+	A+	B	B
312817106047	JENIFER RACHEL D	A	B+	B+	A	O	O	O	A+	B+
312817106048	JOHNDAVID D	U	U	U	B	A+	A	A+	B	U
312817106049	JUHI RAMALA R	A	A	A	A	O	A	O	A	A+
312817106050	KALAIYARASI G	A	B+	B+	B+	O	B+	O	B+	B
312817106052	KANIMOZHI S	A	B+	A	B	O	O	O	A	A
312817106053	KARPAGAM S	UA	U	U	U	O	B+	A+	U	U
312817106054	KUMARAN J	A	A	B+	B+	O	O	O	A	B
312817106055	KUMARAN S	U	U	B	U	A+	A	A	B	U
312817106056	LAVANYA R	A	B+	B+	B+	O	O	O	A	B
312817106057	LOKESH V	A	B+	A	A	O	A	O	A	B
312817106058	MADHUMITHA M	B	B	B	U	O	A	O	B+	U
312817106059	MAGESH R	B+	B	B+	B+	O	A	O	B+	U
312817106060	MAHALAKSHMI J	A+	A	A	B+	O	O	O	A+	A
312817106062	MATHESHWARAAN K	A	B+	B	B	O	A+	O	B+	B
312817106063	MOHANA PRIYA P	A+	B+	B+	A	O	O	O	A+	A+
312817106064	MONISA R	A	B+	B+	B+	O	O	O	A	A
312817106066	NANDHA BALAN M	A	B+	B+	B+	O	A+	O	A+	B+
312817106067	NANDHINI P	B	B+	A	B	O	A	O	B	B+
312817106068	NISHITHA K	B	B	B	B	O	B+	O	B	B+
312817106070	PREETHIGA S	B	B+	B	B	O	A	A+	U	B
312817106071	PREETHI SRIVANI D R	B	A	B+	B	O	A+	O	B	B+
312817106072	PREEVITHA S	A	A	B+	B+	O	O	O	B+	A
312817106073	PRIYANKA H	U	B+	B	B	O	A	O	B+	B+
312817106074	PRIYANKA S	B+	B	B	B+	O	O	O	B+	A
312817106075	RADHAKRISHNAN R	U	U	U	U	B	B	B+	U	U
312817106076	RAGHUL K	B	B	B	U	A	A	O	A+	B
312817106077	RAJALAKSHMI V	A	B+	A	A	O	O	O	A+	A
312817106079	RAJESH P	U	B	U	B	B+	B	A	B	U
312817106080	RAJESH R	U	B	U	UA	B	B	A	U	U
312817106081	RAMACHANDRAN M	U	B	U	U	A	B	A	B	U
312817106083	RIFANAPARVIN S	B+	B	B+	A	O	O	O	A	B+
312817106084	ROHIN K	B+	B	B	B	O	B+	O	B+	B
312817106085	ROHIT V	A	B+	A	B+	O	O	O	A	B

312817106086	ROKESH R	B+	B	B	B+	A	B	A+	B	B
312817106087	SABARI JANATH BP	B	U	B	U	O	B	O	B	B
312817106088	SADHANA M	B+	B	B+	B+	O	O	O	B+	B
312817106089	SAHITHYA V	B+	B	B	B	O	A+	O	B+	B
312817106090	SAMUVEL JAKAB R	B+	B+	B+	B+	O	O	O	B+	A
312817106091	SANGAVI B	B+	B+	B+	A+	O	O	O	B+	A
312817106092	SANGEEETHA A	B+	B+	B+	A	O	O	O	B+	B+
312817106093	SANGEETHA I	B	B	B+	B	O	O	O	B	B
312817106094	SANTHOSH KUMAR S	U	B	B	B	O	O	O	B	B
312817106095	SELVAM P	UA	UA	UA	UA	UA	UA	UA	UA	U
312817106096	SHALINI PRIYA S	A	B	B+	A+	O	O	O	A+	A
312817106097	SHAM SUNDAR P	B	B	B	B	O	A	O	B	B+
312817106098	SHRUTHI S	B+	B	B+	B+	O	O	O	A+	A+
312817106099	SIDDHARTHAN M	B	B	B+	B+	O	O	O	A	A
312817106100	SIVAYOGESH R	U	U	U	U	B+	B	A	B+	A
312817106101	SOWMIYA S	B+	U	B	B	O	B+	O	A	B+
312817106102	SOWMIYASHREE K	B+	B	B+	B+	A+	O	O	B+	B+
312817106103	SRIDHAR V	B	B	B	B	A+	A+	O	B	B
312817106105	SUBHASREE PS	B	B	B	B+	O	O	O	B+	B
312817106107	SWETHA K	B	B	B	B+	O	O	O	B+	B+
312817106109	THARUN AVR	U	U	U	U	B+	B	A	U	U
312817106110	THIRUPATHI S	A	B+	B	A	A+	O	O	B+	B+
312817106111	UDHAYA KUMAR U	U	B	U	B	B+	B	A	B	B
312817106112	VAISHNAVI P	A	A	B	B+	A+	A+	O	B+	A
312817106113	VANMATHI M	A	B	B	B	O	O	O	B+	A
312817106114	VASANTHAKUMAR N	B	B	U	U	A	B+	A	B	B
312817106115	VASANTHA RAJA G	B	B	B+	B	O	O	O	B+	B+
312817106116	VASHIKA E	B	B	B	B	O	A+	O	A	B+
312817106117	VIGNESH R	B	B	B	B	A+	B	O	B+	B
312817106118	VIJAY RAJ VG	U	U	U	U	B+	B	A+	B	U
312817106119	VINOTHINI P	B+	B	U	U	A+	B	O	B	U
312817106121	YUVAN VARSHITH A	U	B	U	U	A+	B+	A	B	U
312817106301	DEVENDRAN R	U	B	B	U	A+	A	A+	B	B
312817106302	DHANALAKSHMI G	B	B	B	U	O	A+	O	B+	A

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 08** **DATE OF PUBLICATION :17-10-2020**

Branch : 106-B.E. Electronics and Communication Engineering

	Subject Code - >	EC6801	EC6802	EC6811	GE6075	GE6757
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade
312813106006	AJAYKUMAR P	UA	UA		UA	UA
312813106083	PRIYADHARSHINI M	E				
312813106126	VAITHYA SAMBANDHAM K	C				
312813106133	VIJAY N	E				E
312813106302	NAVEEN PRASAD S	D	C			E
312813106303	SHIBIN C					
312814106036	JEBIN JOSEPH J	B				D
312814106048	MADHAN KUMAR R	B				
312814106059	MONISH N D	C				
312814106085	RANJITH KUMAR G				E	C
312814106090	SAMUEL REUBEN J	B	C		B	C
312814106102	TAMILARASI N		C			
312814106112	YOKESH R	B				
312815106005	AMSAVENI V	C				
312815106012	ARUN KUMAR K	UA	UA		UA	UA
312815106015	BALAJI K	E	E			
312815106031	DIVAKAR K	C	D		B	
312815106057	KARTHIKEYAN K	E	D		E	
312815106074	MANIPRIYAN G S	C	E		D	C
312815106081	MINOLTAN M	D				
312815106088	NISHANTHRAJ C	C	C		D	C
312815106092	PAVITHRA K (30-12-1997)	B				
312815106095	PRADEEP KUMAR B	E	E			E
312815106122	SASIKUMAR D	D				
312815106127	SHABEER AHAMED K	D	D			
312815106302	MOHAMED THOUFIK S	C			C	
312816106002	ABDUL WAHID S	B	C	S	B	C
312816106003	ABINAYA V	B	B	S	A	A
312816106005	ABITHA A	B	C	S	B	B
312816106006	ACHUTHA KJ	B	B	S	C	B
312816106007	AISHWARYA B	A	A	S	A	A
312816106008	AJITH KUMAR A	B	C	S	A	B
312816106009	AJITH PRIYADHARSHAN M	C	E	S	B	C
312816106010	AKSHAYA P	A	B	S	A	A
312816106011	AMBBIGA J	S	B	S	S	A

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312816106012	AMIRTHA T	S	A	S	A	A
312816106013	ANAND KUMAR M	B	D	S	B	B
312816106014	ARAVINDASAGAR V G	A	C	S	A	A
312816106015	ARIHARAN T	B	C	S	B	C
312816106016	ARUN P	C	D	S	B	C
312816106017	ARUNARANI S	B	C	S	B	B
312816106018	ARUN KUMAR V	B	C	S	B	B
312816106020	ASWINI J	A	B	S	A	A
312816106021	BALA HARIHARAN V	B	C	A	B	C
312816106022	BALAKUMAR E	C	E	S	C	C
312816106023	BALAKUMAR M	A	B	S	A	A
312816106024	BARATHWAJ N	B	C	S	B	B
312816106025	BLESSY PRIYANKA D	A	C	S	A	A
312816106026	CHANTHINI DEVI S	A	B	S	B	A
312816106028	DEEPAN S	C	D	A	B	C
312816106029	DHANDA PANI L S	B	C	S	B	B
312816106030	DHANESH KUMAR B	B	C	S	A	B
312816106031	DHARSHINI M	B	C	S	C	C
312816106032	DINESH KUMAR K R	D	C	A	C	C
312816106033	DIVYA J	S	A	S	S	A
312816106034	ELAKKIYA A	B	C	S	C	C
312816106035	ELANGOVAN B	B	D	S	B	C
312816106036	ENIYA C	B	C	S	B	C
312816106037	ESWARI R	C	B	S	C	B
312816106038	GANGADEVI G	A	B	S	B	B
312816106039	GOGUL RAJA K P	B	C	A	B	B
312816106040	GOKULALAKSHMI T	A	B	S	A	A
312816106041	GOWSALYA B	A	B	S	B	B
312816106042	GURUVISHWA U	A	B	S	A	B
312816106043	HARINI E	B	C	S	C	B
312816106044	HEMANTHA RAJAN V	A	A	S	B	A
312816106045	JAYAKARTHIGA A	B	C	S	B	B
312816106046	JAYAPRIYA R	B	B	S	B	B
312816106047	KALAIVANI B	C	E	S	C	C
312816106048	KARTHIKA M	A	B	S	B	A
312816106049	KARTHIKA R	B	D	S	B	C
312816106050	KARTHIKEYAN A	E	C	S	C	C
312816106051	KARTHIKEYAN S K	C	C	S	B	C
312816106052	KAVIYA K	B	D	A	D	C
312816106053	KHARISHMA MALINI A	B	B	A	B	C

312816106054	KIRUBAKARAN L	A	B	S	B	A
312816106055	KRISHNA PRASATH M	B	D	S	B	C
312816106056	KUMARESAN D	E	E	A	E	E
312816106057	LOGESHKUMAR K	B	B	S	B	B
312816106058	LOKESHWARAN KP	B	C	S	B	C
312816106059	MANINATHAN D	B	B	S	A	B
312816106060	MANO LAKSHATHA SRINIVASA MOORTHI S	B	C	S	C	B
312816106061	MOHAMED UMAR S	B	C	S	B	C
312816106062	MONISHA P	B	B	S	B	B
312816106063	MURUGAN K	B	E	S	B	B
312816106064	MUTHAMIL R	A	B	S	A	B
312816106065	NAVEENKUMAR B	B	B	S	B	B
312816106066	NAVEENKUMAR S (19-11-1998)	A	B	S	A	B
312816106067	NAVEENKUMAR S (17-12-1998)	B	E	A	C	C
312816106068	NETHAJI J	B	D	S	C	B
312816106069	NIHAARIKA S	C	C	S	B	B
312816106070	PALANISAMY V	A	C	A	A	B
312816106071	PAVITHRA P	S	B	S	A	A
312816106072	PELLETI HARSHAVARDHAN	A	B	S	B	B
312816106073	PRASANNAVADHANI P	B	B	S	A	B
312816106074	PRAVEENA C	B	D	A	C	C
312816106075	PRAVEEN JOHNRAJ A	E	E	A	U	E
312816106077	RAJALAKSHMI R	A	C	S	A	A
312816106078	RAJARAM M	B	D	S	C	C
312816106079	RAJASHREE R	B	C	S	B	C
312816106080	RAMYA P	A	B	S	A	A
312816106081	RANJITHA B	A	B	S	A	A
312816106082	RATHNA PRIYA S	A	B	S	A	A
312816106083	RAVISANKAR K	C	C	S	B	B
312816106084	REEHADESH SUGANTHAN R	B	C	S	B	B
312816106085	REKHA K	A	A	S	A	A
312816106086	ROJITH NESAR XN	C	B	S	C	C
312816106088	SANDHYA M	A	B	S	A	A
312816106089	SANGEETHA G	A	A	S	B	A
312816106090	SANTHIYA A	B	C	S	A	B

312816106091	SANTHOSH B	B	C	S	B	C
312816106092	SARANYA P	B	B	S	B	B
312816106093	SARATHKUMAR K	B	C	S	B	B
312816106094	SASTHINI K	A	B	S	A	A
312816106095	SATHIYA S	B	C	S	B	C
312816106097	SERMAKANI V	A	B	S	A	A
312816106098	SHALINI J	A	B	S	A	A
312816106099	SHARAVANANN U	C	D	A	B	B
312816106100	SHEELA RANI P	A	C	S	A	A
312816106101	SHIVA N	B	C	S	B	B
312816106102	SHIVA RAMAN P	B	B	S	B	B
312816106103	SIVVA DHARINI V	A	A	S	A	B
312816106104	SOUNDARA PANDIAN M	B	C	S	B	D
312816106105	SOWMIYA G	B	B	S	A	A
312816106107	SREENIDHI RV	S	B	S	A	A
312816106108	SRINITHI S	S	A	S	S	S
312816106109	SUBASH S	A	B	S	A	A
312816106110	SUNDHARAM A	A	C	A	A	B
312816106111	SURAJIT CHAKRABORTY A	A	C	S	A	B
312816106113	SURYA K	A	B	S	S	A
312816106115	TAMILSELVAN D	B	B	S	A	B
312816106116	TEJA D V S	B	C	S	B	B
312816106118	UMAMAHESWARI P	A	B	S	A	A
312816106119	VAITHEALINGHAM A	A	B	S	A	A
312816106120	VANI M	A	B	S	A	A
312816106121	VARADHARAJAN J	B	E	S	B	B
312816106122	VENGADESWARI P	A	C	S	A	A
312816106123	VENKATRAMAN M	C	E	S	B	C
312816106124	VIDHYA R	B	D	S	B	B
312816106125	VIGNESH H	B	C	S	B	B
312816106126	VIGNESHWAR S	B	C	A	A	B
312816106128	VISHAL RAJ Y	C	C	S	B	B
312816106129	VISITHRA R	A	C	S	A	A
312816106130	VISWA M	D	C	S	B	C
312816106131	YOGESWARAN K	B	C	S	B	A
312816106132	YOGITHA P	B	B	S	A	B
312816106133	YUVARAJ N	B	D	S	B	B
312816106134	ZAKKIRIYAZSHAA B	B	B	S	A	B

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 02** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 106-B.E. Electronics and Communication Engineering

	Subject Code - >	BE8254	EC8251	EC8252	EC8261	GE8261	HS8251	MA8251	PH8253
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312819106002	AJAY ASLEEN J	O	O	O	O	O	O	O	O
312819106003	AKASH S	A	A	B+	O	O	A+	A+	A
312819106004	ALBIN FELIX A	B	A	B	O	O	A+	B+	B
312819106005	ANANTHAN A	A	B+	A	O	O	A+	A+	B+
312819106006	ANSHEL DANY MERSTIN P	A+	A	B+	O	O	A+	A+	B
312819106007	ARTHI M	B	B	B	O	O	B+	B	B
312819106008	ARUNA A	A+	A+	B+	O	O	A+	A	A
312819106009	ASHWIN P	B	B	B	O	O	A+	B	B
312819106010	DINESHKUMAR S	O	O	O	O	O	O	O	O
312819106011	GANESH P	A+	A	A+	O	O	A+	A+	A+
312819106012	GEETHA K	O	O	A	O	O	O	B+	O
312819106013	HARINI P	A+	A+	B+	O	O	A+	A+	A+
312819106014	HARISH R	O	O	A+	O	O	O	O	O
312819106015	JAMISON T	B	B	B	O	O	B	B	B
312819106016	JEEVAN KUMAR C	A+	B+	A+	O	O	A+	B	B
312819106018	KARTHI S	A+	A+	A+	O	O	A+	A+	A+
312819106019	KISANA M	O	O	O	O	O	O	O	O
312819106020	KOKILA AISWARYA M	O	O	O	O	O	O	O	O
312819106021	KRISHNAMURTHY R E	O	O	O	O	O	O	O	O
312819106022	LOKESH V	B+	A+	B	O	O	A	B+	A
312819106023	MIDHULA R	A+	A+	B+	O	O	A+	A+	A+
312819106024	NAGA GRISHMA K	A+	A+	A+	O	O	A+	A+	B+
312819106025	PAVANI G	A+	A+	A+	O	O	A+	A+	A+
312819106026	POOJA D	O	O	O	O	O	O	O	O
312819106027	PRASANNA BHARATHI J	A	A	B	O	O	A+	A+	B
312819106028	PRAVEEN M	A	B+	B	O	O	A	A	B
312819106029	PRAVEEN KUMAR G	A+	A+	A+	O	O	A+	A+	A+
312819106030	RADHIKA V	B	B	B	O	O	B	B	B
312819106031	RAGULGANDHI K	A	B+	B	O	O	A+	A+	A
312819106032	SAMUVEL S	A+	B+	B+	O	O	A	A+	A
312819106033	SATHISH KUMAR M	A+	A	B+	O	O	A+	B+	B+
312819106034	SELVARAJ S	O	O	O	O	O	O	O	O
312819106035	SHANMUGAM B	O	O	O	O	O	O	O	O
312819106036	SHREEDHAREN M	B+	B+	B	O	O	B+	A	B+
312819106037	SNEHA V	A+	B+	B+	O	O	A+	A+	B+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312819106038	SOLOMON SAGAYAM D J	A+	A+	A	O	O	A+	B+	B+
312819106039	SOWMIYA S	O	O	O	O	O	O	O	O
312819106040	SREEDHAR M	A+	A+	B+	O	O	A+	A+	A+
312819106041	TAVASI B	A+	B+	A+	O	O	A+	A+	A+
312819106042	THIRUGNANA SAMPANTHAM N	B+	A	B	O	O	B	B+	B+
312819106043	TIMILA R	O	O	O	O	O	O	O	O
312819106044	VASANTH P	O	O	B+	O	O	A	O	O

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 04** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 106-B.E. Electronics and Communication Engineering

	Subject Code - >	EC8451	EC8452	EC8453	EC8461	EC8462	EC8491	GE8291	MA8451
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312818106001	AARTHI S	A	A	A	A+	O	A	A	B+
312818106002	ABINAYA D	B	B	B	A+	A+	B	B	B
312818106003	ABISHEK P	A+	A+	A+	O	O	A+	A+	A+
312818106004	ANGAMMAL R	A	A	B	A+	A+	B+	B	B
312818106005	ANITHA K	B	B	B	A+	O	A	B	B
312818106006	ARCHANA R G	O	O	O	O	O	O	O	O
312818106007	BALAGANESH M	A	A	A+	O	O	A+	A+	B+
312818106008	BALAJI M	A	A+	A+	O	O	A+	A+	A+
312818106009	BELGIN B	A	A	B+	O	O	B+	A+	B
312818106010	BHARANI R	A	A	A+	O	O	A	A+	A+
312818106011	BHARANIDHARAN A	A+	B+	A+	O	O	A	A+	B+
312818106012	CHANDRU S	A+	A	A+	O	O	A+	A+	B+
312818106013	CHRISTY JENIFER S	A+	A+	A+	O	O	A+	A+	A
312818106014	DEEPA LAKSHMI S	A+	A+	A	O	O	A+	A+	A
312818106015	DEEPIGA B	A+	A+	A+	O	O	A+	A+	A+
312818106016	DEEPIKA K	A+	A+	A+	O	O	A+	A+	A+
312818106017	DIVYA PRABHA S	A+	A+	A+	O	O	A+	A+	A+
312818106018	DURKA P	A+	A+	A+	O	O	A+	A+	A+
312818106019	GAYATHRI P	A	A+	A+	O	O	A+	A+	A
312818106020	HARI KRISHNAN A	B+	B	B	O	O	B+	B	B
312818106021	HARIPRIYA H	O	O	O	O	O	O	O	O
312818106022	INDUMATHI R	A+	A+	A+	O	O	A+	A+	A+
312818106023	JAYARAM M	A+	A+	A+	O	O	A+	A+	A+
312818106024	JOTHI PRASANNA C	B+	B	B+	O	O	B	A	A
312818106025	JYOTHIKA V	A	A+	B+	O	O	A	A+	A
312818106026	KANIMOZHI M	A+	A+	A+	O	O	A+	A+	A
312818106027	KIRAN SRI B	A+	A+	A+	O	O	A+	A+	A+
312818106028	LOGESH K	A+	A+	A+	O	O	A+	A+	A
312818106029	MANJULA P	A+	A+	A+	O	O	A+	A+	A+
312818106030	MOHAN RAJ M V	B	B	B	A+	O	B	B	B
312818106031	MONISHA M	A	B+	B+	O	O	A	A+	B
312818106032	MONISHA V	A+	A+	A+	O	O	A+	A+	A+
312818106033	MUTHURAMAN S	A	A+	A+	O	O	A+	A	B+
312818106034	NANDHINI M	A+	A+	A+	O	O	A+	A+	A+
312818106035	PARIMALA G	A+	A	A+	O	O	A+	A+	A+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312818106036	PAVITHRA S	O	O	O	O	O	O	O	O
312818106037	PHILIP GABRIEL J	O	O	O	O	O	O	O	A+
312818106038	PRABAKARAN N	B	B+	B+	O	O	A+	A+	A
312818106039	PRAVEENKUMAR A	A+	A+	A+	O	O	A+	A+	A+
312818106040	PREETHI T	A+	A+	A+	O	O	A+	A+	A+
312818106041	PREMKUMAR S	A	A	A	O	O	A	B+	A
312818106042	PRIYADHARSHINI V	A+	A+	A+	O	O	A+	A+	A+
312818106043	RAGUL S	A	A+	B+	O	O	A+	A+	B
312818106044	RESHMA G	A	A+	A	O	O	A+	A+	B+
312818106045	RITHICK CHANDRAN R	B+	B+	B	O	O	A	B	A
312818106046	SAGARIKA V	A+	A+	A+	O	O	A+	A+	A+
312818106048	SANDHIYA LAKSHMI K	A	A+	A+	O	O	A+	A	A
312818106049	SANJAY KUMAR P K	B	B	B	O	O	B	B+	B
312818106050	SANKAR B	B	B+	B+	A+	A+	A	B+	B
312818106052	SANTHANA KRISHNAN B	A+	A	A+	O	O	A+	A+	A+
312818106053	SANTHOSH D	A+	A	A	O	O	A	A	A+
312818106054	SANTHOSH S	A	A+	A+	O	O	A+	A+	B
312818106055	SENTHIL KUMAR S	B+	A	A	O	O	A+	A+	A+
312818106056	SETHU PATHI A	B+	A	B	O	O	A+	B	B
312818106057	SIBI J	A+	A	A	O	O	B+	A+	B+
312818106058	SINIVASAN V	B	B	B	A+	O	B	B	B
312818106059	SNEHA K	A+	A+	A+	O	O	A+	A+	A+
312818106060	SNEKA T	A+	A+	A+	O	O	A+	A+	A+
312818106061	SRINIVASAN R	A	A+	A+	O	O	A	A	A
312818106062	SRI VASSU PANDI R	A+	A+	A	O	O	A+	A	A+
312818106063	SUBHIKSHA V K	A	A	A+	O	O	A+	A+	A
312818106064	THAMIL ALAGAN M	B+	A	B+	O	O	B+	A	A
312818106065	THARNATH B	A+	O	A+	O	O	O	O	O
312818106066	UMAMAGESHWARI N	O	O	O	O	O	O	O	O
312818106067	VANISREE K	A+	A+	A+	O	O	A+	A+	A
312818106068	VASANTH P	A	A+	B+	O	O	A	A	B+
312818106069	VIGNESHWAR P	A	A	B	O	O	A	A	B
312818106071	VINOTHINI S	A+	A+	A+	O	O	A+	A+	A+
312818106072	VINOTHKUMAR A R	A	A	A+	O	O	A+	A	A
312818106073	YAZHARIVAN D S	A+	A+	A+	O	O	A+	A+	A+
312818106074	YOGESVAR T	B	B	B	A+	A+	B+	B	B
312818106075	YOKESH D	A+	A	B+	O	O	A+	A+	A

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 06** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 106-B.E. Electronics and Communication Engineering

	Subject Code - >	EC8004	EC8095	EC8611	EC8651	EC8652	EC8661	EC8681	EC8691	GE8076	HS8581	MG8591
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817106001	AAKASHRAGHAV A	A	B+	O	A	A	O	O	A		O	A
312817106002	AARTHI A	O	O	O	O	O	O	O	O	O	O	O
312817106003	AARTHI M	O	A+	O	A+	A+	O	O	A		O	A+
312817106005	ABINAYA M	O	O	O	O	O	O	O	O	O	O	O
312817106006	ABISHEK PRASANNAA R B	A+	B+	O	A	A	O	A+	B		O	B+
312817106007	ADHISIVAN P	A+	A+	O	A+	A	O	O	A+		O	A
312817106008	ANSIN JOSE T	B	B+	O	B	B	O	O	A		O	A+
312817106009	ARAVIND S	O	A+	O	A+	A+	O	O	A+		O	A+
312817106010	ARCHANA K	O	O	O	O	O	O	O	O	O	O	O
312817106011	ARUN KUMAR B	B+	B+	O	B	B+	O	A+	A		A+	A
312817106012	ASHIKA BEHAM A	O	O	O	O	O	O	O	O	O	O	O
312817106013	ASHVITHA R	O	A+	O	A+	A	O	O	A+		O	A+
312817106014	ASWINI C	O	O	O	O	O	O	O	O	O	O	O
312817106015	BALAJI B	B+	B+	O	B	A	O	O	B+		O	A
312817106016	BALAJI S	A	A+	O	B+	A+	O	O	A		O	A+
312817106017	BAVANI M	O	O	O	O	O	O	O	O	O	O	O
312817106018	BAVITHRA VALLI NAYAGI P	O	O	O	O	O	O	O	O	O	O	O
312817106020	BHARGAVI U	B+	A+	O	A+	A+	O	O	A+		O	A+
312817106021	C APARAJITHA	A+	A	O	A+	A+	O	O	A+		O	A+
312817106022	CHINRASU R	A+	A+	O	A+	A	O	O	A+		O	A+
312817106023	DEEPIKA B	O	O	O	O	O	O	O	O	O	O	O
312817106024	DEEPIKA R	O	O	O	O	O	O	O	A+	O	O	O
312817106026	DHANASREE M	B	B	A+	B	B	A+	A+	B		A+	B
312817106027	DINESH R	A	A	O	A	A	O	O	A		O	B+
312817106028	DINESH Y	O	O	O	O	O	O	O	O	O	O	O
312817106029	DINESH KUMAR A	A	A	O	A+	A+	O	O	A+	O	O	A
312817106030	GANAPATHARINI G	O	O	O	O	O	O	O	O	O	O	O
312817106031	GODHANDARAMAN B	O	A+	O	A+	A+	O	O	A+		O	A+
312817106032	GOKUL A	O	A	O	A+	A+	O	O	A+		O	A+
312817106033	GOKUL M	B	B	A+	B	B	A+	A+	B		A+	B
312817106034	GOWTHAM G	A+	A	O	A	A	O	O	A		O	A
312817106035	HARI HARA SUDHAN S	B	B	A+	B	B	A+	A+	B		A+	B
312817106036	HARISH GOWTHAM S	O	O	O	O	O	O	O	O	O	O	O
312817106037	HARISUTHAN M	A	A	O	B+	A	O	O	A+		O	A+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312817106039	ISHWARIYA R	O	O	O	O	O	O	O	O	O	O	O
312817106040	ISHWARYA M	O	O	O	O	O	O	O	O	O	O	O
312817106041	JAGADEESAN P	A	A+	O	A+	O	O	O	A+	O	O	A+
312817106042	JAGANATH R	B	B	O	A	B+	O	O	A		O	B+
312817106044	JAYAKUMAR J	A+	A+	O	O	O	O	O	O	O	O	A+
312817106046	JAYAPRAKASH S	B	B+	O	B	B+	O	O	B+		O	B+
312817106047	JENIFER RACHEL D	O	O	O	O	O	O	O	A+		O	O
312817106048	JOHNDAVID D	B	B	O	B	B	O	O	B		O	A
312817106049	JUHI RAMALA R	O	O	O	O	O	O	O	O	O	O	O
312817106050	KALAIYARASI G	O	A+	O	A+	A+	O	O	A+		O	A+
312817106052	KANIMOZHI S	O	O	O	O	O	O	O	A+	O	O	O
312817106053	KARPAGAM S	A	B	A+	A	B+	A+	A+	A		A+	A
312817106054	KUMARAN J	O	A+	O	O	O	O	O	A+	O	O	O
312817106055	KUMARAN S	B+	B	A+	B	B	A+	A+	B		O	B+
312817106056	LAVANYA R	O	A+	O	O	O	O	O	O	O	O	O
312817106057	LOKESH V	A	A+	O	A+	A+	O	O	O	O	O	A+
312817106058	MADHUMITHA M	O	A	O	A+	A+	O	O	A+		O	A+
312817106059	MAGESH R	A+	A+	O	A+	A	O	O	A+		O	O
312817106060	MAHALAKSHMI J	O	O	O	O	O	O	O	O	O	O	O
312817106062	MATHESHWARAAN K	A+	A+	O	A+	A+	O	O	A	O	O	A+
312817106063	MOHANA PRIYA P	O	O	O	O	O	O	O	O		O	O
312817106064	MONISA R	O	O	O	O	O	O	O	O	O	O	O
312817106066	NANDHA BALAN M	O	O	O	O	O	O	O	O	O	O	O
312817106067	NANDHINI P	O	A+	O	A+	A+	O	O	A		O	A+
312817106068	NISHITHA K	O	A+	O	A+	A+	O	O	A+		O	A+
312817106070	PREETHIGA S	A+	A+	O	A+	A+	O	O	A+		O	A+
312817106071	PREETHI SRIVANI D R	O	A+	O	A+	A+	O	O	A+		O	A+
312817106072	PREEVITHA S	O	O	O	O	O	O	O	O	O	O	O
312817106073	PRIYANKA H	O	A+	O	A+	A+	O	O	A+		O	A+
312817106074	PRIYANKA S	O	O	O	O	O	O	O	O		O	O
312817106075	RADHAKRISHNAN R	B	B	A+	B	B	A+	A+	B		A+	B
312817106076	RAGHUL K	B+	B+	O	B+	A	O	O	B+		O	A
312817106077	RAJALAKSHMI V	O	O	O	O	O	O	O	O	O	O	O
312817106079	RAJESH P	B	B	A+	B	B	A+	A+	B		A+	B
312817106080	RAJESH R	B	B	A+	B	B	A+	A+	B		A+	B
312817106081	RAMACHANDRAN M	B	B	A+	B	B	A+	A+	B		A+	B
312817106083	RIFANAPARVIN S	O	O	O	O	O	O	O	O		O	O
312817106084	ROHIN K	O	A	O	A	A+	O	O	B+		O	B+
312817106085	ROHIT V	O	O	O	O	O	O	O	O	O	O	O
312817106086	ROKESH R	B+	B+	O	A	B+	O	O	A		O	A

312817106087	SABARI JANATH BP	A+	A+	O	B+	A+	O	O	B+		O	B+
312817106088	SADHANA M	A	A	O	A+	O	O	O	O	O	O	O
312817106089	SAHITHYA V	A+	A+	O	A+	A+	O	O	A+		O	A+
312817106090	SAMUVEL JAKAB R	O	A+	O	A+	O	O	O	O		O	O
312817106091	SANGAVI B	O	O	O	O	O	O	O	O		O	O
312817106092	SANGEEETHA A	O	O	O	O	O	O	O	O		O	O
312817106093	SANGEETHA I	O	A+	O	A+	A+	O	O	A+		O	A+
312817106094	SANTHOSH KUMAR S	O	A	O	A	A+	O	O	A		O	A+
312817106095	SELVAM P	B	B	A+	B	B	A+	A+	B		A+	B
312817106096	SHALINI PRIYA S	O	O	O	O	O	O	O	O		O	O
312817106097	SHAM SUNDAR P	B	B+	O	B+	B	O	O	A		O	B
312817106098	SHRUTHI S	O	O	O	O	O	O	O	O	O	O	O
312817106099	SIDDHARTHAN M	A	A	O	A+	A+	O	O	A+		O	A+
312817106100	SIVAYOGESH R	B	B	A+	B	B	O	A+	B		A+	B
312817106101	SOWMIYA S	A+	A+	O	A+	A+	O	O	A+		O	A
312817106102	SOWMIYASHREE K	O	A+	O	A+	A+	O	O	A+		O	A+
312817106103	SRIDHAR V	A	A	O	B	A+	O	O	B		O	A
312817106105	SUBHASREE PS	O	A+	O	A+	A+	O	O	A+	O	O	A+
312817106107	SWETHA K	O	A+	O	A+	A+	O	O	A		O	A+
312817106109	THARUN AVR	B	B	A+	B	B	A+	A+	B		A+	B
312817106110	THIRUPATHI S	O	O	O	O	O	O	O	O		O	O
312817106111	UDHAYA KUMAR U	B	B	A+	B	B	O	A+	B		A+	B
312817106112	VAISHNAVI P	A+	A	O	A+	A+	O	O	A+	O	O	A
312817106113	VANMATHI M	O	O	O	O	O	O	O	O		O	O
312817106114	VASANTHAKUMAR N	B	B	A+	B	B+	A+	A+	B		O	B+
312817106115	VASANTHA RAJA G	O	A+	O	A+	A+	O	O	A+		O	A+
312817106116	VASHIKA E	O	A+	O	A+	A+	O	O	A+		O	A+
312817106117	VIGNESH R	B+	A	O	A	A+	O	O	A		O	A
312817106118	VIJAY RAJ VG	B	B	A+	B	B	A+	A+	B		A+	B
312817106119	VINOTHINI P	A+	B+	O	B+	A	O	A+	A		O	A
312817106121	YUVAN VARSHITH A	B	B	O	B	B	A+	A+	B		O	B
312817106301	DEVENDRAN R	A	A	O	B+	A	O	O	A		O	B+
312817106302	DHANALAKSHMI G	A	B+	O	A	A	O	O	A		O	A

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 07** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 106-B.E. Electronics and Communication Engineering

	Subject Code - >	EC6011	EC6014	EC6701	EC6702	EC6703	EC6711	EC6712	IT6005
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312813106079	PRABHAVATHI J				UA				
312813106083	PRIYADHARSHINI M				U	D			
312813106126	VAITHYA SAMBANDHAM K				U				
312813106133	VIJAY N	UA							
312814106013	BALACHANDAR N			UA	U				U
312814106041	KARTHIK K					E			
312814106079	PRAVEEN KUMAR D				U	U			
312814106085	RANJITH KUMAR G					U			
312814106088	SABARIDEVI R				U				
312814106089	SAI PRASHANTH S				U				U
312814106094	SIVA SURIYAN S				D				
312814106102	TAMILARASI N			UA	U	UA			
312814106111	YOGALAKSHMI K				UA				
312815106010	ARCHANA R			U					
312815106031	DIVAKAR K	UA	UA	UA	UA	UA			
312815106037	GANESH R					D			
312815106053	KALAIVANAN R				U				
312815106057	KARTHIKEYAN K	UA	UA	UA	UA	UA			UA
312815106071	MAHARAJAN M	U		E		E			
312815106074	MANIPRIYAN G S	UA	UA	UA	UA	UA			UA
312815106081	MINOLTAN M				U				
312815106088	NISHANTHRAJ C		UA	UA	UA	UA			UA
312815106094	PRABHU N J				E				
312815106102	PRIYANKA D J					UA			
312815106106	PUNITH KUMAR M				U				
312815106107	RAGUL R S	U	E	U	U				U
312815106129	SHALINI D	E		U	U				
312815106130	SHANMUGA SUNDAR A			U	UA				
312815106139	SUGUMAR D				UA				
312815106302	MOHAMED THOUFIK S			U	U				U
312816106002	ABDUL WAHID S	C	D	B	E	D	C	S	C
312816106003	ABINAYA V	B	B	C	C	D	A	S	C
312816106005	ABITHA A	C	B	A	D	D	A	S	C
312816106006	ACHUTHA KJ	B	B	S	C	B	A	S	B
312816106007	AISHWARYA B	B	A	A	A	A	S	S	A

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312816106008	AJITH KUMAR A	D	C	B	C	D	B	A	C
312816106009	AJITH PRIYADHARSHAN M	D	E	C	D	E	B	S	E
312816106010	AKSHAYA P	C	C	A	C	E	S	S	C
312816106011	AMBBIGA J	B	D	C	C	B	S	S	A
312816106012	AMIRTHA T	A	A	B	B	A	S	S	A
312816106013	ANAND KUMAR M	C	U	U	E	E	C	B	E
312816106014	ARAVINDASAGAR V G	B	E	C	C	C	S	A	C
312816106015	ARIHARAN T	B	C	D	C	C	B	A	E
312816106016	ARUN P	U	U	U	U	U	B	A	U
312816106017	ARUNARANI S	C	D	D	C	B	S	S	C
312816106018	ARUN KUMAR V	E	D	C	C	C	B	A	B
312816106020	ASWINI J	A	B	C	B	B	S	S	B
312816106021	BALA HARIHARAN V	D	E	D	U	U	B	A	C
312816106022	BALAKUMAR E	UA	U	U	U	E	D	B	U
312816106023	BALAKUMAR M	B	C	C	D	B	C	S	D
312816106024	BARATHWAJ N	C	D	D	U	E	C	A	D
312816106025	BLESSY PRIYANKA D	B	C	C	C	B	A	S	B
312816106026	CHANTHINI DEVI S	B	C	C	B	C	S	S	B
312816106028	DEEPAN S	D	E	D	C	D	C	S	C
312816106029	DHANDA PANI L S	E	E	E	E	E	B	A	C
312816106030	DHANESH KUMAR B	E	C	C	D	C	B	B	E
312816106031	DHARSHINI M	C	C	D	C	B	A	A	B
312816106032	DINESH KUMAR K R	E	D	U	U	D	C	A	E
312816106033	DIVYA J	C	C	C	U	B	S	S	B
312816106034	ELAKKIYA A	U	E	E	U	U	B	A	E
312816106035	ELANGOVAN B	E	U	E	U	D	A	S	E
312816106036	ENIYA C	D	E	C	C	C	A	S	C
312816106037	ESWARI R	C	B	C	C	B	S	S	B
312816106038	GANGADEVI G	B	B	A	B	B	A	S	A
312816106039	GOGUL RAJA K P	E	E	D	E	D	B	A	B
312816106040	GOKULALAKSHMI T	B	A	A	C	A	S	S	A
312816106041	GOWSALYA B	C	C	B	C	C	S	S	B
312816106042	GURUVISHWA U	C	C	C	D	D	B	S	C
312816106043	HARINI E	E	D	E	U	C	B	S	D
312816106044	HEMANTHA RAJAN V	C	C	B	C	A	S	S	A
312816106045	JAYAKARTHIGA A	U	C	C	B	B	S	S	C
312816106046	JAYAPRIYA R	C	C	C	B	A	C	S	A
312816106047	KALAIVANI B	E	E	E	U	D	D	A	E
312816106048	KARTHIKA M	A	B	B	B	B	A	S	B
312816106049	KARTHIKA R	E	E	E	E	E	D	S	C

312816106050	KARTHIKEYAN A	B	D	D	C	D	D	A	U
312816106051	KARTHIKEYAN S K	E	D	E	E	C	B	S	D
312816106052	KAVIYA K	U	E	U	E	U	D	S	E
312816106053	KHARISHMA MALINI A	E	E	C	E	E	C	A	E
312816106054	KIRUBAKARAN L	C	B	C	C	C	A	S	C
312816106055	KRISHNA PRASATH M	E	E	E	E	E	D	A	E
312816106056	KUMARESAN D	U	E	U	D	D	D	A	E
312816106057	LOGESHKUMAR K	E	E	D	D	C	C	S	C
312816106058	LOKESHWARAN KP	U	U	U	E	C	C	S	E
312816106059	MANINATHAN D	E	E	D	U	C	C	S	C
312816106060	MANO LAKSHATHA SRINIVASA MOORTHI S	B	E	C	U	C	A	S	C
312816106061	MOHAMED UMAR S	D	U	E	U	E	C	S	E
312816106062	MONISHA P	B	C	C	C	B	A	S	B
312816106063	MURUGAN K	U	E	E	U	E	D	A	E
312816106064	MUTHAMIL R	C	D	D	E	D	S	S	A
312816106065	NAVEENKUMAR B	E	U	U	U	D	C	A	E
312816106066	NAVEENKUMAR S (19-11-1998)	E	B	C	E	B	C	A	C
312816106067	NAVEENKUMAR S (17-12-1998)	E	U	U	U	U	C	A	U
312816106068	NETHAJI J	E	E	U	U	E	B	A	U
312816106069	NIHAARIKA S	E	D	U	E	C	B	A	U
312816106070	PALANISAMY V	D	B	B	C	B	A	S	B
312816106071	PAVITHRA P	C	B	A	B	B	S	S	A
312816106072	PELLETI HARSHAVARDHAN	C	D	C	E	D	B	A	E
312816106073	PRASANNAVADHANI P	B	C	D	E	E	A	S	D
312816106074	PRAVEENA C	U	U	U	U	U	C	B	U
312816106075	PRAVEEN JOHNRAJ A	E	U	E	U	U	B	A	U
312816106077	RAJALAKSHMI R	C	C	C	U	C	S	S	C
312816106078	RAJARAM M	E	U	U	U	U	C	B	E
312816106079	RAJASHREE R	C	C	C	D	D	A	S	C
312816106080	RAMYA P	C	C	A	C	A	A	S	B
312816106081	RANJITHA B	A	C	B	C	B	S	S	C
312816106082	RATHNA PRIYA S	C	C	C	C	C	S	S	C
312816106083	RAVISANKAR K	E	D	D	E	E	A	B	E
312816106084	REEHADESH SUGANTHAN R	E	E	B	E	C	D	A	C
312816106085	REKHA K	A	B	A	C	A	B	S	A

312816106086	ROJITH NESAR XN	D	E	C	D	D	A	S	E
312816106088	SANDHYA M	B	C	A	C	C	B	S	B
312816106089	SANGEETHA G	C	C	A	B	A	A	S	A
312816106090	SANTHIYA A	C	B	C	B	A	S	A	B
312816106091	SANTHOSH B	C	D	E	E	D	A	S	E
312816106092	SARANYA P	C	C	C	C	D	S	S	C
312816106093	SARATHKUMAR K	E	E	U	E	A	B	A	U
312816106094	SASTHINI K	B	C	B	C	B	S	S	B
312816106095	SATHIYA S	C	D	D	C	B	B	S	D
312816106097	SERMAKANI V	C	B	B	C	A	S	S	B
312816106098	SHALINI J	C	B	C	C	C	S	S	C
312816106099	SHARAVANANN U	U	E	U	U	U	D	B	E
312816106100	SHEELA RANI P	C	E	D	D	C	B	S	D
312816106101	SHIVA N	E	E	E	E	E	C	A	E
312816106102	SHIVA RAMAN P	D	C	E	C	C	B	A	E
312816106103	SIVVA DHARINI V	C	B	B	B	B	S	S	C
312816106104	SOUNDARA PANDIAN M	U	U	U	U	U	C	B	U
312816106105	SOWMIYA G	D	D	C	C	C	A	S	D
312816106107	SREENIDHI RV	B	B	C	B	C	S	S	B
312816106108	SRINITHI S	C	C	B	C	B	S	S	B
312816106109	SUBASH S	B	B	A	B	A	S	S	A
312816106110	SUNDHARAM A	E	C	C	C	B	C	A	C
312816106111	SURAJIT CHAKRABORTY A	C	B	C	C	C	B	A	C
312816106113	SURYA K	C	B	B	C	C	A	A	B
312816106115	TAMILSELVAN D	E	C	D	C	C	D	A	U
312816106116	TEJA D V S	C	C	E	C	E	D	A	U
312816106118	UMAMAHESWARI P	B	B	B	D	C	A	S	C
312816106119	VAITHEALINGHAM A	B	C	D	E	C	B	S	C
312816106120	VANI M	B	C	B	C	B	B	A	C
312816106121	VARADHARAJAN J	D	E	E	U	C	D	S	E
312816106122	VENGADESWARI P	C	B	C	C	A	S	S	B
312816106123	VENKATRAMAN M	E	E	D	E	U	C	A	D
312816106124	VIDHYA R	B	C	B	E	C	A	A	C
312816106125	VIGNESH H	E	D	E	E	B	B	A	D
312816106126	VIGNESHWAR S	C	C	C	C	B	C	B	C
312816106128	VISHAL RAJ Y	E	E	E	D	C	B	S	D
312816106129	VISITHRA R	D	C	B	D	C	S	S	C
312816106130	VISWA M	E	E	E	U	U	C	A	E
312816106131	YOGESWARAN K	E	E	D	E	D	C	A	C

312816106132	YOGITHA P	B	B	A	C	B	S	S	B
312816106133	YUVARAJ N	D	E	C	E	D	C	S	D
312816106134	ZAKKIRIYAZSHAA B	B	C	C	D	C	B	S	C

EC6302 **DIGITAL ELECTRONICS** **L T P C**
3 0 0 3

OBJECTIVES:

- To introduce basic postulates of Boolean algebra and shows the correlation between Boolean expressions
- To introduce the methods for simplifying Boolean expressions
- To outline the formal procedures for the analysis and design of combinational circuits
- and sequential circuits
- To introduce the concept of memories and programmable logic devices.
- To illustrate the concept of synchronous and asynchronous sequential circuits

UNIT I MINIMIZATION TECHNIQUES AND LOGIC GATES 9

Minimization Techniques: Boolean postulates and laws – De-Morgan"s Theorem - Principle of Duality - Boolean expression - Minimization of Boolean expressions — Minterm – Maxterm - Sum of Products (SOP) – Product of Sums (POS) – Karnaugh map Minimization – Don't care conditions – Quine - Mc Cluskey method of minimization.

Logic Gates: AND, OR, NOT, NAND, NOR, Exclusive–OR and Exclusive–NOR Implementations of Logic Functions using gates, NAND–NOR implementations – Multi
level gate implementations- Multi output gate implementations. TTL and CMOS Logic and their characteristics – Tristate gates

UNIT II COMBINATIONAL CIRCUITS 9

Design procedure – Half adder – Full Adder – Half subtractor – Full subtractor – Parallel binary adder, parallel binary Subtractor – Fast Adder - Carry Look Ahead adder – Serial Adder/Subtractor - BCD adder – Binary Multiplier – Binary Divider - Multiplexer/ Demultiplexer – decoder - encoder – parity checker – parity generators – code converters - Magnitude Comparator.

UNIT III SEQUENTIAL CIRCUITS 9

Latches, Flip-flops - SR, JK, D, T, and Master-Slave – Characteristic table and equation –Application table – Edge triggering – Level Triggering – Realization of one flip flop using other flip flops – serial adder/subtractor- Asynchronous Ripple or serial counter – Asynchronous Up/Down counter - Synchronous counters – Synchronous Up/Down counters – Programmable counters – Design of Synchronous counters: state diagram- State table –State minimization –State assignment - Excitation table and maps-Circuit implementation - Modulo–n counter, Registers – shift registers - Universal shift registers – Shift register counters – Ring counter – Shift counters - Sequence generators.

UNIT IV MEMORY DEVICES 9

Classification of memories – ROM - ROM organization - PROM – EPROM – EEPROM –EAPROM, RAM – RAM organization – Write operation – Read operation – Memory cycle - Timing wave forms – Memory decoding – memory expansion – Static RAM Cell- Bipolar RAM cell – MOSFET RAM cell – Dynamic RAM cell –Programmable Logic Devices – Programmable Logic Array (PLA) - Programmable Array Logic (PAL) – Field Programmable Gate Arrays (FPGA) - Implementation of combinational logic circuits using ROM, PLA, PAL

UNIT V SYNCHRONOUS AND ASYNCHRONOUS SEQUENTIAL CIRCUITS 9

Synchronous Sequential Circuits: General Model – Classification – Design – Use of Algorithmic State Machine – Analysis of Synchronous Sequential Circuits

Asynchronous Sequential Circuits: Design of fundamental mode and pulse mode circuits –

Incompletely specified State Machines – Problems in Asynchronous Circuits – Design of Hazard Free Switching circuits. Design of Combinational and Sequential circuits using VERILOG.

TOTAL: 45 PERIODS

OUTCOMES:

Students will be able to:

- Analyze different methods used for simplification of Boolean expressions.
- Design and implement Combinational circuits.
- Design and implement synchronous and asynchronous sequential circuits.
- Write simple HDL codes for the circuits.

TEXT BOOK:

1. M. Morris Mano, “Digital Design”, 4th Edition, Prentice Hall of India Pvt. Ltd., 2008 / Pearson Education (Singapore) Pvt. Ltd., New Delhi, 2003.

REFERENCES:

1. John F.Wakerly, “Digital Design”, Fourth Edition, Pearson/PHI, 2008
2. John.M Yarbrough, “Digital Logic Applications and Design”, Thomson Learning, 2006.
3. Charles H.Roth. “Fundamentals of Logic Design”, 6th Edition, Thomson Learning, 2013.
4. Donald P.Leach and Albert Paul Malvino, “Digital Principles and Applications”, 6th Edition, TMH, 2006.
5. Thomas L. Floyd, “Digital Fundamentals”, 10th Edition, Pearson Education Inc, 2011
6. Donald D.Givone, “Digital Principles and Design”, TMH, 2003.

EC6501 DIGITAL COMMUNICATION L T P C

3 0 0 3

OBJECTIVES:

- To know the principles of sampling & quantization
- To study the various waveform coding schemes
- To learn the various baseband transmission schemes
- To understand the various Band pass signaling schemes
- To know the fundamentals of channel coding

UNIT I SAMPLING & QUANTIZATION 9

Low pass sampling – Aliasing- Signal Reconstruction-Quantization - Uniform & non-uniform quantization - quantization noise - Logarithmic Companding of speech signal- PCM - TDM

UNIT II WAVEFORM CODING 9

Prediction filtering and DPCM - Delta Modulation - ADPCM & ADM principles-Linear Predictive Coding

UNIT III BASEBAND TRANSMISSION 9

Properties of Line codes- Power Spectral Density of Unipolar / Polar RZ & NRZ – Bipolar NRZ - Manchester- ISI – Nyquist criterion for distortionless transmission – Pulse shaping – Correlative coding - Mary schemes – Eye pattern - Equalization

UNIT IV DIGITAL MODULATION SCHEME 9

Geometric Representation of signals - Generation, detection, PSD & BER of Coherent BPSK, BFSK & QPSK - QAM - Carrier Synchronization - structure of Non-coherent Receivers - Principle of DPSK.

UNIT V ERROR CONTROL CODING 9

Channel coding theorem - Linear Block codes - Hamming codes - Cyclic codes - Convolutional codes - Vitterbi Decoder

TOTAL: 45 PERIODS

OUTCOMES:

Upon completion of the course, students will be able to

- Design PCM systems
- Design and implement base band transmission schemes
- Design and implement band pass signaling schemes
- Analyze the spectral characteristics of band pass signaling schemes and their noise performance
- Design error control coding schemes

TEXT BOOK:

1. S. Haykin, “Digital Communications”, John Wiley, 2005

REFERENCES:

1. B. Sklar, “Digital Communication Fundamentals and Applications”, 2nd Edition, Pearson Education, 2009
2. B.P.Lathi, “Modern Digital and Analog Communication Systems” 3rd Edition, Oxford University Press 2007.
3. H P Hsu, Schaum Outline Series - “Analog and Digital Communications”, TMH 2006
4. J.G Proakis, “Digital Communication”, 4th Edition, Tata Mc Graw Hill Company, 2001.

EC6504 MICROPROCESSOR AND MICROCONTROLLER L T P C
3 0 0 3

OBJECTIVES:

The student should be made to:

- Study the Architecture of 8086 microprocessor.
- Learn the design aspects of I/O and Memory Interfacing circuits.
- Study about communication and bus interfacing.
- Study the Architecture of 8051 microcontroller.

UNIT I THE 8086 MICROPROCESSOR 9

Introduction to 8086 – Microprocessor architecture – Addressing modes - Instruction set and assembler directives – Assembly language programming – Modular Programming - Linking and Relocation - Stacks - Procedures – Macros – Interrupts and interrupt service routines – Byte and String Manipulation.

UNIT II 8086 SYSTEM BUS STRUCTURE 9

8086 signals – Basic configurations – System bus timing –System design using 8086 – IO programming – Introduction to Multiprogramming – System Bus Structure - Multiprocessor

configurations – Coprocessor, Closely coupled and loosely Coupled configurations – Introduction to advanced processors.

UNIT III I/O INTERFACING 9

Memory Interfacing and I/O interfacing - Parallel communication interface – Serial communication interface – D/A and A/D Interface - Timer – Keyboard /display controller – Interrupt controller – DMA controller – Programming and applications Case studies: Traffic Light control, LED display , LCD display, Keyboard display interface and Alarm Controller.

UNIT IV MICROCONTROLLER 9

Architecture of 8051 – Special Function Registers(SFRs) - I/O Pins Ports and Circuits - Instruction set - Addressing modes - Assembly language programming.

UNIT V INTERFACING MICROCONTROLLER 9

Programming 8051 Timers - Serial Port Programming - Interrupts Programming – LCD & Keyboard Interfacing - ADC, DAC & Sensor Interfacing - External Memory Interface- Stepper Motor and Waveform generation.

TOTAL: 45 PERIODS

OUTCOMES:

At the end of the course, the student should be able to:

- Design and implement programs on 8086 microprocessor.
- Design I/O circuits.
- Design Memory Interfacing circuits.
- Design and implement 8051 microcontroller based systems.

TEXT BOOKS:

1. Yu-Cheng Liu, Glenn A.Gibson, “Microcomputer Systems: The 8086 / 8088 Family - Architecture, Programming and Design”, Second Edition, Prentice Hall of India, 2007.
2. Mohamed Ali Mazidi, Janice Gillispie Mazidi, Rolin McKinlay, “The 8051 Microcontroller and Embedded Systems: Using Assembly and C”, Second Edition, Pearson education, 2011.

REFERENCE:

1. Doughlas V.Hall, “Microprocessors and Interfacing, Programming and Hardware”,TMH,2012

EC6601 VLSI DESIGN L T P C
3 0 0 3

OBJECTIVES:

- In this course, the MOS circuit realization of the various building blocks that is common to any microprocessor or digital VLSI circuit is studied.
- Architectural choices and performance tradeoffs involved in designing and realizing the circuits in CMOS technology are discussed.
- The main focus in this course is on the transistor circuit level design and realization for digital operation and the issues involved as well as the topics covered are quite distinct from those encountered in courses on CMOS Analog IC design.

UNIT I MOS TRANSISTOR PRINCIPLE 9

NMOS and PMOS transistors, Process parameters for MOS and CMOS, Electrical properties of CMOS circuits and device modeling, Scaling principles and fundamental limits, CMOS inverter scaling, propagation delays, Stick diagram, Layout diagrams

UNIT II COMBINATIONAL LOGIC CIRCUITS 9

Examples of Combinational Logic Design, Elmore‟s constant, Pass transistor Logic, Transmission gates, static and dynamic CMOS design, Power dissipation – Low power design principles

UNIT III SEQUENTIAL LOGIC CIRCUITS 9

Static and Dynamic Latches and Registers, Timing issues, pipelines, clock strategies, Memory architecture and memory control circuits, Low power memory circuits, Synchronous and Asynchronous design

UNIT IV DESIGNING ARITHMETIC BUILDING BLOCKS 9

Data path circuits, Architectures for ripple carry adders, carry look ahead adders, High speed adders, accumulators, Multipliers, dividers, Barrel shifters, speed and area tradeoff

UNIT V IMPLEMENTATION STRATEGIES 9

Full custom and Semi custom design, Standard cell design and cell libraries, FPGA building block architectures, FPGA interconnect routing procedures.

TOTAL: 45 PERIODS

OUTCOMES:

Upon completion of the course, students should

- Explain the basic CMOS circuits and the CMOS process technology.
- Discuss the techniques of chip design using programmable devices.
- Model the digital system using Hardware Description Language.

TEXTBOOKS:

1. Jan Rabaey, Anantha Chandrakasan, B.Nikolic, "Digital Integrated Circuits: A Design Perspective", Second Edition, Prentice Hall of India, 2003.
2. M.J. Smith, "Application Specific Integrated Circuits", Addisson Wesley, 1997

REFERENCES:

1. N.Weste, K.Eshraghian, "Principles of CMOS VLSI Design", Second Edition, Addision Wesley 1993
2. R.Jacob Baker, Harry W.LI., David E.Boyee, "CMOS Circuit Design, Layout and Simulation", Prentice Hall of India 2005
3. A.Pucknell, Kamran Eshraghian, "BASIC VLSI Design", Third Edition, Prentice Hall of India, 2007.

EC6602 ANTENNA AND WAVE PROPAGATION L T P C

3 0 0 3

OBJECTIVES:

- To give insight of the radiation phenomena.
- To give a thorough understanding of the radiation characteristics of different types of antennas
- To create awareness about the different types of propagation of radio waves at different frequencies

UNIT I FUNDAMENTALS OF RADIATION 9

Definition of antenna parameters – Gain, Directivity, Effective aperture, Radiation Resistance, Band width, Beam width, Input Impedance. Matching – Baluns, Polarization mismatch, Antenna noise temperature, Radiation from oscillating dipole, Half wave dipole. Folded dipole, Yagi array.

UNIT II APERTURE AND SLOT ANTENNAS 9

Radiation from rectangular apertures, Uniform and Tapered aperture, Horn antenna , Reflector antenna , Aperture blockage , Feeding structures , Slot antennas ,Microstrip antennas – Radiation mechanism – Application ,Numerical tool for antenna analysis

UNIT III ANTENNA ARRAYS 9

N element linear array, Pattern multiplication, Broadside and End fire array – Concept of Phased arrays, Adaptive array, Basic principle of antenna Synthesis-Binomial array

UNIT IV SPECIAL ANTENNAS 9

Principle of frequency independent antennas –Spiral antenna, Helical antenna, Log periodic. Modern antennas- Reconfigurable antenna, Active antenna, Dielectric antennas, Electronic band gap structure and applications, Antenna Measurements-Test Ranges, Measurement of Gain, Radiation pattern, Polarization, VSWR

UNIT V PROPAGATION OF RADIO WAVES **9**

Modes of propagation , Structure of atmosphere , Ground wave propagation , Tropospheric propagation , Duct propagation, Troposcatter propagation , Flat earth and Curved earth concept Sky wave propagation – Virtual height, critical frequency , Maximum usable frequency – Skip distance, Fading , Multi hop propagation

TOTAL: 45 PERIODS

OUTCOMES:

Upon completion of the course, students will be able to:

- Explain the various types of antennas and wave propagation.
- Write about the radiation from a current element.
- Analyze the antenna arrays, aperture antennas and special antennas such as frequency independent and broad band

TEXT BOOK:

1. John D Kraus," Antennas for all Applications", 3rd Edition, Mc Graw Hill, 2005.

REFERENCES:

1. Edward C.Jordan and Keith G.Balmain" Electromagnetic Waves and Radiating Systems" Prentice Hall of India, 2006
2. R.E.Collin,"Antennas and Radiowave Propagation", Mc Graw Hill 1985.
3. Constantine.A.Balanis "Antenna Theory Analysis and Design", Wiley Student Edition, 2006.
4. Rajeswari Chatterjee, "Antenna Theory and Practice" Revised Second Edition New Age International Publishers, 2006.
5. S. Drabowitch, "Modern Antennas" Second Edition, Springer Publications, 2007.
6. Robert S.Elliott "Antenna Theory and Design" Wiley Student Edition, 2006.
7. H.Sizun "Radio Wave Propagation for Telecommunication Applications", First Indian Reprint, Springer Publications, 2007.

EC6701 **RF AND MICROWAVE ENGINEERING** **L T P C**
3 0 0 3

OBJECTIVES:

- To inculcate understanding of the basics required for circuit representation of RF networks.
- To deal with the issues in the design of microwave amplifier.
- To instill knowledge on the properties of various microwave components.
- To deal with the microwave generation and microwave measurement techniques

UNIT I TWO PORT NETWORK THEORY **9**

Review of Low frequency parameters: Impedance, Admittance, Hybrid and ABCD parameters, Different types of interconnection of Two port networks, High Frequency parameters, Formulation of S parameters, Properties of S parameters, Reciprocal and lossless Network, Transmission matrix, RF behavior of Resistors, Capacitors and Inductors.

UNIT II RF AMPLIFIERS AND MATCHING NETWORKS **9**

Characteristics of Amplifiers, Amplifier power relations, Stability considerations, Stabilization Methods, Noise Figure, Constant VSWR, Broadband, High power and Multistage Amplifiers, Impedance matching using discrete components, Two component matching Networks, Frequency response and quality factor, T and Pi Matching Networks, Microstrip Line Matching Networks.

UNIT III PASSIVE AND ACTIVE MICROWAVE DEVICES **9**

Terminations, Attenuators, Phase shifters, Directional couplers, Hybrid Junctions, Power dividers,

Circulator, Isolator, Impedance matching devices: Tuning screw, Stub and quarter wave transformers. Crystal and Schottkey diode detector and mixers, PIN diode switch, Gunn diode oscillator, IMPATT diode oscillator and amplifier, Varactor diode, Introduction to MIC.

UNIT IV MICROWAVE GENERATION 9

Review of conventional vacuum Triodes, Tetrodes and Pentodes, High frequency effects in vacuum Tubes, Theory and application of Two cavity Klystron Amplifier, Reflex Klystron oscillator, Traveling wave tube amplifier, Magnetron oscillator using Cylindrical, Linear, Coaxial Voltage tunable Magnetrons, Backward wave Crossed field amplifier and oscillator.

UNIT V MICROWAVE MEASUREMENTS 9

Measuring Instruments : Principle of operation and application of VSWR meter, Power meter, Spectrum analyzer, Network analyzer, Measurement of Impedance, Frequency, Power, VSWR, Q-factor, Dielectric constant, Scattering coefficients, Attenuation, S-parameters.

TOTAL: 45 PERIODS

OUTCOMES:

Upon completion of the course, students will be able to:

- Explain the active & passive microwave devices & components used in Microwave communication systems.
- Analyze the multi- port RF networks and RF transistor amplifiers.
- Generate Microwave signals and design microwave amplifiers.
- Measure and analyze Microwave signal and parameters.

TEXT BOOKS:

1. Reinhold Ludwig and Gene Bogdanov, “RF Circuit Design: Theory and Applications”, Pearson Education Inc., 2011
2. Robert E Colin, “Foundations for Microwave Engineering”, John Wiley & Sons Inc, 2005

REFERENCES:

1. David M. Pozar, “Microwave Engineering”, Wiley India (P) Ltd, New Delhi, 2008.
2. Thomas H Lee, “Planar Microwave Engineering: A Practical Guide to Theory, Measurements and Circuits”, Cambridge University Press, 2004.
3. Mathew M Radmanesh, “RF and Microwave Electronics”, Prentice Hall, 2000.
4. Annapurna Das and Sisir K Das, “Microwave Engineering”, Tata Mc Graw Hill Publishing Company Ltd, New Delhi, 2005.

EC6702 OPTICAL COMMUNICATION AND NETWORKS L T P C
3 0 0 3

OBJECTIVES:

- To Facilitate the knowledge about optical fiber sources and transmission techniques
- To Enrich the idea of optical fiber networks algorithm such as SONET/SDH and optical CDMA.
- To Explore the trends of optical fiber measurement systems.

UNIT I INTRODUCTION TO OPTICAL FIBERS 9

Evolution of fiber optic system- Element of an Optical Fiber Transmission link-- Total internal reflection-Acceptance angle –Numerical aperture – Skew rays Ray Optics-Optical Fiber Modes and Configurations -Mode theory of Circular Wave guides- Overview of Modes-Key Modal concepts-Linearly Polarized Modes -Single Mode Fibers-Graded Index fiber structure.

UNIT II SIGNAL DEGRADATION OPTICAL FIBERS 9

Attenuation - Absorption losses, Scattering losses, Bending Losses, Core and Cladding losses, Signal Distortion in Optical Wave guides-Information Capacity determination -Group Delay-Material Dispersion, Wave guide Dispersion, Signal distortion in SM fibers-Polarization Mode dispersion, Intermodal dispersion, Pulse Broadening in GI fibers-Mode Coupling -Design Optimization of SM fibers-RI profile and cut-off wavelength.

UNIT III FIBER OPTICAL SOURCES AND COUPLING 9

Direct and indirect Band gap materials-LED structures -Light source materials -Quantum efficiency and LED power, Modulation of a LED, lasers Diodes-Modes and Threshold condition -Rate equations -External Quantum efficiency -Resonant frequencies -Laser Diodes, Temperature effects, Introduction to Quantum laser, Fiber amplifiers- Power Launching and coupling, Lencing schemes, Fiber -to- Fiber joints, Fiber splicing-Signal to Noise ratio , Detector response time.

UNIT IV FIBER OPTIC RECEIVER AND MEASUREMENTS 9

Fundamental receiver operation, Pre amplifiers, Error sources – Receiver Configuration– Probability of Error – Quantum limit.Fiber Attenuation measurements- Dispersion measurements – Fiber Refractive index profile measurements – Fiber cut- off Wave length Measurements – Fiber Numerical Aperture Measurements – Fiber diameter measurements.

UNIT V OPTICAL NETWORKS AND SYSTEM TRANSMISSION 9

Basic Networks – SONET / SDH – Broadcast – and –select WDM Networks –Wavelength Routed Networks – Non linear effects on Network performance –-Link Power budget -Rise time budget-Noise Effects on System Performance-Operational Principles of WDM Performance of WDM + EDFA system – Solutions – Optical CDMA – Ultra High Capacity Networks**.**

TOTAL: 45 PERIODS

OUTCOMES:

Upon completion of the course, students will be able to:

- Discuss the various optical fiber modes, configurations and various signal degradation factors associated with optical fiber.
- Explain the various optical sources and optical detectors and their use in the optical communication system.
- Analyze the digital transmission and its associated parameters on system performance.

TEXT BOOKS:

1. Gerd Keiser, "Optical Fiber Communication" Mc Graw -Hill International, 4th Edition., 2010.
2. John M. Senior , “Optical Fiber Communication”, Second Edition, Pearson Education, 2007.

REFERENCES:

1. Ramaswami, Sivarajan and Sasaki “Optical Networks”, Morgan Kaufmann, 2009.
2. J.Senior, "Optical Communication, Principles and Practice", Prentice Hall of India, 3rd Edition, 2008.
3. J.Gower, "Optical Communication System", Prentice Hall of India, 2001.

EC6703 EMBEDDED AND REAL TIME SYSTEMS L T P C

3 0 0 3

OBJECTIVES:

The student should be made to:

- Learn the architecture and programming of ARM processor.
- Be familiar with the embedded computing platform design and analysis.
- Be exposed to the basic concepts of real time Operating system.
- Learn the system design techniques and networks for embedded systems

UNIT I INTRODUCTION TO EMBEDDED COMPUTING AND ARM PROCESSORS 9

Complex systems and micro processors– Embedded system design process –Design example: Model train controller- Instruction sets preliminaries - ARM Processor – CPU: programming input and output-supervisor mode, exceptions and traps – Co-processors- Memory system mechanisms – CPU performance- CPU power consumption.

UNIT II EMBEDDED COMPUTING PLATFORM DESIGN 9

The CPU Bus-Memory devices and systems–Designing with computing platforms – consumer electronics architecture – platform-level performance analysis - Components for embedded programs-Models of programs- Assembly, linking and loading – compilation techniques- Program level performance analysis – Software performance optimization – Program level energy and power analysis and optimization – Analysis and optimization of program size- Program validation and testing.

UNIT III PROCESSES AND OPERATING SYSTEMS 9

Introduction – Multiple tasks and multiple processes – Multirate systems- Preemptive real-time operating systems- Priority based scheduling- Interprocess communication mechanisms – Evaluating operating system performance- power optimization strategies for processes – Example Real time operating systems- POSIX-Windows CE.

UNIT V SYSTEM DESIGN TECHNIQUES AND NETWORKS 9

Design methodologies- Design flows - Requirement Analysis – Specifications-System analysis and architecture design – Quality Assurance techniques- Distributed embedded systems – MPSoCs and shared memory multiprocessors.

UNIT V CASE STUDY 9

Data compressor - Alarm Clock - Audio player - Software modem-Digital still camera - Telephone answering machine-Engine control unit – Video accelerator.

TOTAL: 45 PERIODS

OUTCOMES:

Upon completion of the course, students will be able to:

- Describe the architecture and programming of ARM processor.
- Outline the concepts of embedded systems
- Explain the basic concepts of real time Operating system design.
- Use the system design techniques to develop software for embedded systems
- Differentiate between the general purpose operating system and the real time operating system
- Model real-time applications using embedded-system concepts

TEXT BOOK:

1. Marilyn Wolf, “Computers as Components - Principles of Embedded Computing System Design”, Third Edition “Morgan Kaufmann Publisher (An imprint from Elsevier), 2012.

REFERENCES:

1. Jonathan W.Valvano, “Embedded Microcomputer Systems Real Time Interfacing”, Third Edition Cengage Learning, 2012.
2. David. E. Simon, “An Embedded Software Primer”, 1st Edition, Fifth Impression, Addison-Wesley Professional, 2007.
3. Raymond J.A. Buhr, Donald L.Bailey, “An Introduction to Real-Time Systems- From Design to Networking with C/C++”, Prentice Hall, 1999.
4. C.M. Krishna, Kang G. Shin, “Real-Time Systems”, International Editions, Mc Graw Hill 1997
5. K.V.K.K.Prasad, “Embedded Real-Time Systems: Concepts, Design & Programming”, Dream Tech Press, 2005.
6. Sriram V Iyer, Pankaj Gupta, “Embedded Real Time Systems Programming”, Tata Mc Graw Hill, 2004.

2017 Regulations

		L	T	P	C
EC8392	**DIGITAL ELECTRONICS**	**3**	**0**	**0**	**3**

OBJECTIVE

S:

- To present the Digital fundamentals, Boolean algebra and its applications in digital systems
- To familiarize with the design of various combinational digital circuits using logic gates
- To introduce the analysis and design procedures for synchronous and asynchronous sequential circuits
- To explain the various semiconductor memories and related technology
- To introduce the electronic circuits involved in the making of logic gates

UNIT I DIGITAL FUNDAMENTALS 9

Number Systems – Decimal, Binary, Octal, Hexadecimal, 1_s and 2_s complements, Codes – Binary, BCD, Excess 3, Gray, Alphanumeric codes, Boolean theorems, Logic gates, Universal gates, Sum of products and product of sums, Minterms and Maxterms, Karnaugh map Minimization and Quine-McCluskey method of minimization.

UNIT II COMBINATIONAL CIRCUIT DESIGN 9

Design of Half and Full Adders, Half and Full Subtractors, Binary Parallel Adder – Carry look ahead Adder, BCD Adder, Multiplexer, Demultiplexer, Magnitude Comparator, Decoder, Encoder, Priority Encoder.

UNIT III SYNCHRONOUS SEQUENTIAL CIRCUITS 9

Flip flops – SR, JK, T, D, Master/Slave FF – operation and excitation tables, Triggering of FF, Analysis and design of clocked sequential circuits – Design - Moore/Mealy models, state minimization, state assignment, circuit implementation – Design of Counters- Ripple Counters, Ring Counters, Shift registers, Universal Shift Register.

UNIT IV ASYNCHRONOUS SEQUENTIAL CIRCUITS 9

Stable and Unstable states, output specifications, cycles and races, state reduction, race free assignments, Hazards, Essential Hazards, Pulse mode sequential circuits, Design of Hazard free circuits.

UNIT V MEMORY DEVICES AND DIGITAL INTEGRATED CIRCUITS 9

Basic memory structure – ROM -PROM – EPROM – EEPROM –EAPROM, RAM – Static and dynamic RAM - Programmable Logic Devices – Programmable Logic Array (PLA) - Programmable Array Logic (PAL) – Field Programmable Gate Arrays (FPGA) - Implementation of combinational logic circuits using PLA, PAL.

Digital integrated circuits: Logic levels, propagation delay, power dissipation, fan-out and fan-in, noise margin, logic families and their characteristics-RTL, TTL, ECL, CMOS

TOTAL: 45 PERIODS

OUTCOMES:

At the end of the course:

- Use digital electronics in the present contemporary world
- Design various combinational digital circuits using logic gates
- Do the analysis and design procedures for synchronous and asynchronous sequential circuits

- Use the semiconductor memories and related technology
- Use electronic circuits involved in the design of logic gates

TEXT BOOK:

1. M. Morris Mano and Michael D. Ciletti, -Digital Design‖, 5th Edition, Pearson, 2014.

REFERENCES:

1. Charles H.Roth. -Fundamentals of Logic Design‖, 6th Edition, Thomson Learning, 2013.
2. Thomas L. Floyd, -Digital Fundamentals‖, 10th Edition, Pearson Education Inc, 2011
3. S.Salivahanan and S.Arivazhagan-Digital Electronics‖, Ist Edition, Vikas Publishing House pvt Ltd, 2012.
4. Anil K.Maini -Digital Electronics‖, Wiley, 2014.
5. A.Anand Kumar -Fundamentals of Digital Circuits‖, 4th Edition, PHI Learning Private Limited, 2016.
6. Soumitra Kumar Mandal – Digital Electronics‖, McGraw Hill Education Private Limited, 2016.

EC8453 LINEAR INTEGRATED CIRCUITS 3 0 0 3

OBJECTIVES:

- To introduce the basic building blocks of linear integrated circuits
- To learn the linear and non-linear applications of operational amplifiers
- To introduce the theory and applications of analog multipliers and PLL
- To learn the theory of ADC and DAC
- To introduce the concepts of waveform generation and introduce some special function ICs

UNIT I BASICS OF OPERATIONAL AMPLIFIERS 9

Current mirror and current sources, Current sources as active loads, Voltage sources, Voltage References, BJT Differential amplifier with active loads, Basic information about op-amps – Ideal Operational Amplifier - General operational amplifier stages -and internal circuit diagrams of IC 741, DC and AC performance characteristics, slew rate, Open and closed loop configurations – JFET Operational Amplifiers – LF155 and TL082.

UNIT II APPLICATIONS OF OPERATIONAL AMPLIFIERS 9

Sign Changer, Scale Changer, Phase Shift Circuits, Voltage Follower, V-to-I and I-to-V converters, adder, subtractor, Instrumentation amplifier, Integrator, Differentiator, Logarithmic amplifier, Antilogarithmic amplifier, Comparators, Schmitt trigger, Precision rectifier, peak detector, clipper

and clamper, Low-pass, high-pass and band-pass Butterworth filters.

UNIT III ANALOG MULTIPLIER AND PLL 9

Analog Multiplier using Emitter Coupled Transistor Pair - Gilbert Multiplier cell – Variable transconductance technique, analog multiplier ICs and their applications, Operation of the basic PLL, Closed loop analysis, Voltage controlled oscillator, Monolithic PLL IC 565, application of PLL for AM detection, FM detection, FSK modulation and demodulation and Frequency synthesizing and clock synchronisation.

UNIT IV ANALOG TO DIGITAL AND DIGITAL TO ANALOG CONVERTERS 9

Analog and Digital Data Conversions, D/A converter – specifications - weighted resistor type, R-2R Ladder type, Voltage Mode and Current-Mode *R - 2R* Ladder types - switches for D/A converters, high speed sample-and-hold circuits, A/D Converters – specifications - Flash type - Successive Approximation type - Single Slope type – Dual Slope type - A/D Converter using Voltage-to-Time Conversion - Over-sampling A/D Converters, Sigma – Delta converters.

UNIT V WAVEFORM GENERATORS AND SPECIAL FUNCTION ICS 9

Sine-wave generators, Multivibrators and Triangular wave generator, Saw-tooth wave generator, ICL8038 function generator, Timer IC 555, IC Voltage regulators – Three terminal fixed and adjustable voltage regulators - IC 723 general purpose regulator - Monolithic switching regulator, Low Drop – Out(LDO) Regulators - Switched capacitor filter IC MF10, Frequency to Voltage and Voltage to Frequency converters, Audio Power amplifier, Video Amplifier, Isolation Amplifier, Opto-couplers and fibre optic IC.

TOTAL:45 PERIODS

OUTCOMES:

Upon completion of the course, the student should be able to:

- Design linear and non linear applications of OP – AMPS
- Design applications using analog multiplier and PLL
- Design ADC and DAC using OP – AMPS
- Generate waveforms using OP – AMP Circuits
- Analyze special function ICs

TEXT BOOKS:

1. D.Roy Choudhry, Shail Jain, -Linear Integrated Circuits‖, New Age International Pvt. Ltd., 2018, Fifth Edition. (Unit I – V)
2. Sergio Franco, -Design with Operational Amplifiers and Analog Integrated Circuits‖, 4th Edition, Tata Mc Graw-Hill, 2016 (Unit I – V)

REFERENCES:

1. Ramakant A. Gayakwad, -OP-AMP and Linear ICs‖, 4th Edition, Prentice Hall / Pearson Education, 2015.
2. Robert F.Coughlin, Frederick F.Driscoll, -Operational Amplifiers and Linear Integrated Circuits‖, Sixth Edition, PHI, 2001.
3. B.S.Sonde, -System design using Integrated Circuits‖ , 2nd Edition, New Age Pub, 2001.
4. Gray and Meyer, -Analysis and Design of Analog Integrated Circuits‖, Wiley International,5th Edition, 2009.
5. William D.Stanley, -Operational Amplifiers with Linear Integrated Circuits‖, Pearson Education,4th Edition,2001.
6. S.Salivahanan & V.S. Kanchana Bhaskaran, -Linear Integrated Circuits‖, TMH,2nd Edition, 4th Reprint, 2016.

EC8501	DIGITAL COMMUNICATION	L	T	P	C
		3	0	0	3

OBJECTIVES:

- To know the principles of sampling & quantization
- To study the various waveform coding schemes
- To learn the various baseband transmission schemes
- To understand the various band pass signaling schemes
- To know the fundamentals of channel coding

UNIT I INFORMATION THEORY 9

Discrete Memoryless source, Information, Entropy, Mutual Information - Discrete Memoryless channels – Binary Symmetric Channel, Channel Capacity - Hartley - Shannon law - Source coding theorem - Shannon - Fano & Huffman codes.

UNIT II WAVEFORM CODING & REPRESENTATION 9

Prediction filtering and DPCM - Delta Modulation - ADPCM & ADM principles-Linear Predictive Coding- Properties of Line codes- Power Spectral Density of Unipolar / Polar RZ & NRZ – Bipolar NRZ - Manchester

UNIT III BASEBAND TRANSMISSION & RECEPTION 9

ISI – Nyquist criterion for distortion less transmission – Pulse shaping – Correlative coding - Eye pattern – Receiving Filters- Matched Filter, Correlation receiver, Adaptive Equalization

UNIT IV DIGITAL MODULATION SCHEME 9

Geometric Representation of signals - Generation, detection, PSD & BER of Coherent BPSK, BFSK & QPSK - QAM - Carrier Synchronization - Structure of Non-coherent Receivers - Principle of DPSK.

UNIT V ERROR CONTROL CODING 9

Channel coding theorem - Linear Block codes - Hamming codes - Cyclic codes - Convolutional codes - Viterbi Decoder.

TOTAL:45 PERIODS

OUTCOMES:

Upon completion of the course, the student should be able to

- Design PCM systems
- Design and implement base band transmission schemes
- Design and implement band pass signaling schemes
- Analyze the spectral characteristics of band pass signaling schemes and their noise performance
- Design error control coding schemes

TEXT BOOK:

1. S. Haykin, -Digital Communications‖, John Wiley, 2005 (Unit I –V)

REFERENCES

1. B. Sklar, -Digital Communication Fundamentals and Applications‖, 2nd Edition, Pearson Education, 2009
2. B.P.Lathi, -Modern Digital and Analog Communication Systems‖ 3rd Edition, Oxford University Press 2007.
3. H P Hsu, Schaum Outline Series - -Analog and Digital Communications‖, TMH 2006

4. J.G Proakis, -Digital Communication, 4th Edition, Tata Mc Graw Hill Company, 2001.

EC8691 MICROPROCESSORS AND MICROCONTROLLERS L T P C
3 0 0 3

OBJECTIVES:

- To understand the Architecture of 8086 microprocessor.
- To learn the design aspects of I/O and Memory Interfacing circuits.
- To interface microprocessors with supporting chips.
- To study the Architecture of 8051 microcontroller.
- To design a microcontroller based system

UNIT I THE 8086 MICROPROCESSOR 9

Introduction to 8086 – Microprocessor architecture – Addressing modes - Instruction set and assembler directives – Assembly language programming – Modular Programming - Linking and Relocation - Stacks - Procedures – Macros – Interrupts and interrupt service routines – Byte and String Manipulation.

UNIT II 8086 SYSTEM BUS STRUCTURE 9

8086 signals – Basic configurations – System bus timing –System design using 8086 – I/O programming – Introduction to Multiprogramming – System Bus Structure – Multiprocessor configurations – Coprocessor, Closely coupled and loosely Coupled configurations – Introduction to advanced processors.

UNIT III I/O INTERFACING 9

Memory Interfacing and I/O interfacing - Parallel communication interface – Serial communication interface – D/A and A/D Interface - Timer – Keyboard /display controller – Interrupt controller – DMA controller – Programming and applications Case studies: Traffic Light control, LED display , LCD display, Keyboard display interface and Alarm Controller.

UNIT IV MICROCONTROLLER 9

Architecture of 8051 – Special Function Registers(SFRs) - I/O Pins Ports and Circuits - Instruction set - Addressing modes - Assembly language programming.

UNIT V INTERFACING MICROCONTROLLER 9

Programming 8051 Timers - Serial Port Programming - Interrupts Programming – LCD & Keyboard Interfacing - ADC, DAC & Sensor Interfacing - External Memory Interface- Stepper Motor and Waveform generation - Comparison of Microprocessor, Microcontroller, PIC and ARM processors

TOTAL: 45 PERIODS

OUTCOMES:

At the end of the course, the students should be able to:

- Understand and execute programs based on 8086 microprocessor.
- Design Memory Interfacing circuits.
- Design and interface I/O circuits.
- Design and implement 8051 microcontroller based systems.

TEXT BOOKS:

1. Yu-Cheng Liu, Glenn A.Gibson, -Microcomputer Systems: The 8086 / 8088 Family - Architecture, Programming and Design‖, Second Edition, Prentice Hall of India, 2007. (UNIT I-III)
2. Mohamed Ali Mazidi, Janice Gillispie Mazidi, Rolin McKinlay, -The 8051 Microcontroller and Embedded Systems: Using Assembly and C‖, Second Edition, Pearson education, 2011. (UNIT IV-V)

REFERENCES:

1. Doughlas V.Hall, -Microprocessors and Interfacing, Programming and Hardware‖,TMH,2012
2. A.K.Ray,K.M.Bhurchandi, "Advanced Microprocessors and Peripherals" 3rd edition, Tata McGrawHill, 2012

EC8095	VLSI DESIGN	L	T	P	C
		3	0	0	3

OBJECTIVES:

- Study the fundamentals of CMOS circuits and its characteristics.
- Learn the design and realization of combinational & sequential digital circuits.
- Architectural choices and performance tradeoffs involved in designing and realizing the circuits in CMOS technology are discussed
- Learn the different FPGA architectures and testability of VLSI circuits.

UNIT I INTRODUCTION TO MOS TRANSISTOR 9

MOS Transistor, CMOS logic, Inverter, Pass Transistor, Transmission gate, Layout Design Rules, Gate Layouts, Stick Diagrams, Long-Channel I-V Charters tics, C-V Charters tics, Non ideal I-V Effects, DC Transfer characteristics, RC Delay Model, Elmore Delay, Linear Delay Model, Logical effort, Parasitic Delay, Delay in Logic Gate, Scaling.

UNIT II COMBINATIONAL MOS LOGIC CIRCUITS 9

Circuit Families: Static CMOS, Ratioed Circuits, Cascode Voltage Switch Logic, Dynamic Circuits, Pass Transistor Logic, Transmission Gates, Domino, Dual Rail Domino, CPL, DCVSPG, DPL, Circuit Pitfalls.

Power: Dynamic Power, Static Power, Low Power Architecture.

UNIT III SEQUENTIAL CIRCUIT DESIGN 9

Static latches and Registers, Dynamic latches and Registers, Pulse Registers, Sense Amplifier Based Register, Pipelining, Schmitt Trigger, Monostable Sequential Circuits, Astable Sequential Circuits.

Timing Issues : Timing Classification Of Digital System, Synchronous Design.

UNIT IV DESIGN OF ARITHMETIC BUILDING BLOCKS AND SUBSYSTEM 9

Arithmetic Building Blocks: Data Paths, Adders, Multipliers, Shifters, ALUs, power and speed tradeoffs, Case Study: Design as a tradeoff.

Designing Memory and Array structures: Memory Architectures and Building Blocks, Memory Core, Memory Peripheral Circuitry.

UNIT V IMPLEMENTATION STRATEGIES AND TESTING 9

FPGA Building Block Architectures, FPGA Interconnect Routing Procedures. Design for Testability: *Ad Hoc* Testing, Scan Design, BIST, IDDQ Testing, Design for Manufacturability, Boundary Scan.

TOTAL : 45 PERIODS

OUTCOMES:

UPON COMPLETION OF THE COURSE, STUDENTS SHOULD be ABLE TO

- Realize the concepts of digital building blocks using MOS transistor.
- Design combinational MOS circuits and power strategies.
- Design and construct Sequential Circuits and Timing systems.
- Design arithmetic building blocks and memory subsystems.
- Apply and implement FPGA design flow and testing.

TEXT BOOKS:

1. Neil H.E. Weste, David Money Harris -CMOS VLSI Design: A Circuits and Systems Perspective‖, 4th Edition, Pearson , 2017 (UNIT I,II,V)
2. Jan M. Rabaey ,Anantha Chandrakasan, Borivoje. Nikolic, ‖Digital Integrated Circuits:A Design perspective‖, Second Edition , Pearson , 2016.(UNIT III,IV)

REFERENCES

1. M.J. Smith, -Application Specific Integrated Circuits‖, Addisson Wesley, 1997
2. Sung-Mo kang, Yusuf leblebici, Chulwoo Kim -CMOS Digital Integrated Circuits:Analysis & Design‖,4th edition McGraw Hill Education,2013
3. Wayne Wolf, -Modern VLSI Design: System On Chip‖, Pearson Education, 2007
4. R.Jacob Baker, Harry W.LI., David E.Boyee, -CMOS Circuit Design, Layout and Simulation‖, Prentice Hall of India 2005.

EEE

2019-20

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
B.E. ELECTRONICS AND COMMUNICATION ENGINEERING
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM
I - VIII SEMESTERS CURRICULA AND SYLLABI

SEMESTER I

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	31	19	0	12	25

SEMESTER II

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8253	Physics for Electronics Engineering	BS	3	3	0	0	3
4.	BE8254	Basic Electrical and Instrumentation Engineering	ES	3	3	0	0	3
5.	EC8251	Circuit Analysis	PC	4	4	0	0	4
6.	EC8252	Electronic Devices	PC	3	3	0	0	3
PRACTICALS								
7.	EC8261	Circuits and Devices Laboratory	PC	4	0	0	4	2
8.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
			TOTAL	29	21	0	8	25

SEMESTER III

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8352	Linear Algebra and Partial Differential Equations	BS	4	4	0	0	4
2.	EC8393	Fundamentals of Data Structures In C	ES	3	3	0	0	3
3.	EC8351	Electronic Circuits- I	PC	3	3	0	0	3
4.	EC8352	Signals and Systems	PC	4	4	0	0	4
5.	EC8392	Digital Electronics	PC	3	3	0	0	3
6.	EC8391	Control Systems Engineering	PC	3	3	0	0	3
PRACTICALS								
7.	EC8381	Fundamentals of Data Structures in C Laboratory	ES	4	0	0	4	2
8.	EC8361	Analog and Digital Circuits Laboratory	PC	4	0	0	4	2
9.	HS8381	Interpersonal Skills/Listening &Speaking	EEC	2	0	0	2	1
			TOTAL	30	20	0	10	25

SEMESTER IV

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8451	Probability and Random Processes	BS	4	4	0	0	4
2.	EC8452	Electronic Circuits II	PC	3	3	0	0	3
3.	EC8491	Communication Theory	PC	3	3	0	0	3
4.	EC8451	Electromagnetic Fields	PC	4	4	0	0	4
5.	EC8453	Linear Integrated Circuits	PC	3	3	0	0	3
6.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
PRACTICALS								
7.	EC8461	Circuits Design and Simulation Laboratory	PC	4	0	0	4	2
8.	EC8462	Linear Integrated Circuits Laboratory	PC	4	0	0	4	2
			TOTAL	28	20	0	8	24

SEMESTER V

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	EC8501	Digital Communication	PC	3	3	0	0	3
2.	EC8553	Discrete-Time Signal Processing	PC	4	4	0	0	4
3.	EC8552	Computer Architecture and Organization	PC	3	3	0	0	3
4.	EC8551	Communication Networks	PC	3	3	0	0	3
5.		Professional Elective I	PE	3	3	0	0	3
6.		Open Elective I	OE	3	3	0	0	3
PRACTICALS								
7.	EC8562	Digital Signal Processing Laboratory	PC	4	0	0	4	2
8.	EC8561	Communication Systems Laboratory	PC	4	0	0	4	2
9.	EC8563	Communication Networks Laboratory	PC	4	0	0	4	2
			TOTAL	31	19	0	12	25

SEMESTER VI

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	EC8691	Microprocessors and Microcontrollers	PC	3	3	0	0	3
2.	EC8095	VLSI Design	PC	3	3	0	0	3
3.	EC8652	Wireless Communication	PC	3	3	0	0	3
4.	MG8591	Principles of Management	HS	3	3	0	0	3
5.	EC8651	Transmission Lines and RF Systems	PC	3	3	0	0	3
6.		Professional Elective -II	PE	3	3	0	0	3
PRACTICALS								
7.	EC8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
8.	EC8661	VLSI Design Laboratory	PC	4	0	0	4	2
9.	EC8611	Technical Seminar	EEC	2	0	0	2	1
10.	HS8581	Professional Communication	EEC	2	0	0	2	1
			TOTAL	30	18	0	12	24

SEMESTER III

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6351	Transforms and Partial Differential Equations	3	1	0	4
2.	EE6352	Electrical Engineering and Instrumentation	3	1	0	4
3.	EC6301	Object Oriented Programming and Data Structures	3	0	0	3
4.	EC6302	Digital Electronics	3	0	0	3
5.	EC6303	Signals and Systems	3	1	0	4
6.	EC6304	Electronic Circuits- I	3	1	0	4
PRACTICAL						
7.	EC6311	Analog and Digital Circuits Laboratory	0	0	3	2
8.	EC6312	OOPS and Data Structures Laboratory	0	0	3	2
		TOTAL	18	4	6	26

SEMESTER IV

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6451	Probability and Random Processes	3	1	0	4
2.	EC6401	Electronic Circuits II	3	0	0	3
3.	EC6402	Communication Theory	3	0	0	3
4.	EC6403	Electromagnetic Fields	3	1	0	4
5.	EC6404	Linear Integrated Circuits	3	0	0	3
6.	EC6405	Control System Engineering	3	0	0	3
PRACTICAL						
7.	EC6411	Circuit and Simulation Integrated Laboratory	0	0	3	2
8.	EC6412	Linear Integrated Circuit Laboratory	0	0	3	2
9.	EE6461	Electrical Engineering and Control System Laboratory	0	0	3	2
		TOTAL	18	2	9	26

SEMESTER V

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	EC6501	Digital Communication	3	0	0	3
2.	EC6502	Principles of Digital Signal Processing	3	1	0	4
3.	EC6503	Transmission Lines and Wave Guides	3	1	0	4
4.	GE6351	Environmental Science and Engineering	3	0	0	3
5.	EC6504	Microprocessor and Microcontroller	3	0	0	3
PRACTICAL						
6.	EC6511	Digital Signal Processing Laboratory	0	0	3	2
7.	EC6512	Communication System Laboratory	0	0	3	2
8.	EC6513	Microprocessor and Microcontroller Laboratory	0	0	3	2
		TOTAL	15	2	9	23

SEMESTER VI

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MG6851	Principles of Management	3	0	0	3
2.	CS6303	Computer Architecture	3	0	0	3
3.	CS6551	Computer Networks	3	0	0	3
4.	EC6601	VLSI Design	3	0	0	3
5.	EC6602	Antenna and Wave propagation	3	0	0	3
6.		Elective I	3	0	0	3
PRACTICAL						
7.	EC6611	Computer Networks Laboratory	0	0	3	2
8.	EC6612	VLSI Design Laboratory	0	0	3	2
9.	GE6674	Communication and Soft Skills - Laboratory Based	0	0	4	2
		TOTAL	18	0	10	24

SEMESTER VII

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	EC6701	RF and Microwave Engineering	3	0	0	3
2.	EC6702	Optical Communication and Networks	3	0	0	3
3.	EC6703	Embedded and Real Time Systems	3	0	0	3
4.		Elective II	3	0	0	3
5.		Elective III	3	0	0	3
6.		Elective IV	3	0	0	3
PRACTICAL						
7.	EC6711	Embedded Laboratory	0	0	3	2
8.	EC6712	Optical and Microwave Laboratory	0	0	3	2
		TOTAL	18	0	6	22

SEMESTER VIII

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	EC6801	Wireless Communication	3	0	0	3
2.	EC6802	Wireless Networks	3	0	0	3
3.		Elective V	3	0	0	3
4.		Elective VI	3	0	0	3
PRACTICAL						
5.	EC6811	Project Work	0	0	12	6
		TOTAL	12	0	12	18

TOTAL CREDITS:189

SEMESTER VI

ELECTIVE – I

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	EC6001	Medical Electronics	3	0	0	3
2.	EC6002	Advanced Digital Signal Processing	3	0	0	3
3.	CS6401	Operating Systems	3	0	0	3
4.	EC6003	Robotics and Automation	3	0	0	3

SEMESTER VI

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	EC6651	Communication Engineering	3	0	0	3
2.	EE6601	Solid State Drives	3	0	0	3
3.	EE6602	Embedded Systems	3	0	0	3
4.	EE6603	Power System Operation and Control	3	0	0	3
5.	EE6604	Design of Electrical Machines	3	1	0	4
6.		Elective - I	3	0	0	3
PRACTICAL						
7.	EE6611	Power Electronics and Drives Laboratory	0	0	3	2
8.	EE6612	Microprocessors and Microcontrollers Laboratory	0	0	3	2
9.	EE6613	Presentation Skills and Technical Seminar	0	0	2	1
		TOTAL	**18**	**1**	**8**	**24**

SEMESTER VII

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	EE6701	High Voltage Engineering	3	0	0	3
2.	EE6702	Protection and Switchgear	3	0	0	3
3.	EE6703	Special Electrical Machines	3	0	0	3
4.	MG6851	Principles of Management	3	0	0	3
5.		Elective – II	3	0	0	3
6.		Elective – III	3	0	0	3
PRACTICAL						
7.	EE6711	Power System Simulation Laboratory	0	0	3	2
8.	EE6712	Comprehension	0	0	2	1
		TOTAL	**18**	**0**	**5**	**21**

SEMESTER VIII

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	EE6801	Electric Energy Generation, Utilization and Conservation	3	0	0	3
2.		Elective – IV	3	0	0	3
3.		Elective – V	3	0	0	3
PRACTICAL						
4.	EE6811	Project Work	0	0	12	6
		TOTAL	**9**	**0**	**12**	**15**

TOTAL CREDITS: 189

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
B.E. ELECTRICAL AND ELECTRONICS ENGINEERING
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM
I TO VIII SEMESTERS CURRICULA & SYLLABI

SEMESTER I

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	31	19	0	12	25

SEMESTER II

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8253	Physics for Electronics Engineering	BS	3	3	0	0	3
4.	BE8252	Basic Civil and Mechanical Engineering	ES	4	4	0	0	4
5.	EE8251	Circuit Theory	PC	4	2	2	0	3
6.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
PRACTICALS								
7.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8.	EE8261	Electric Circuits Laboratory	PC	4	0	0	4	2
			TOTAL	30	20	2	8	25

SEMESTER III

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
2.	EE8351	Digital Logic Circuits	PC	4	2	2	0	3
3.	EE8391	Electromagnetic Theory	PC	4	2	2	0	3
4.	EE8301	Electrical Machines - I	PC	4	2	2	0	3
5.	EC8353	Electron Devices and Circuits	ES	3	3	0	0	3
6.	ME8792	Power Plant Engineering	ES	3	3	0	0	3
PRACTICALS								
7.	EC8311	Electronics Laboratory	ES	4	0	0	4	2
8.	EE8311	Electrical Machines Laboratory - I	PC	4	0	0	4	2
			TOTAL	30	16	6	8	23

SEMESTER IV

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8491	Numerical Methods	BS	4	4	0	0	4
2.	EE8401	Electrical Machines - II	PC	4	2	2	0	3
3.	EE8402	Transmission and Distribution	PC	3	3	0	0	3
4.	EE8403	Measurements and Instrumentation	PC	3	3	0	0	3
5.	EE8451	Linear Integrated Circuits and Applications	PC	3	3	0	0	3
6.	IC8451	Control Systems	PC	5	3	2	0	4
PRACTICALS								
7.	EE8411	Electrical Machines Laboratory - II	PC	4	0	0	4	2
8.	EE8461	Linear and Digital Integrated Circuits Laboratory	PC	4	0	0	4	2
9.	EE8412	Technical Seminar	EEC	2	0	0	2	1
			TOTAL	32	18	4	10	25

SEMESTER V

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	EE8501	Power System Analysis	PC	3	3	0	0	3
2.	EE8551	Microprocessors and Microcontrollers	PC	3	3	0	0	3
3.	EE8552	Power Electronics	PC	3	3	0	0	3
4.	EE8591	Digital Signal Processing	PC	4	2	2	0	3
5.	CS8392	Object Oriented Programming	ES	3	3	0	0	3
6.		Open Elective I*	OE	3	3	0	0	3
PRACTICALS								
7.	EE8511	Control and Instrumentation Laboratory	PC	4	0	0	4	2
8.	HS8581	Professional Communication	EEC	2	0	0	2	1
9.	CS8383	Object Oriented Programming Laboratory	ES	4	0	0	4	2
			TOTAL	**29**	**17**	**2**	**10**	**23**

SEMESTER VI

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	EE8601	Solid State Drives	PC	3	3	0	0	3
2.	EE8602	Protection and Switchgear	PC	3	3	0	0	3
3.	EE8691	Embedded Systems	ES	3	3	0	0	3
4.		Professional Elective I	PE	3	3	0	0	3
5.		Professional Elective II	PE	3	3	0	0	3
PRACTICALS								
6.	EE8661	Power Electronics and Drives Laboratory	PC	4	0	0	4	2
7.	EE8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
8.	EE8611	Mini Project	EEC	4	0	0	4	2
			TOTAL	**27**	**15**	**0**	**12**	**21**

SEMESTER VII

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	EE8701	High Voltage Engineering	PC	3	3	0	0	3
2.	EE8702	Power System Operation and Control	PC	3	3	0	0	3
3.	EE8703	Renewable Energy Systems	PC	3	3	0	0	3
4.		Open Elective II*	OE	3	3	0	0	3
5.		Professional Elective III	PE	3	3	0	0	3
6.		Professional Elective IV	PE	3	3	0	0	3
PRACTICALS								
7.	EE8711	Power System Simulation Laboratory	PC	4	0	0	4	2
8.	EE8712	Renewable Energy Systems Laboratory	PC	4	0	0	4	2
			TOTAL	**26**	**18**	**0**	**8**	**22**

SEMESTER VIII

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.		Professional Elective V	PE	3	3	0	0	3
2.		Professional Elective VI	PE	3	3	0	0	3
PRACTICALS								
3.	EE8811	Project Work	EEC	20	0	0	20	10
			TOTAL	**26**	**6**	**0**	**20**	**16**

TOTAL NO. OF CREDITS: 180

*Course from the curriculum of other UG Programmes.

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 07** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 105-B.E. Electrical and Electronics Engineering

	Subject Code - >	EE6004	EE6008	EE6701	EE6702	EE6703	EE6711	EE6712	EI6704	MG6851
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312813105002	AKASH IMMANUVEL R S	U		UA	U	UA				
312813105018	JOHAN HERBET F			UA	U					
312814105002	ALEX A G				U					
312814105007	BALASAKTHI B					U				
312814105030	SURESHKUMAR A			UA	U					
312815105003	ANIRUTH R				UA					
312815105007	BELSIN T				U					
312815105008	BHARATH B				U					
312815105011	EBIN JOSE J		U	E	U	E				
312815105013	JAYAKARAN B				UA					
312815105020	KUTRALISWARAN T		U		U	U			U	UA
312815105024	NATARAJAN K		UA							
312815105025	PADALEESWARAN N		U	UA	U	U			U	U
312815105026	PASUPATHY V		UA	UA	U	U				
312815105034	RATHISH RAHUL N		UA	UA	UA	UA			U	
312816105001	ABARNA E	U	U	E	U	U	A	A		E
312816105002	ABINESH SK	C	D	E	E	D	UA	A		E
312816105003	AL SHEIK ALAVUDEEN B	C	C	C	C	A	A	S		U
312816105004	ARUN BHARATHI K	U	U	D	U	D	C	S		U
312816105005	ASHWIN KUMAR S	D	D	C	U	C	C	A		E
312816105006	BHARATHI SELVAN B	U	D	U	U	E	C	A		U
312816105007	DINESH KUMAR M	E	C	C	C	B	S	S		E
312816105008	ELAMPARITHI S	U	E	U	U	E	UA	B		U
312816105009	EMIMAL L	B	B	C	C	B	S	S		B
312816105011	GOVARDHANAN K	D	B	E	E	B	A	S		C
312816105012	GUNASEKARAN G	C	B	C	D	A	S	S		C
312816105013	HARISH B	C	A	B	B	A	S	S		C
312816105014	JAGADESAN D	B	B	D	C	B	S	S		D
312816105015	JEEVA S	C	C	U	U	C	B	S		E
312816105016	KANISHKA A	B	B	C	C	A	S	S		C
312816105017	LOGESH S	UA	UA	UA	U	U	UA	B		U
312816105018	MANIKANDAN D (11-12-1997)	U	U	U	UA	U	UA	B		U
312816105019	MANIKANDAN D (06-11-1998)	U	U	U	UA	E	C	B		U

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312816105021	MUKUNTH M	E	C	U	U	U	A	S		U
312816105022	PRAKASH S	E	E	U	C	C	A	S		E
312816105023	RAGUL T	C	C	E	C	B	B	S		C
312816105024	SACHIN GOWTHAM V	E	E	U	E	C	C	S		C
312816105025	SANJAY KANNAN D	C	E	U	U	E	B	S		B
312816105026	SELVARASAN S P	B	B	D	C	D	S	S		C
312816105027	SIVAGANGAI S	C	A	B	B	B	S	S		A
312816105028	THILAGAVATHY J	A	A	A	A	B	S	S		S
312816105029	VENNILA DEVI P	B	A	C	B	B	S	S		A

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 01** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 105-B.E. Electrical and Electronics Engineering

	Subject Code - >	BS8161	CY8151	GE8151	GE8152	GE8161	HS8151	MA8151	PH8151
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817105012	GOPINATH M							U	
312817105016	ISRAELRUFUS R							B	
312817105024	PRAKASH S							U	
312817105027	RATHIKA V							U	
312817105030	SRIDHAR A							U	
312817105034	SUVETHA PRIYAN V							U	
312817105036	VIJAY G							U	
312817105038	VISHNUPRIYA M							U	
312817105039	WILSON KUMAR E		U					U	U
312818105001	AHAMED SHARIF M							U	U
312818105002	ANDREWS A							B	
312818105006	DINESHKUMAR S		B		B			U	B
312818105014	SHOBAN ABISHEK R P							B	
312819105001	ARUN KAUSHIK N K	UA	UA	UA	UA	UA	UA	UA	UA
312819105002	BALAJI V	O	O	B	A	O	B+	A	O
312819105003	DIVYA LAKSHMI V	O	A	B	A	O	B	B	A
312819105004	GOKUL U	O	A+	B	A	O	B	B+	B+
312819105005	JEEVANANTHAM J	A	A	U	A	A	B	B	B
312819105006	JOHN BOSCO J	A+	B+	U	A	A+	U	U	U
312819105007	KISHOR S V	A+	B	U	B+	O	B+	A	B
312819105008	MANISHA MUTHU M	A+	A	B	O	O	B	A	B+
312819105009	MARI KANNAN M	B	B	U	B	B	B+	U	U
312819105010	NAVEEN KUMAR P	B	B	U	B	A+	U	U	U
312819105011	PREM B	B	B+	U	A	A	U	U	U
312819105012	PREM G	B+	B	U	B+	B+	U	U	U
312819105013	SATHYA NARAYANAN R	A	A	U	A	B+	A	B	B
312819105014	SHRIRAM KUMAR M	O	O	B+	A	O	A	O	A
312819105015	SRIHARI S	A+	A	U	B+	O	A	B	A
312819105016	VINISHA E	O	A+	B	A	O	A	A+	A+

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WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 03** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 105-B.E. Electrical and Electronics Engineering

	Subject Code - >	EC8311	EC8353	EE8301	EE8311	EE8351	EE8391	MA8353	ME8792
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817105001	AJITHKUMAR M			A					
312817105002	AJITHKUMAR S			A					
312817105003	ANBAN U			UA			B	U	
312817105007	CHARAN KUMAR D L						B		
312817105010	GOKULKRISHNA D		U	U					
312817105012	GOPINATH M		U	UA		U	U	UA	
312817105016	ISRAELRUFUS R		B	UA		B	U	U	
312817105019	KARTHICK V			B					
312817105020	KARTHIK N			B					
312817105023	MOHAMED KHALID N			B+					
312817105024	PRAKASH S			U		B	U	U	
312817105027	RATHIKA V			U		B		U	
312817105030	SRIDHAR A		B	UA		U	U	UA	
312817105031	SUDHARSON S		U	UA		U	U	U	U
312817105033	SUVEKA V		U	U		U		U	
312817105034	SUVETHA PRIYAN V			UA			B	UA	
312817105035	SWETHA J							B+	
312817105036	VIJAY G		U	UA		U	UA	UA	
312817105038	VISHNUPRIYA M					U	B+	U	B
312817105039	WILSON KUMAR E		UA	UA		UA	UA	UA	
312818105001	AHAMED SHARIF M	A+	U	U	O	B	B	B	B
312818105002	ANDREWS A	O	U	B+	A+	B	B+	B	B
312818105003	ARUNKUMAR M	O	B+	B+	O	B	B+	B	B+
312818105004	ASWIN A S	O	B+	B	A	U	U	B	U
312818105006	DINESHKUMAR S	A+	B	B	A+	B	U	U	B
312818105007	DINESHKUMAR S	O	B+	A	O	A	B+	B	A
312818105008	JAYASHREE C	O	B	B+	O	B+	B	B+	B
312818105009	KIRUBANITHI S	O	B+	A	O	B+	B	B	B+
312818105011	MOHAMEDHA AFRIN J	O	B+	U	O	B+	B	B+	A
312818105013	SATHEESHKUMAR V	O	B	B	O	B+	B	B+	B+
312818105014	SHOBAN ABISHEK R P	O	B	B+	A+	B	B	U	B
312818105015	SURESHKUMAR E	O	B+	A	A	B	B+	U	B+
312818105016	THIRUNAVUKARASU A	O	B	A+	O	A	B+	B	B+
312818105017	VASANTHA KUMAR C	O	B	A	A+	B	B	B	B+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 05** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 105-B.E. Electrical and Electronics Engineering

	Subject Code - >	CS8383	CS8392	EE8501	EE8511	EE8551	EE8552	EE8591	HS8581	OMD551
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817105001	AJITHKUMAR M	O	A	B+	O	A	B	B+	A	A
312817105002	AJITHKUMAR S	O	B+	B+	A	A	B	A	A	B+
312817105003	ANBAN U	A+	B	B	A	B+	U	B+	A	B
312817105005	BHARATHAN S	A+	B+	A	A	A	B	B	A	B+
312817105007	CHARAN KUMAR D L	A	B	B+	O	B	B	B+	A+	B
312817105008	DHATCHAYINI K	O	A	A	O	A	B+	A	A+	A
312817105009	DURGA D	O	A	A	O	A	A	A	O	A
312817105010	GOKULKRISHNA D	A	B	B	O	B+	B	UA	A	B+
312817105011	GOMATHI M	O	A	A	O	A+	B+	A	B+	A+
312817105012	GOPINATH M	A	U	B	A	B	U	B	A	U
312817105015	HEMALATHA R	O	B+	A	O	B+	B	B+	A	B+
312817105016	ISRAELRUFUS R	O	B	B+	A	B	U	B	A+	B
312817105017	JEEVITHA G	O	A+	A	O	A	B+	A+	A	A
312817105018	JEGADEESH M	O	B+	B+	O	B+	B	B+	A	B+
312817105019	KARTHICK V	O	B+	A	A+	B	B	B+	A+	B
312817105020	KARTHIK N	A+	B	B+	A+	B+	B	A	A+	B
312817105022	MAHENDRAN R	O	B+	B	A+	A	B	A	B+	B+
312817105023	MOHAMED KHALID N	O	B+	B+	A+	B+	U	B+	A	B
312817105024	PRAKASH S	A	B	U	O	B	U	B	A	B
312817105025	PRASANTH S	O	B+	A	O	B+	U	B+	A+	B
312817105026	RAMAJAYAM C	O	B+	A	O	B+	B	A	A+	B
312817105027	RATHIKA V	A	U	B	A+	B	B	B	A	U
312817105028	RIZWANA S	O	A	A	O	O	B+	A	A	B+
312817105030	SRIDHAR A	A	B	B	A+	A	B	B	A	B
312817105031	SUDHARSON S	A	U	B	A+	B	U	B	A	U
312817105032	SURESH K	O	B+	B	O	B	B	B+	A	U
312817105033	SUVEKA V	O	B+	B	A+	U	U	B+	A	B
312817105034	SUVETHA PRIYAN V	A	B	B	O	B	B	U	A	U
312817105035	SWETHA J	O	A	B+	A	B	B	U	A	A
312817105036	VIJAY G	A	B	B	O	B+	U	B+	A+	B
312817105037	VIJAYALAKSHMI B	O	A	A	O	A+	B	A	A+	A
312817105038	VISHNUPRIYA M	A+	B	B+	A	A+	B	B	B+	B+
312817105039	WILSON KUMAR E	A+	B	B	B+	B	U	B	B+	U

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

ANNA UNIVERSITY :: CHENNAI - 600025.
OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of April / May Examination,2020.

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 08** **DATE OF PUBLICATION :17-10-2020**

Branch : 105-B.E. Electrical and Electronics Engineering

	Subject Code - >	EE6009	EE6801	EE6811	GE6075
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade
312813105008	DHAMODHARAN V	D	E		
312813105018	JOHAN HERBET F		D		C
312813105019	KALAISELVAN S	D	E		
312814105030	SURESHKUMAR A		C		
312814105301	ANBAZHAGAN P	UA	UA		UA
312814105701	ARAVIND P R	E	E		D
312815105011	EBIN JOSE J	C	C		
312815105020	KUTRALISWARAN T		C		
312815105025	PADALEESWARAN N	C	D		
312815105030	PRASANNA S	E	D		D
312815105034	RATHISH RAHUL N	C	C		
312816105001	ABARNA E	C	D	S	C
312816105002	ABINESH SK	C	C	S	B
312816105003	ALSHEIK ALAVUDEEN B	B	C	S	B
312816105004	ARUN BHARATHI K	C	E	S	C
312816105005	ASHWIN KUMAR S	E	C	S	C
312816105006	BHARATHI SELVAN B	E	E	S	D
312816105007	DINESH KUMAR M	C	C	S	B
312816105008	ELAMPARITHI S	D	E	S	E
312816105009	EMIMAL L	B	B	S	B
312816105011	GOVARDHANAN K	C	D	S	B
312816105012	GUNASEKARAN G	C	B	S	D
312816105013	HARISH B	B	B	S	A
312816105014	JAGADESAN D	B	B	S	B
312816105015	JEEVA S	C	C	S	C
312816105016	KANISHKA A	A	B	S	A
312816105017	LOGESH S	D	E	S	E
312816105018	MANIKANDAN D (11-12-1997)	E	E	S	E
312816105019	MANIKANDAN D (06-11-1998)	D	D	S	C
312816105021	MUKUNTH M	C	C	S	B
312816105022	PRAKASH S	C	C	S	C
312816105023	RAGUL T	C	C	S	B
312816105024	SACHIN GOWTHAM V	C	C	S	C

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312816105025	SANJAY KANNAN D	D	C	S	E
312816105026	SELVARASAN S P	C	C	S	C
312816105027	SIVAGANGAI S	B	B	S	A
312816105028	THILAGAVATHY J	B	A	S	B
312816105029	VENNILA DEVI P	A	B	S	A

W - Withdrawal I - Inadequate Attendance

WH1 - Withheld for Suspected Malpractice WH(others) - Withheld for want of Clarification,approval,etc.

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OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of April / May Examination,2020 [R-2017].

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 02** **DATE OF PUBLICATION :15-08-2020**

Branch : 105-B.E. Electrical and Electronics Engineering

	Subject Code - >	BE8252	EE8251	EE8261	GE8261	GE8291	HS8251	MA8251	PH8253
Reg. Number	**Stud. Name**	**Grade**	**Grade**	**Grade**	**Grade**	**Grade**	**Grade**	**Grade**	**Grade**
312819105002	BALAJI V	O	O	O	O	O	O	O	O
312819105003	DIVYA LAKSHMI V	A+	A+	O	O	A+	A+	A+	A+
312819105004	GOKUL U	O	A+	O	O	O	O	O	O
312819105005	JEEVANANTHAM J	A+	B+	O	O	A+	A+	A+	A+
312819105006	JOHN BOSCO J	B+	B	O	O	B+	B	A	B
312819105007	KISHOR S V	A+	A+	O	O	A+	A+	A+	A+
312819105008	MANISHA MUTHU M	A+	O	O	O	O	O	O	O
312819105009	MARI KANNAN M	B+	B	O	O	A	A+	B	B
312819105010	NAVEEN KUMAR P	B	B	O	O	B	B	B	B
312819105011	PREM B	B	B	O	O	B+	B	B+	B
312819105013	SATHYA NARAYANAN R	A+	B	O	O	A+	A+	A+	A+
312819105014	SHRIRAM KUMAR M	O	O	O	O	O	O	O	O
312819105015	SRIHARI S	A+	A	O	O	A+	A+	A+	A+
312819105016	VINISHA E	A+	O	O	O	O	O	O	A

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 04** **DATE OF PUBLICATION :15-08-2020**

Branch : 105-B.E. Electrical and Electronics Engineering

	Subject Code - >	EE8401	EE8402	EE8403	EE8411	EE8412	EE8451	EE8461	IC8451	MA8491
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312818105001	AHAMED SHARIF M	A+	A	A	O	O	A	O	A+	A+
312818105002	ANDREWS A	A+	A+	A	O	O	A	O	A+	A
312818105003	ARUNKUMAR M	A+	A+	A+	O	O	A+	O	A+	A+
312818105004	ASWIN A S	A	A	A	O	O	A	O	A+	A
312818105006	DINESHKUMAR S	B+	B+	B	O	O	B	O	B	B
312818105007	DINESHKUMAR S	O	O	O	A+	O	O	A+	O	O
312818105008	JAYASHREE C	A+	A+	A+	O	O	A+	O	A+	A+
312818105009	KIRUBANITHI S	A+	A+	A+	O	O	A+	O	A+	A+
312818105011	MOHAMEDHA AFRIN J	A+	A+	A+	O	O	A+	O	A+	A+
312818105013	SATHEESHKUMAR V	A+	A+	A+	O	O	A+	O	A+	A+
312818105014	SHOBAN ABISHEK R P	A+	B+	A	O	O	A+	O	A	A
312818105015	SURESHKUMAR E	A+	A+	A+	O	O	A+	O	A+	A+
312818105016	THIRUNAVUKARASU A	O	O	O	O	O	O	O	O	O
312818105017	VASANTHA KUMAR C	A+	A+	A+	O	O	A+	O	A+	A

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 06** **DATE OF PUBLICATION :15-08-2020**

Branch : 105-B.E. Electrical and Electronics Engineering

	Subject Code - >	EE8002	EE8005	EE8601	EE8602	EE8611	EE8661	EE8681	EE8691
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817105001	AJITHKUMAR M	O	O	O	O	O	O	O	O
312817105002	AJITHKUMAR S	O	O	A+	A+	O	O	O	A+
312817105003	ANBAN U	O	A+	A+	A	O	A+	O	A+
312817105005	BHARATHAN S	O	O	A+	A+	O	O	O	A+
312817105007	CHARAN KUMAR D L	O	A+	A+	A+	O	O	O	A
312817105008	DHATCHAYINI K	O	O	O	O	O	O	O	O
312817105009	DURGA D	O	O	O	O	O	O	O	O
312817105010	GOKULKRISHNA D	O	A+	A+	A+	O	O	O	A
312817105011	GOMATHI M	O	O	O	O	O	O	O	O
312817105012	GOPINATH M	A	A	B+	B+	O	A+	O	B+
312817105015	HEMALATHA R	O	O	O	O	O	O	O	O
312817105016	ISRAELRUFUS R	B+	A	B+	A	O	A+	A+	B+
312817105017	JEEVITHA G	O	O	O	O	O	O	O	O
312817105018	JEGADEESH M	O	O	A+	O	O	O	O	O
312817105019	KARTHICK V	B+	O	A+	A+	O	O	O	A+
312817105020	KARTHIK N	O	O	A+	A+	O	O	O	A+
312817105022	MAHENDRAN R	A+	O	A+	A+	O	O	O	A+
312817105023	MOHAMED KHALID N	O	O	A+	A+	A+	A+	A+	A+
312817105024	PRAKASH S	B+	O	A	B+	O	A+	O	A
312817105025	PRASANTH S	O	O	A+	A+	O	O	O	A+
312817105026	RAMAJAYAM C	O	O	O	O	O	O	O	O
312817105027	RATHIKA V	O	A+	A+	A+	O	O	O	A+
312817105028	RIZWANA S	O	O	O	O	O	O	O	O
312817105030	SRIDHAR A	A+	A	A+	A+	O	O	O	A
312817105031	SUDHARSON S	A	B+	B+	B	A+	A+	O	B+
312817105032	SURESH K	O	O	A+	A+	O	O	O	A
312817105033	SUVEKA V	O	O	A+	A+	O	O	O	A+
312817105034	SUVETHA PRIYAN V	B+	A+	A	B+	O	O	O	B+
312817105035	SWETHA J	O	O	A+	A+	O	O	O	A+
312817105036	VIJAY G	B+	A	B+	B+	A+	A+	O	A
312817105037	VIJAYALAKSHMI B	O	O	O	O	O	O	O	O
312817105038	VISHNUPRIYA M	O	O	A+	A+	O	O	O	A+
312817105039	WILSON KUMAR E	B+	A	B	B+	A+	A+	A+	B+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

EE8301 | **L T P C**

ELECTRICAL MACHINES – I | **2 2 0 3**

OBJECTIVES:

To impart knowledge on the following Topics

- Magnetic-circuit analysis and introduce magnetic materials
- Constructional details, the principle of operation, prediction of performance, the methods of testing the transformers and three phase transformer connections.
- Working principles of electrical machines using the concepts of electromechanical energy conversion principles and derive expressions for generated voltage and torque developed in all Electrical Machines.
- Working principles of DC machines as Generator types, determination of their no-load/load characteristics, starting and methods of speed control of motors.
- Various losses taking place in D.C. Motor and to study the different testing methods to arrive at their performance.

UNIT I MAGNETIC CIRCUITS AND MAGNETIC MATERIALS 6+6

Magnetic circuits –Laws governing magnetic circuits - Flux linkage, Inductance and energy – Statically and Dynamically induced EMF - Torque – Properties of magnetic materials, Hysteresis and Eddy Current losses - AC excitation, introduction to permanent magnets- Transformer as a magnetically coupled circuit.

UNIT II TRANSFORMERS 6+6

Construction – principle of operation – equivalent circuit parameters – phasor diagrams, losses – testing – efficiency and voltage regulation-all day efficiency-Sumpner's test, per unit representation – inrush current - three phase transformers-connections – Scott Connection – Phasing of transformer– parallel operation of three phase transformers-auto transformer – tap changing transformers- tertiary winding.

UNIT III ELECTROMECHANICAL ENERGY CONVERSION AND CONCEPTS IN ROTATING MACHINES 6+6

Energy in magnetic system – Field energy and co energy-force and torque equations – singly and multiply excited magnetic field systems-mmf of distributed windings – Winding Inductances-, magnetic fields in rotating machines – rotating mmf waves – magnetic

saturation and leakage fluxes.

UNIT IV DC GENERATORS 6+6

Construction and components of DC Machine – Principle of operation - Lap and wave windings-EMF equations– circuit model – armature reaction –methods of excitation-commutation - interpoles compensating winding –characteristics of DC generators.

UNIT V DC MOTORS 6+6

Principle and operations - types of DC Motors – Speed Torque Characteristics of DC Motors-starting and speed control of DC motors –Plugging, dynamic and regenerative braking- testing and efficiency – Retardation test- Swinburne's test and Hopkinson's test - Permanent Magnet DC (PMDC)motors-applications of DC
Motor

TOTAL : 60 PERIODS

OUTCOMES:

- Ability to analyze the magnetic-circuits.
- Ability to acquire the knowledge in constructional details of transformers.
- Ability to understand the concepts of electromechanical energy conversion.
- Ability to acquire the knowledge in working principles of DC Generator.
- Ability to acquire the knowledge in working principles of DC Motor
- Ability to acquire the knowledge in various losses taking place in D.C. Machines

TEXT BOOKS:

1. Stephen J. Chapman, 'Electric Machinery Fundamentals'4th edition, McGraw Hill Education Pvt. Ltd, 2010.
2. P.C. Sen'Principles of Electric Machines and Power Electronics' John Wiley & Sons; 3rd Edition 2013.
3. Nagrath, I.J. and Kothari.D.P., Electric Machines', McGraw-Hill Education, 2004

REFERENCES

1. Theodore Wildi, "Electrical Machines, Drives, and Power Systems", Pearson Education., (5th Edition)**,** 2002**.**
2. B.R. Gupta ,'Fundamental of Electric Machines' New age International Publishers,3rd Edition ,Reprint 2015.
3. S.K. Bhattacharya, 'Electrical Machines' McGraw - Hill Education, New Delhi, 3rd Edition,2009.
4. Vincent Del Toro, 'Basic Electric Machines' Pearson India Education, 2016.
5. Surinder Pal Bali, 'Electrical Technology Machines & Measurements, Vol.II, Pearson, 2013.
6. Fitzgerald. A.E., Charles Kingsely Jr, Stephen D.Umans, 'Electric Machinery', Sixth edition, McGraw Hill Books Company, 2003.

EE8401	ELECTRICAL MACHINES – II	L	T	P	C
		2	2	0	3

OBJECTIVES:

To impart knowledge on the following Topics

- Construction and performance of salient and non – salient type synchronous generators.
- Principle of operation and performance of synchronous motor.
- Construction, principle of operation and performance of induction machines.
- Starting and speed control of three-phase induction motors.
- Construction, principle of operation and performance of single phase induction motors and special machines.

UNIT I SYNCHRONOUS GENERATOR 6+6

Constructional details – Types of rotors –winding factors- emf equation – Synchronous reactance – Armature reaction – Phasor diagrams of non salient pole synchronous generator connected to infinite bus--Synchronizing and parallel operation – Synchronizing torque - Change of excitation and mechanical input- Voltage regulation – EMF, MMF, ZPF and A.S.A methods – steady state power- angle characteristics– Two reaction theory –slip test -short circuit transients - Capability Curves

UNIT II SYNCHRONOUS MOTOR 6+6

Principle of operation – Torque equation – Operation on infinite bus bars - V and Inverted V curves – Power input and power developed equations – Starting methods – Current loci for constant power input, constant excitation and constant power developed-Hunting – natural frequency of oscillations – damper windings- synchronous condenser.

UNIT III THREE PHASE INDUCTION MOTOR 6+6

Constructional details – Types of rotors –- Principle of operation – Slip –cogging and crawling- Equivalent circuit – Torque-Slip characteristics - Condition for maximum torque – Losses and efficiency – Load test - No load and blocked rotor tests - Circle diagram – Separation of losses – Double cage induction motors –Induction generators – Synchronous induction motor.

UNIT IV STARTING AND SPEED CONTROL OF THREE PHASE INDUCTION MOTOR 6+6

Need for starting – Types of starters – DOL, Rotor resistance, Autotransformer and Star- delta starters – Speed control – Voltage control, Frequency control and pole changing – Cascaded connection-V/f control – Slip power recovery scheme-Braking of three phase induction motor: Plugging, dynamic braking and regenerative braking.

UNIT V SINGLE PHASE INDUCTION MOTORS AND SPECIAL MACHINES 6+6

Constructional details of single phase induction motor – Double field revolving theory and operation – Equivalent circuit – No load and blocked rotor test – Performance analysis – Starting methods of single-phase induction motors – Capacitor-start capacitor run Induction motor- Shaded pole induction motor - Linear induction motor – Repulsion motor - Hysteresis motor - AC series motor- Servo motors- Stepper motors - introduction to magnetic levitation systems.

TOTAL : 60 PERIODS

OUTCOMES:

- Ability to understand the construction and working principle of Synchronous Generator
- Ability to understand MMF curves and armature windings.
- Ability to acquire knowledge on Synchronous motor.
- Ability to understand the construction and working principle of Three phase Induction Motor
- Ability to understand the construction and working principle of Special Machines
- Ability to predetermine the performance characteristics of Synchronous Machines.

TEXT BOOKS:

1. A.E. Fitzgerald, Charles Kingsley, Stephen. D. Umans, 'Electric Machinery', Mc Graw Hill publishing Company Ltd, 2003.
2. Vincent Del Toro, 'Basic Electric Machines' Pearson India Education, 2016.
3. Stephen J. Chapman, 'Electric Machinery Fundamentals'4th edition, McGraw Hill Education Pvt. Ltd, 2010.

REFERENCES

1. D.P. Kothari and I.J. Nagrath, 'Electric Machines', McGraw Hill Publishing Company Ltd, 2002.
2. P.S. Bhimbhra, 'Electrical Machinery', Khanna Publishers, 2003.
3. M.N. Bandyopadhyay, Electrical Machines Theory and Practice, PHI Learning PVT LTD., New Delhi, 2009.
4. B.R.Gupta, 'Fundamental of Electric Machines' New age International Publishers,3rd Edition ,Reprint 2015.
5. Murugesh Kumar, 'Electric Machines', Vikas Publishing House Pvt. Ltd, 2002.
6. Alexander S. Langsdorf, 'Theory of Alternating-Current Machinery', McGraw Hill Publications, 2001.

EE8552	POWER ELECTRONICS	L	T	P	C
		3	0	0	3

OBJECTIVES:

To impart knowledge on the following Topics

- Different types of power semiconductor devices and their switching
- Operation, characteristics and performance parameters of controlled rectifiers
- Operation, switching techniques and basics topologies of DC-DC switching regulators.
- Different modulation techniques of pulse width modulated inverters and to understand harmonic reduction methods.
- Operation of AC voltage controller and various configurations.

UNIT I POWER SEMI-CONDUCTOR DEVICES 9

Study of switching devices, SCR, TRIAC, GTO, BJT, MOSFET, IGBT and IGCT- Static characteristics: SCR, MOSFET and IGBT - Triggering and commutation circuit for SCR- Introduction to Driver and snubber circuits.

UNIT II PHASE-CONTROLLED CONVERTERS 9

2-pulse, 3-pulse and 6-pulseconverters– performance parameters –Effect of source inductance— Firing Schemes for converter–Dual converters, Applications-light dimmer, Excitation system, Solar PV systems.

UNIT III DC TO DC CONVERTERS 9

Step-down and step-up chopper-control strategy– Introduction to types of choppers-A, B, C, D and E -Switched mode regulators- Buck, Boost, Buck- Boost regulator, Introduction to Resonant Converters, Applications-Battery operated vehicles.

UNIT IV INVERTERS 9

Single phase and three phase voltage source inverters (both120^0 mode and 180^0 mode)– Voltage& harmonic control--PWM techniques: Multiple PWM, Sinusoidal PWM, modified sinusoidal PWM – Introduction to space vector modulation –Current source inverter, Applications-Induction heating, UPS.

UNIT V AC TO AC CONVERTERS 9

Single phase and Three phase AC voltage controllers–Control strategy- Power Factor Control – Multistage sequence control -single phase and three phase cyclo converters – Introduction to Matrix converters, Applications –welding .

TOTAL : 45 PERIODS

OUTCOMES:

- Ability to analyse AC-AC and DC-DC and DC-AC converters.
- Ability to choose the converters for real time applications.

TEXT BOOKS:

1. M.H. Rashid, ‘Power Electronics: Circuits, Devices and Applications’, Pearson Education, Third Edition, New Delhi, 2004.

2. P.S.Bimbra “Power Electronics” Khanna Publishers, third Edition, 2003.
3. Ashfaq Ahmed ‘Power Electronics for Technology’, Pearson Education, Indian reprint, 2003.

REFERENCES

1. Joseph Vithayathil,’ Power Electronics, Principles and Applications’, McGraw Hill Series, 6th Reprint, 2013.
2. Philip T. Krein, “Elements of Power Electronics” Oxford University Press, 2004 Edition.
3. L. Umanand, “Power Electronics Essentials and Applications”, Wiley, 2010.
4. Ned Mohan Tore. M. Undel and, William. P. Robbins, ‘Power Electronics: Converters, Applications and Design’, John Wiley and sons, third edition, 2003.
5. S.Rama Reddy, ‘Fundamentals of Power Electronics’, Narosa Publications, 2014.
6. M.D. Singh and K.B. Khanchandani, “Power Electronics,” Mc Graw Hill India, 2013.
7. JP Agarwal,” Power Electronic Systems: Theory and Design” 1e, Pearson Education, 2002.

		L	T	P	C
EE8551	**MICROPROCESSORS AND MICROCONTROLLERS**	**3**	**0**	**0**	**3**

OBJECTIVES:

To impart knowledge on the following Topics

- Architecture of µP8085 & µC 8051
- Addressing modes & instruction set of 8085 & 8051.
- Need & use of Interrupt structure 8085 & 8051.
- Simple applications development with programming 8085 & 8051

UNIT I 8085 PROCESSOR 9

Hardware Architecture, pinouts – Functional Building Blocks of Processor – Memory organization – I/O ports and data transfer concepts– Timing Diagram – Interrupts.

UNIT II PROGRAMMING OF 8085 PROCESSOR 9

Instruction -format and addressing modes – Assembly language format – Data transfer, data manipulation& control instructions – Programming: Loop structure with counting & Indexing – Look up tability - Subroutine instructions - stack.

UNIT III 8051 MICRO CONTROLLER 9

Hardware Architecture, pinouts – Functional Building Blocks of Processor – Memory organization – I/O ports and data transfer concepts– Timing Diagram – Interrupts- Data Transfer, Manipulation, Control Algorithms& I/O instructions, Comparison to Programming concepts with 8085.

UNIT IV PERIPHERAL INTERFACING 9

Study on need, Architecture, configuration and interfacing, with ICs: 8255, 8259, 8254, 8279, - A/D and D/A converters &Interfacing with 8085& 8051.

UNIT V MICRO CONTROLLER PROGRAMMING & APPLICATIONS 9

Simple programming exercises- key board and display interface –Control of servo motor-stepper motor control- Application to automation systems.

TOTAL :45 PERIODS

OUTCOMES:

- Ability to acquire knowledge in Addressing modes & instruction set of 8085 & 8051.
- Ability to need & use of Interrupt structure 8085 & 8051.
- Ability to understand the importance of Interfacing
- Ability to explain the architecture of Microprocessor and Microcontroller.
- Ability to write the assembly language programme.
- Ability to develop the Microprocessor and Microcontroller based applications.
-

TEXT BOOKS:

1. Sunil Mathur &Jeebananda Panda, “Microprocessor and Microcontrollers”, PHI Learning Pvt. Ltd, 2016.
2. R.S. Gaonkar, ‘Microprocessor Architecture Programming and Application’, with 8085, Wiley Eastern Ltd., New Delhi, 2013.
3. Muhammad Ali Mazidi & Janice Gilli Mazidi, R.D.Kinely ‘The 8051 Micro Controller and Embedded Systems’, PHI Pearson Education, 5th Indian reprint, 2003.

REFERENCES

2. Krishna Kant, “Microprocessor and Microcontrollers”, Eastern Company Edition, Prentice Hall of India, New Delhi, 2007.
3. B.RAM,” Computer Fundamentals Architecture and Organization” New age International Private Limited, Fifth edition, 2017.

4. Soumitra Kumar Mandal, Microprocessor & Microcontroller Architecture, Programming & Interfacing using 8085,8086,8051,McGraw Hill Edu,2013.
5. Ajay V.Deshmukh, 'Microcontroller Theory &Applications', McGraw Hill Edu,2016
6. Douglas V.Hall, 'Microprocessor and Interfacing', McGraw Hill Edu,2016.

EE8702	POWER SYSTEM OPERATION AND CONTROL	L	T	P	C
		3	0	0	3

OBJECTIVES:

To impart knowledge on the following topics

- Significance of power system operation and control.
- Real power-frequency interaction and design of power-frequency controller.
- Reactive power-voltage interaction and the control actions to be implemented for maintaining the voltage profile against varying system load.
- Economic operation of power system.
- SCADA and its application for real time operation and control of power systems

UNIT I PRELIMINARIES ON POWER SYSTEM OPERATION AND CONTROL 9

Power scenario in Indian grid – National and Regional load dispatching centers – requirements of good power system - necessity of voltage and frequency regulation - real power vs frequency and reactive power vs voltage control loops - system load variation, load curves and basic concepts of load dispatching - load forecasting - Basics of speed governing mechanisms and modeling - speed load characteristics - regulation of two generators in parallel.

UNIT II REAL POWER - FREQUENCY CONTROL 9

Load Frequency Control (LFC) of single area system-static and dynamic analysis of uncontrolled and controlled cases - LFC of two area system - tie line modeling - block diagram representation of two area system - static and dynamic analysis - tie line with frequency bias control – state variability model - integration of economic dispatch control with LFC.

UNIT III REACTIVE POWER – VOLTAGE CONTROL 9

Generation and absorption of reactive power - basics of reactive power control – Automatic Voltage Regulator (AVR) – brushless AC excitation system – block diagram representation of AVR loop - static and dynamic analysis – stability compensation – voltage drop in transmission line - methods of reactive power injection - tap changing transformer, SVC (TCR + TSC) and STATCOM for voltage control.

UNIT IV ECONOMIC OPERATION OF POWER SYSTEM 9

Statement of economic dispatch problem - input and output characteristics of thermal plant - incremental cost curve - optimal operation of thermal units without and with transmission losses (no derivation of transmission loss coefficients) - base point and participation factors method - statement of unit commitment (UC) problem - constraints on UC problem - solution of UC problem using priority list – special aspects of short term and long term hydrothermal problems.

UNIT V COMPUTER CONTROL OF POWER SYSTEMS 9

Need of computer control of power systems-concept of energy control centers and functions – PMU - system monitoring, data acquisition and controls - System hardware configurations - SCADA and EMS functions - state estimation problem – measurements and errors - weighted least square estimation - various operating states - state transition diagram.

TOTAL : 45 PERIODS

OUTCOMES:

- Ability to understand the day-to-day operation of electric power system.
- Ability to analyze the control actions to be implemented on the system to meet the minute-to-minute variation of system demand.
- Ability to understand the significance of power system operation and control.
- Ability to acquire knowledge on real power-frequency interaction.
- Ability to understand the reactive power-voltage interaction.
- Ability to design SCADA and its application for real time operation.

TEXT BOOKS:

1. Olle.I.Elgerd, 'Electric Energy Systems theory - An introduction', McGraw Hill Education Pvt. Ltd., New Delhi, 34th reprint, 2010.
2. Allen. J. Wood and Bruce F. Wollen berg, 'Power Generation, Operation and Control', John Wiley & Sons, Inc., 2016.
3. Abhijit Chakrabarti and Sunita Halder, 'Power System Analysis Operation and Control', PHI learning Pvt. Ltd., New Delhi, Third Edition, 2010.

REFERENCES

1. Kothari D.P. and Nagrath I.J., 'Power System Engineering', Tata McGraw-Hill Education, Second Edition, 2008.
2. Hadi Saadat, 'Power System Analysis', McGraw Hill Education Pvt. Ltd., New Delhi, 21st reprint, 2010.
3. Kundur P., 'Power System Stability and Control, McGraw Hill Education Pvt. Ltd., New Delhi, 10th reprint, 2010.

IT

2019-20

SEMESTER VII

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	IT6701	Information Management	3	0	0	3
2.	CS6701	Cryptography and Network Security	3	0	0	3
3.	IT6702	Data Ware Housing and Data Mining	3	0	0	3
4.	CS6703	Grid and Cloud Computing	3	0	0	3
5.		Elective II	3	0	0	3
PRACTICAL						
6.	IT6711	Data Mining Laboratory	0	0	3	2
7.	IT6712	Security Laboratory	0	0	3	2
8.	IT6713	Grid and Cloud Computing Laboratory	0	0	3	2
		TOTAL	15	0	9	21

SEMESTER VIII

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	IT6801	Service Oriented Architecture	3	0	0	3
2.		Elective III	3	0	0	3
3.		Elective IV	3	0	0	3
		Elective V	3	0	0	3
PRACTICAL						
4.	IT6811	Project Work	0	0	12	6
		TOTAL	12	0	12	18

TOTAL NO. OF CREDITS: 187

LIST OF ELECTIVES

SEMESTER VI – ELECTIVE I

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	IT6001	Advanced Database Technology	3	0	0	3
2.	IT6002	Information Theory and Coding Techniques	3	0	0	3
3.	CS6001	C# and .Net Programming	3	0	0	3
4.	GE6757	Total Quality Management	3	0	0	3
5.	CS6012	Soft Computing	3	0	0	3
6.	GE6084	Human Rights	3	0	0	3

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
B.TECH INFORMATION TECHNOLOGY
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM
I - VIII SEMESTERS CURRICULA AND SYLLABI

SEMESTER I

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	31	19	0	12	25

SEMESTER II

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8252	Physics for Information Science	BS	3	3	0	0	3
4.	BE8255	Basic Electrical, Electronics and Measurement Engineering	ES	3	3	0	0	3
5.	IT8201	Information Technology Essentials	PC	3	3	0	0	3
6.	CS8251	Programming in C	PC	3	3	0	0	3
PRACTICALS								
7.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8.	CS8261	C Programming Laboratory	PC	4	0	0	4	2
9.	IT8211	Information Technology Essentials Laboratory	PC	2	0	0	2	1
			TOTAL	30	20	0	10	25

SEMESTER III

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8351	Discrete Mathematics	BS	4	4	0	0	4
2.	CS8351	Digital Principles and System Design	ES	4	4	0	0	4
3.	CS8391	Data Structures	PC	3	3	0	0	3
4.	CS8392	Object Oriented Programming	PC	3	3	0	0	3
5.	EC8394	Analog and Digital Communication	PC	3	3	0	0	3
PRACTICALS								
6.	CS8381	Data Structures Laboratory	PC	4	0	0	4	2
7.	CS8383	Object Oriented Programming Laboratory	PC	4	0	0	4	2
8.	CS8382	Digital Systems Laboratory	ES	4	0	0	4	2
9.	HS8381	Interpersonal Skills/Listening & Speaking	EEC	2	0	0	2	1
			TOTAL	31	17	0	14	24

SEMESTER IV

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8391	Probability and Statistics	BS	4	4	0	0	4
2.	CS8491	Computer Architecture	PC	3	3	0	0	3
3.	CS8492	Database Management Systems	PC	3	3	0	0	3
4.	CS8451	Design and Analysis of Algorithms	PC	3	3	0	0	3
5.	CS8493	Operating Systems	PC	3	3	0	0	3
6.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
PRACTICALS								
7.	CS8481	Database Management Systems Laboratory	PC	4	0	0	4	2
8.	CS8461	Operating Systems Laboratory	PC	4	0	0	4	2
9.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
			TOTAL	29	19	0	10	24

SEMESTER V

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8551	Algebra and Number Theory	BS	4	4	0	0	4
2.	CS8591	Computer Networks	PC	3	3	0	0	3
3.	EC8691	Microprocessors and Microcontrollers	PC	3	3	0	0	3
4.	IT8501	Web Technology	PC	3	3	0	0	3
5.	CS8494	Software Engineering	PC	3	3	0	0	3
6.		Open Elective I	OE	3	3	0	0	3
PRACTICALS								
7.	EC8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
8.	CS8581	Networks Laboratory	PC	4	0	0	4	2
9.	IT8511	Web Technology Laboratory	PC	4	0	0	4	2
			TOTAL	**31**	**19**	**0**	**12**	**25**

SEMESTER VI

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	IT8601	Computational Intelligence	PC	3	3	0	0	3
2.	CS8592	Object Oriented Analysis and Design	PC	3	3	0	0	3
3.	IT8602	Mobile Communication	PC	3	3	0	0	3
4.	CS8091	Big Data Analytics	PC	3	3	0	0	3
5.	CS8092	Computer Graphics and Multimedia	PC	3	3	0	0	3
6.		Professional Elective I	PE	3	3	0	0	3
PRACTICALS								
7.	CS8662	Mobile Application Development Laboratory	PC	4	0	0	4	2
8.	CS8582	Object Oriented Analysis and Design Laboratory	PC	4	0	0	4	2
9.	IT8611	Mini Project	EEC	2	0	0	2	1
10.	HS8581	Professional Communication	EEC	2	0	0	2	1
			TOTAL	**30**	**18**	**0**	**12**	**24**

SEMESTER VII

Sl.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MG8591	Principles of Management	HS	3	3	0	0	3
2.	CS8792	Cryptography and Network Security	PC	3	3	0	0	3
3.	CS8791	Cloud Computing	PC	3	3	0	0	3
4.		Open Elective II	OE	3	3	0	0	3
5.		Professional Elective II	PE	3	3	0	0	3
6.		Professional Elective III	PE	3	3	0	0	3
PRACTICALS								
7.	IT8711	FOSS and Cloud Computing Laboratory	PC	4	0	0	4	2
8.	IT8761	Security Laboratory	PC	4	0	0	4	2
			TOTAL	**26**	**18**	**0**	**8**	**22**

SEMESTER VIII

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.		Professional Elective IV	PE	3	3	0	0	3
2.		Professional Elective V	PE	3	3	0	0	3
PRACTICALS								
3.	IT8811	Project Work	EEC	20	0	0	20	10
			TOTAL	**26**	**6**	**0**	**20**	**16**

TOTAL NO. OF CREDITS: 185

PROFESSIONAL ELECTIVES (PE)

SEMESTER VI
ELECTIVE - I

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	IT8076	Software Testing	PE	3	3	0	0	3
2.	CS8077	Graph Theory and Applications	PE	3	3	0	0	3
3.	IT8071	Digital Signal Processing	PE	3	3	0	0	3
4.	IT8001	Information Storage and Management	PE	3	3	0	0	3
5.	CS8072	Agile Methodologies	PE	3	3	0	0	3
6.	IT8072	Embedded Systems	PE	3	3	0	0	3
7.	GE8075	Intellectual Property Rights	PE	3	3	0	0	3

SEMESTER VII
ELECTIVE - II

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	IT8002	Web Development Frameworks	PE	3	3	0	0	3
2.	CS8082	Machine Learning Techniques	PE	3	3	0	0	3
3.	IT8003	Formal Languages and Automata Theory	PE	3	3	0	0	3
4.	CS8081	Internet of Things	PE	3	3	0	0	3
5.	IT8075	Software Project Management	PE	3	3	0	0	3
6.	IT8074	Service Oriented Architecture	PE	3	3	0	0	3
7.	GE8077	Total Quality Management	PE	3	3	0	0	3

SEMESTER VII
ELECTIVE - III

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8079	Human Computer Interaction	PE	3	3	0	0	3
2.	CS8073	C# and .Net Programming	PE	3	3	0	0	3
3.	CS8088	Wireless Adhoc and Sensor Networks	PE	3	3	0	0	3
4.	GE8072	Foundation Skills in Integrated Product Development	PE	3	3	0	0	3
5.	CS8071	Advanced Topics on Databases	PE	3	3	0	0	3
6.	GE8074	Human Rights	PE	3	3	0	0	3
7.	GE8071	Disaster Management	PE	3	3	0	0	3

ANNA UNIVERSITY :: CHENNAI - 600025.
OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of April / May Examination,2020 [R-2017].

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 02** **DATE OF PUBLICATION :15-08-2020**

Branch : 205-B.Tech. Information Technology

	Subject Code - >	BE8255	CS8251	CS8261	GE8261	HS8251	IT8201	IT8211	MA8251	PH8252
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312819205001	ABINAYA Y	B+	A+	O	O	A+	A+	O	A+	A
312819205003	ADHITYA VARMAN V	O	O	O	O	A	O	O	O	A
312819205004	AKASH G	B+	B	O	O	B	B	O	B	B
312819205005	AKILANDESWARI A	B	A	O	O	A+	A+	O	A+	B+
312819205006	BALAJI M	B+	A+	O	O	A+	A	O	A+	A+
312819205007	BHARATHKUMAR K	B	A+	O	O	A	A+	O	B	B
312819205009	GOKUL R	B	B+	O	O	B+	B	O	B+	B
312819205010	GURU MOORTHY J	O	O	O	O	O	O	O	O	O
312819205012	KAVIYA DHARSHINI S	B	B	O	O	A	A	O	B	B
312819205013	KAVIYANJALI B	O	O	O	O	O	O	O	O	O
312819205014	KEERTHANA D	O	O	O	O	O	O	O	O	O
312819205015	KRISHNA G	B	O	O	O	O	A+	O	O	O
312819205016	KRISHNA KUMAR S	A	O	O	O	A+	O	O	B+	B
312819205018	MANOJ KUMAR N	B+	A+	O	O	A+	B+	O	B	B
312819205019	MANOSRI R	A+	A+	O	O	A+	A+	O	A+	A+
312819205020	MATHUMITHA V	O	O	O	O	O	O	O	O	O
312819205021	MOHAMMED FAROOK C	O	O	O	O	O	O	O	O	O
312819205022	MOHANA SUNDRAM V	O	O	O	O	A+	O	O	A+	A
312819205023	NAVEEN N	B+	A+	O	O	A	A+	O	A	B
312819205024	NILAVANI K	O	O	O	O	O	O	O	O	O
312819205025	NITHIGA R	B	B+	O	O	A	B	O	B+	B
312819205026	NITHIYAKALYANI G	O	O	O	O	O	O	O	O	A+
312819205027	POOJA S	O	O	O	O	O	O	O	O	O
312819205028	POOJA S	A	O	O	O	O	A+	O	O	O
312819205029	PRADEEP V	A+	A+	O	O	A+	A+	O	A+	A+
312819205030	PRAVEEN JOSEPH RATNIAH E	B+	A+	O	O	A+	B+	O	A	B
312819205032	PREETHI S	B	A	O	O	A	B	O	B	B
312819205033	PRINCY F	B	B	O	O	A	B+	O	B	B
312819205034	RANJITH S	O	O	O	O	O	O	O	B+	A+
312819205035	SAKTHIVEL S	B	B+	O	O	A	B	O	B	B
312819205036	SANDHIYA C	B+	A	O	O	A	A	O	A+	B+
312819205037	SARANRAJ P	B	B	O	O	A	A+	O	A	B
312819205038	SIVARAMAN E	B+	B	O	O	B+	A	O	B+	B
312819205039	SNEHASRI S V	B	A	O	O	A+	A+	O	B+	A

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312819205040	SREE RAM U	B+	A+	O	O	A+	A+	O	A+	A
312819205041	SUBASH V	B	B+	O	O	A+	B	O	B	B
312819205043	SWEADHA M	B	A+	O	O	A+	A	O	A+	A
312819205045	VAIBHAV U	B+	A+	O	O	A+	A+	O	A	A
312819205046	VANATHI P	O	O	O	O	O	O	O	O	O
312819205047	VASUNTHRA R	B	A	O	O	A+	B+	O	A	B
312819205049	YAMINI D	O	O	O	O	O	O	O	O	O
312819205050	YUVASRI S	A	A+	O	O	A+	A+	O	A+	A+

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 04** **DATE OF PUBLICATION :15-08-2020**

Branch : 205-B.Tech. Information Technology

	Subject Code - >	CS8451	CS8461	CS8481	CS8491	CS8492	CS8493	GE8291	HS8461	MA8391
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312818205002	ANBUCORDELIAH C	A+	O	O	O	O	A+	O	O	O
312818205003	ARAVIND PRABHU C	B	O	O	B+	B	B	A	O	B
312818205004	ARUNKUMAR M	A	O	O	A	A	A	A+	O	A+
312818205005	ARUNPRASAANTH B	A	O	O	A+	A+	A	A+	O	A+
312818205006	ASHWATH R	A	O	O	A+	A+	A	A+	O	A+
312818205007	BUVANESWARI K	A+	O	O	A+	A+	A+	A+	O	A+
312818205008	ESTHER SHARON	A	O	O	A+	A+	A+	O	O	A+
312818205009	GOKUL G	A+	O	O	A	A+	A	O	O	A+
312818205011	HARIPRAKASH G	A	O	O	A	A+	B+	A+	O	A
312818205012	JENISHA Y	A+	O	O	A	A+	A+	A+	O	B
312818205013	KAVIYA K	A	O	O	A	A+	A	A+	O	A+
312818205014	KAVIYADHARSHINI R	A	O	O	A+	A+	A+	A+	O	A
312818205015	KAVIYARASAN K	A	O	O	A+	O	A+	O	O	A+
312818205016	KEERTHANA R	A	O	O	A	A+	A+	A+	O	A+
312818205017	KESAVAN T	A+	O	O	A+	O	A+	O	O	O
312818205018	KIRUBAKARAN S	A+	O	O	A	O	O	O	O	O
312818205019	KISHORE M	B+	O	O	A	A	A	A+	O	B+
312818205020	MANIKANDAN P	B+	O	O	B+	B+	A	A+	O	B+
312818205021	MOHAMED SHAFEEK B	A+	O	O	A+	A+	A+	O	O	B+
312818205022	NANCY P	O	O	O	A+	O	O	O	O	A+
312818205023	PRANAV R	A+	O	O	O	O	O	O	O	O
312818205024	PUNITHA JANSI RANI R	O	O	O	A+	O	O	O	O	O
312818205025	PUSHPAKAVI S	A+	O	O	O	O	O	O	O	O
312818205026	RAGHUVARAN R	A+	O	O	A+	A	A	A+	O	A
312818205027	RAJASURENTHIRAN G M	O	O	O	O	O	O	O	O	O
312818205028	RAMANAN M	A	O	O	A	A	A	A+	O	B
312818205029	RISWAN YASAR J	A+	O	O	A+	A+	A+	A+	O	A+
312818205030	SANDHOSH A	A+	O	O	A	O	O	O	O	A+
312818205031	SARGURUNATHAN D	A+	O	O	A	A+	A+	A+	O	A
312818205032	SATHYANARAYANAN L	B	O	O	B	B+	B	A+	O	B
312818205033	SHALINI V	A	O	O	A+	A+	A+	O	O	A
312818205034	SHERLY BEULAH S	A+	O	O	O	O	O	O	O	O
312818205035	SHIVANAMBI MURUGESH	A+	O	O	A	A+	A+	A+	O	B+
312818205036	SIVAPRAKASH G	A+	O	O	A	O	A+	O	O	O
312818205037	SNEHA A	A+	O	O	A+	A+	A+	A+	O	A+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312818205038	SOORAJ H	B	O	O	B+	A	B+	A	O	B+
312818205039	SRIPRADOSH C	B+	O	O	B+	A	A	A+	O	A
312818205040	SURIYA S	A	O	O	A	O	A+	O	O	O
312818205041	SURYAPRAKASH D	O	O	O	O	O	O	O	O	O
312818205042	TAMILSELVAN V	A	O	O	A	A	A	A+	O	A+
312818205043	TIMO JACOB B	A+	O	O	A	A+	A+	A+	O	A+
312818205044	VELMURUGAN P	B	O	O	B+	B	B	A	O	B
312818205045	VINSELCIA D	A+	O	O	A+	O	O	O	O	O
312818205046	YOKESH K	A+	O	O	A	O	O	O	O	O

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 06** **DATE OF PUBLICATION :15-08-2020**

Branch : 205-B.Tech. Information Technology

	Subject Code - >	CS8091	CS8092	CS8582	CS8592	CS8662	HS8581	IT8076	IT8601	IT8602	IT8611
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817205002	ABITHA D	A	A	O	A+	O	O	O	A+	A+	O
312817205005	ARAVIND R	A+	A+	O	A+	O	O	O	A+	A+	O
312817205006	ARUNPRASATH P	B+	B+	O	B+	O	O	A+	A	B+	O
312817205007	ARUN PRASHANTH S	B+	B+	O	B+	O	O	A+	B+	B	O
312817205008	BALAKUMARAN P	O	O	O	O	O	O	O	O	O	O
312817205009	BHUVANESHWARAN SK	A+	A+	O	A+	O	O	A+	A+	A	O
312817205010	DHAMODHARAN P	A	B	O	B+	O	O	O	B+	B+	O
312817205011	DHARMARAJ K	A	B	O	B+	O	O	A+	A	B+	O
312817205012	GAYATHRI M	O	O	O	O	O	O	O	O	O	O
312817205013	GOKUL RAJ M	A	A+	O	A+	O	O	A	A	A	O
312817205014	GOPINATH R	O	O	O	O	O	O	O	O	O	O
312817205018	JEYADHARSHINI G	A+	A	O	A	O	O	O	A+	B+	O
312817205019	KALAISELVI V	O	O	O	O	O	O	O	O	O	O
312817205022	KAVI VENDHAN KS	B+	B	O	B	O	O	B	B	B+	O
312817205023	LAKSHMANAN P	O	O	O	O	O	O	O	O	O	O
312817205024	LAKSHMI K	A+	A+	O	A+	O	O	O	A+	A	O
312817205026	MONIKA SREE V	A	A	O	A+	O	O	A	A	B+	O
312817205027	MUKESH P	A+	A+	O	A+	O	O	O	A+	A+	O
312817205028	NAGARAJ G	O	O	O	O	O	O	O	O	O	O
312817205029	NIVETHA G	A+	A+	O	A+	O	O	O	A+	A+	O
312817205030	NIVI V	O	O	O	O	O	O	O	O	O	O
312817205031	PREETHIKA L	A+	A+	O	A+	O	O	O	A+	A+	O
312817205033	RAKESH KUMAR A	A	A	O	A	O	O	A+	A	A	O
312817205034	SIVA GURU M	A	B+	O	A	O	O	B+	B	A	O
312817205035	SRI RANJITH R	A+	A	O	A+	O	O	O	A	A	O
312817205036	STALIN MA	A	B+	O	B	O	O	B	B+	B+	O
312817205037	STEPHI SR	O	O	O	O	O	O	O	O	O	O
312817205042	VAIRAVI S	A+	A	O	A+	O	O	A	A+	A	O
312817205043	VARSHINI SREE JK	O	O	O	O	O	O	O	O	O	O
312817205044	VETRI E	O	O	O	O	O	O	O	O	O	O
312817205045	VINODHINI R	O	O	O	O	O	O	O	O	O	O
312817205046	YUVASRI S	O	O	O	O	O	O	O	A+	O	O

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 07** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 205-B.Tech. Information Technology

	Subject Code - >	CS6701	CS6703	IT6004	IT6701	IT6702	IT6711	IT6712	IT6713
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312815205008	BHARATH K	UA	UA	UA	UA	UA			
312815205018	JAYA SURYA R	UA	UA	UA	UA	UA			
312815205034	PRAVEEN KUMAR G	UA	UA	UA	UA	UA		C	
312816205001	AKAASH JAIKUMAR B	E	U	U	E	E	A	A	S
312816205002	BALAJI S	B	A	B	D	B	S	A	S
312816205003	DINESH RAJ R	C	C	C	C	E	A	A	A
312816205004	DURGALAKSHMI K	C	E	E	C	C	S	S	S
312816205005	GAYATHRI M	D	C	E	C	B	S	S	S
312816205006	GAYATHRI R	D	C	D	D	B	S	S	S
312816205007	GAYATHRI S	D	C	C	B	A	S	S	S
312816205008	JAYASURYA K	E	C	E	C	C	A	A	S
312816205009	KARTHICK M	C	C	B	B	B	S	S	S
312816205010	LINGAPRABHU S	B	B	C	D	B	S	S	S
312816205011	MAGESHWARI M	D	C	C	C	C	A	A	A
312816205013	MONISH ANAND J	D	C	D	C	U	A	A	A
312816205014	MUBINA S	B	B	C	C	B	A	S	A
312816205016	NITHIN J	E	D	E	E	C	A	A	S
312816205017	NIVETHA M D	D	C	E	C	C	A	S	S
312816205018	PABITHA PARAMESWARI P	B	B	C	C	B	S	S	S
312816205019	PRADEEP R	U	U	E	E	E	A	A	A
312816205020	PRAVIN KUMAR K A	D	D	D	E	B	A	A	A
312816205022	RENOLD KINGSELY R	E	E	C	C	B	A	S	S
312816205023	SEETHAIYAMMAL M	E	E	C	B	B	S	S	S
312816205024	SHANMATHI M	B	B	C	A	A	S	S	S
312816205025	SUMITHRA T	D	C	B	B	B	A	A	S
312816205026	SURENDRAN B	C	A	B	B	B	S	S	S
312816205027	THANGA SUGIRTHA A	C	B	B	C	B	S	S	S
312816205028	VAISHALI VAIBHAVI	B	B	C	D	B	S	S	S
312816205502	SUYAMBULINGAM S	E	E	C	E	E	A	A	A

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 01** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 205-B.Tech. Information Technology

	Subject Code - >	BS8161	CY8151	GE8151	GE8152	GE8161	HS8151	MA8151	PH8151
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817205002	ABITHA D							B	
312817205007	ARUN PRASHANTH S			B+				B	
312817205009	BHUVANESHWARAN SK							U	
312817205010	DHAMODHARAN P							U	
312817205011	DHARMARAJ K							U	
312817205018	JEYADHARSHINI G		B						U
312817205022	KAVI VENDHAN KS		B					U	B
312817205024	LAKSHMI K		U						
312817205026	MONIKA SREE V		U	B					
312817205031	PREETHIKA L							B	
312817205035	SRI RANJITH R							B+	
312817205036	STALIN MA							U	U
312817205042	VAIRAVI S							U	
312818205002	ANBUCORDELIAH C								B
312818205003	ARAVIND PRABHU C		U	B	U			U	U
312818205004	ARUNKUMAR M								B
312818205006	ASHWATH R							U	U
312818205009	GOKUL G								B
312818205013	KAVIYA K							U	B
312818205014	KAVIYADHARSHINI R							U	
312818205019	KISHORE M							B	
312818205020	MANIKANDAN P							U	
312818205028	RAMANAN M							B	
312818205029	RISWAN YASAR J				B			U	
312818205031	SARGURUNATHAN D							B	B
312818205032	SATHYANARAYANAN L							UA	U
312818205037	SNEHA A							U	A
312818205038	SOORAJ H		UA	UA	U			B	B
312818205039	SRIPRADOSH C			U				U	U
312818205042	TAMILSELVAN V		U						
312818205043	TIMO JACOB B							B	
312818205044	VELMURUGAN P		B	U	U			U	U
312818205045	VINSELCIA D							B	
312818205501	TAMIZHARASAN R		UA		UA			UA	UA
312819205001	ABINAYA Y	O	A	U	A	A+	B	B+	B+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312819205003	ADHITYA VARMAN V	O	B+	B+	A	O	B	A+	B+
312819205004	AKASH G	A	B	U	U	A	B	U	B
312819205005	AKILANDESWARI A	O	B+	U	B+	A+	B+	U	A
312819205006	BALAJI M	O	B+	U	B	A+	B+	U	B
312819205007	BHARATHKUMAR K	A	B	U	B	A+	B	U	B
312819205009	GOKUL R	A+	U	U	U	A+	B	U	B
312819205010	GURU MOORTHY J	O	B+	B	B+	O	A	B+	A+
312819205011	JAYA DURGA B	UA	UA	UA	UA	UA	UA	UA	UA
312819205012	KAVIYA DHARSHINI S	A	B	B	U	A	U	U	U
312819205013	KAVIYANJALI B	O	A+	B+	B+	O	B+	A	A+
312819205014	KEERTHANA D	O	A+	B+	O	O	A	A	O
312819205015	KRISHNA G	A+	A+	B	A+	O	B	B	B
312819205016	KRISHNA KUMAR S	O	A+	B+	A	O	U	B	B+
312819205017	MAHALAKSHMI M	UA	UA	UA	UA	UA	UA	UA	UA
312819205018	MANOJ KUMAR N	A+	B	B	B	A+	B	B	U
312819205019	MANOSRI R	A+	A	B	A+	A+	U	B	A
312819205020	MATHUMITHA V	O	A+	A	A+	O	B	A+	A+
312819205021	MOHAMMED FAROOK C	O	A+	B+	B+	O	B	B+	A+
312819205022	MOHANA SUNDRAM V	O	A	B+	A+	A+	B	A	B+
312819205023	NAVEEN N	O	B+	B+	B+	A+	B	U	B
312819205024	NILAVANI K	O	O	A	A	O	B+	U	A
312819205025	NITHIGA R	A	B+	B+	B	A+	U	B	U
312819205026	NITHIYAKALYANI G	A+	A	B+	A+	A+	B	B	B+
312819205027	POOJA S	O	A+	B+	B+	O	B+	A	A+
312819205028	POOJA S	O	A	B	A+	O	B+	A	B+
312819205029	PRADEEP V	O	B+	B	B+	A+	B	B	B+
312819205030	PRAVEEN JOSEPH RATNIAH E	O	B+	B	A+	O	B+	B+	B
312819205031	PREETHI R	UA	UA	UA	UA	UA	UA	UA	UA
312819205032	PREETHI S	B	B	U	U	A+	U	U	U
312819205033	PRINCY F	A	U	U	B	A+	U	U	B
312819205034	RANJITH S	A+	A	B	A+	O	B+	B+	B
312819205035	SAKTHIVEL S	A	B	U	U	A+	B	U	U
312819205036	SANDHIYA C	O	B	B+	B+	A+	U	B	U
312819205037	SARANRAJ P	B+	B	U	B+	A+	B	B	B
312819205038	SIVARAMAN E	B+	B	U	A+	A+	U	B	B
312819205039	SNEHASRI S V	B+	B	U	B	O	U	U	B
312819205040	SREE RAM U	A+	B+	U	B+	A+	B+	B	B
312819205041	SUBASH V	A+	B+	B	A	A+	B	U	B
312819205042	SURYA M								

312819205043	SWEADHA M	O	B	U	B+	A+	B	B	B
312819205044	TERMI ROSE A	UA	UA	UA	UA	UA	UA	UA	UA
312819205045	VAIBHAV U	A+	B+	B	A	A+	B	B	U
312819205046	VANATHI P	O	B+	B	A	O	B+	A+	A
312819205047	VASUNTHRA R	O	A	B+	A	A+	B	B	B
312819205049	YAMINI D	O	A+	B	A+	O	B+	A	A+
312819205050	YUVASRI S	O	A	B	B+	O	B	B	A

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 03** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 205-B.Tech. Information Technology

	Subject Code - >	CS8351	CS8381	CS8382	CS8383	CS8391	CS8392	EC8394	HS8381	MA8351
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817205005	ARAVIND R									U
312817205006	ARUNPRASATH P							U		
312817205007	ARUN PRASHANTH S					UA	U	U		U
312817205009	BHUVANESHWARAN SK					U		U		
312817205010	DHAMODHARAN P							B		U
312817205022	KAVI VENDHAN KS					B	U	B		U
312817205026	MONIKA SREE V	B				U		U		B
312817205033	RAKESH KUMAR A									B+
312817205034	SIVA GURU M	B						U		B
312817205035	SRI RANJITH R							B		B
312817205036	STALIN MA	U					B	U		U
312817205042	VAIRAVI S	B								B
312818205002	ANBUCORDELIAH C	B+	O	O	O	B	A	A	O	B+
312818205003	ARAVIND PRABHU C	B	A	B+	A	U	B	B	O	B
312818205004	ARUNKUMAR M	B	O	A+	O	U	B	B	O	B+
312818205005	ARUNPRASAANTH B	B	O	O	O	U	B	B	O	B
312818205006	ASHWATH R	U	O	O	O	B	B	B	O	B
312818205007	BUVANESWARI K	B+	A+	A+	A+	B	B	B	O	B
312818205008	ESTHER SHARON	B+	A+	O	A+	B	B+	A	O	A
312818205009	GOKUL G	B	O	O	O	B+	B	B+	O	B+
312818205011	HARIPRAKASH G	U	O	A+	A+	B	B	B	O	B
312818205012	JENISHA Y	U	A+	A+	A	B+	B+	B+	O	U
312818205013	KAVIYA K	U	A+	A+	O	B	A	B+	O	U
312818205014	KAVIYADHARSHINI R	B+	O	A+	A+	U	B+	B	O	B
312818205015	KAVIYARASAN K	B+	O	O	O	B	B+	B+	O	B+
312818205016	KEERTHANA R	U	O	A+	A+	B	B+	B	O	B
312818205017	KESAVAN T	U	O	O	O	B+	A	B	O	B
312818205018	KIRUBAKARAN S	B	O	O	O	B	A	B+	O	B
312818205019	KISHORE M	B	A+	B+	A	B	A	B	O	B
312818205020	MANIKANDAN P	U	A+	A+	A+	U	B+	B	O	U
312818205021	MOHAMED SHAFEEK B	B	O	O	O	B	B+	A	O	B
312818205022	NANCY P	B	O	O	A+	B+	B+	A+	O	B
312818205023	PRANAV R	A	O	O	O	B+	A	A+	O	B+
312818205024	PUNITHA JANSI RANI R	B	O	O	O	B	A	B+	O	B
312818205025	PUSHPAKAVI S	B	O	O	O	B	B+	A	O	B+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312818205026	RAGHUVARAN R	B+	O	O	O	B	B	B+	O	B
312818205027	RAJASURENTHIRAN G M	U	O	O	O	B	B+	A	O	U
312818205028	RAMANAN M	U	A+	A	A	U	B	B	O	U
312818205029	RISWAN YASAR J	B	O	A+	O	B	B	B+	O	B
312818205030	SANDHOSH A	B	O	O	O	B	B+	B+	O	B+
312818205031	SARGURUNATHAN D	B	O	A+	A+	B	U	B	O	B
312818205032	SATHYANARAYANAN L	U	A	A	A	U	U	U	O	B
312818205033	SHALINI V	B+	O	A+	O	B+	B+	A+	O	B+
312818205034	SHERLY BEULAH S	B+	O	O	O	B	B+	A	O	B+
312818205035	SHIVANAMBI MURUGESH	B	O	O	O	B	B	U	O	B
312818205036	SIVAPRAKASH G	B	O	O	O	B	B	B+	O	B
312818205037	SNEHA A	B	O	A+	O	B	B	B+	O	B
312818205038	SOORAJ H	B	A+	A	A+	U	U	U	O	B
312818205039	SRIPRADOSH C	B	A+	O	A+	U	B	B	O	B
312818205040	SURIYA S	B+	O	O	O	B	B+	B+	O	B
312818205041	SURYAPRAKASH D	B	O	O	O	A	B+	A	O	B
312818205042	TAMILSELVAN V	B	O	O	O	B	B	B+	O	B
312818205043	TIMO JACOB B	B	O	O	O	U	B	B+	O	B
312818205044	VELMURUGAN P	U	A+	A	A+	U	B	U	O	U
312818205045	VINSELCIA D	B+	O	O	A+	B+	A	A	O	B
312818205046	YOKESH K	B	O	O	O	B+	B+	A	O	B
312818205501	TAMIZHARASAN R	U	A	A	A	UA	B	B	O	U

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 05** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 205-B.Tech. Information Technology

	Subject Code - >	CS8494	CS8581	CS8591	EC8681	EC8691	IT8501	IT8511	MA8551	OMD553
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817205002	ABITHA D	A	O	B+	A+	U	B+	A+	B	B
312817205005	ARAVIND R	B	A+	B	O	U	U	A+	U	B
312817205006	ARUNPRASATH P	U	A+	B	A	U	B	A+	B	B
312817205007	ARUN PRASHANTH S	U	A+	U	A	U	U	O	U	U
312817205008	BALAKUMARAN P	B+	O	B+	O	A	A	O	U	A
312817205009	BHUVANESHWARAN SK	B+	A+	U	A	U	B	O	U	B
312817205010	DHAMODHARAN P	B	A	U	A	U	U	A+	U	U
312817205011	DHARMARAJ K	U	A+	U	A+	B	U	A+	U	A
312817205012	GAYATHRI M	A	O	A	O	B+	B+	O	B+	A+
312817205013	GOKUL RAJ M	B	O	U	A+	U	B	O	B	B
312817205014	GOPINATH R	B	O	B+	O	B+	B+	O	B+	A
312817205018	JEYADHARSHINI G	U	A+	U	A+	B	B	A+	U	B
312817205019	KALAISELVI V	B+	O	A	A+	B+	B	O	B+	A
312817205022	KAVI VENDHAN KS	U	A	U	B+	B	U	A+	U	B
312817205023	LAKSHMANAN P	B	O	A	O	B	A	O	B+	B+
312817205024	LAKSHMI K	U	O	U	O	B	B+	A+	B+	B
312817205026	MONIKA SREE V	U	A+	U	A	U	B	A+	B	B
312817205027	MUKESH P	B	O	B	A+	U	B+	O	B	B+
312817205028	NAGARAJ G	B+	O	A	O	B	A+	O	B+	A
312817205029	NIVETHA G	B+	O	A	A+	B	B	O	B	B+
312817205030	NIVI V	A	O	B+	O	B	B+	O	A+	B+
312817205031	PREETHIKA L	B	O	B	A+	B	B	O	B	B+
312817205033	RAKESH KUMAR A	B	A+	U	A+	U	B	A+	B	B
312817205034	SIVA GURU M	U	A+	U	A+	U	U	A+	B	B
312817205035	SRI RANJITH R	U	A+	U	A	B	B	A+	U	B+
312817205036	STALIN MA	B	A	B	B+	U	B	A	U	B
312817205037	STEPHI SR	A+	O	A	O	B	B	O	B	A+
312817205042	VAIRAVI S	B	A+	B+	A+	U	U	O	U	B
312817205043	VARSHINI SREE JK	A	O	A	O	B	A	O	A	B+
312817205044	VETRI E	B+	O	A	O	B	A	O	B	B+
312817205045	VINODHINI R	B+	O	A	A+	B	B+	O	B+	B+
312817205046	YUVASRI S	B+	O	B+	O	B	B+	O	B+	A

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

ANNA UNIVERSITY :: CHENNAI - 600025.
OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of April / May Examination,2020.

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 08** **DATE OF PUBLICATION :17-10-2020**

Branch : 205-B.Tech. Information Technology

	Subject Code - >	CS6004	GE6075	IT6801	IT6811	MG6088
Reg. Number	**Stud. Name**	**Grade**	**Grade**	**Grade**	**Grade**	**Grade**
312814205002	BHUVANESHWARAN S			D		
312814205010	RAJESHWARAN R	U	C	E	A	U
312814205015	VIJAY S	UA	D	UA	S	C
312815205007	BALAJI B	D	E	C		E
312815205008	BHARATH K	UA	UA	UA		D
312815205018	JAYA SURYA R	E	D	D		D
312815205034	PRAVEEN KUMAR G	E	UA	E		E
312816205001	AKAASH JAIKUMAR B	B	A	B	S	A
312816205002	BALAJI S	B	A	A	S	A
312816205003	DINESH RAJ R	B	B	C	S	B
312816205004	DURGALAKSHMI K	B	A	B	S	B
312816205005	GAYATHRI M	A	A	A	S	A
312816205006	GAYATHRI R	B	B	B	S	B
312816205007	GAYATHRI S	A	A	A	S	A
312816205008	JAYASURYA K	B	B	C	S	B
312816205009	KARTHICK M	A	A	B	S	A
312816205010	LINGAPRABHU S	B	B	A	S	A
312816205011	MAGESHWARI M	C	B	C	S	C
312816205013	MONISH ANAND J	B	B	B	S	C
312816205014	MUBINA S	C	B	C	S	C
312816205016	NITHIN J	C	B	B	S	B
312816205017	NIVETHA M D	B	B	C	S	C
312816205018	PABITHA PARAMESWARI P	A	B	A	S	B
312816205019	PRADEEP R	E	E	D	S	C
312816205020	PRAVIN KUMAR K A	B	B	B	S	C
312816205022	RENOLD KINGSELY R	B	B	B	S	B
312816205023	SEETHAIYAMMAL M	B	C	B	S	C
312816205024	SHANMATHI M	B	A	B	S	C
312816205025	SUMITHRA T	B	B	B	S	C
312816205026	SURENDRAN B	B	B	B	S	B
312816205027	THANGA SUGIRTHA A	B	A	A	S	B
312816205028	VAISHALI VAIBHAVI	A	A	A	S	B
312816205502	SUYAMBULINGAM S	C	C	B	S	D

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

IT8501	WEB TECHNOLOGY	L	T	P	C
		3	0	0	3

OBJECTIVES:

- To understand about client-server communication and protocols used during communication.
- To design interactive web pages using Scripting languages.
- To learn server side programming using servlets and JSP.
- To develop web pages using XML/XSLT.

UNIT I WEB SITE BASICS AND HTML 9

Web Essentials: Clients, Servers, and Communication. The Internet-Basic Internet Protocols -The World Wide Web-HTTP request message-response message-Web Clients Web Servers. Markup Languages: XHTML. An Introduction to HTML History-Versions-Basic XHTML Syntax and Semantics-Some Fundamental HTML Elements-Relative URLs-Lists-tables-Frames-Forms-HTML 5.0.

UNIT II CSS AND CLIENT SIDE SCRIPTING 9

Style Sheets: CSS-Introduction to Cascading Style Sheets-Features-Core Syntax-Style Sheets and HTML- Style Rule Cascading and Inheritance-Text Properties-Box Model Normal Flow Box Layout-Beyond the Normal Flow-CSS3.0. Client-Side Programming: The JavaScript Language-History and Versions Introduction JavaScript in Perspective-Syntax-Variables and Data Types-Statements-Operators-Literals-Functions-Objects-Arrays-Built-in Objects-JavaScript Debuggers.

UNIT III SERVER SIDE SCRIPTING 9

Host Objects: Browsers and the DOM-Introduction to the Document Object Model DOM History and Levels-Intrinsic Event Handling-Modifying Element Style-The Document Tree-DOM Event Handling-Accommodating Noncompliant Browsers Properties of window. Server-Side Programming: Java Servlets- Architecture -Overview-A Servlet-Generating Dynamic Content-Life Cycle- Parameter Data-Sessions-Cookies-URL Rewriting-Other Capabilities-Data Storage Servlets and Concurrency-Databases and Java Servlets.

UNIT IV JSP AND XML 9

Separating Programming and Presentation: JSP Technology Introduction-JSP and Servlets-Running JSP Applications Basic JSP-JavaBeans Classes and JSP-Tag Libraries and Files-Support for the Model-View-Controller Paradigm- Databases and JSP. Representing Web Data: XML-Documents and Vocabularies-Versions and Declaration-Namespaces- DOM based XML processing Event-oriented Parsing: SAX-Transforming XML Documents-Selecting XML Data: XPATH-Template based Transformations: XSLT-Displaying XML Documents in Browsers.

UNIT V AJAX AND WEB SERVICES 9

AJAX: Ajax Client Server Architecture-XML Http Request Object-Call Back Methods. Web Services: JAX-RPC-Concepts-Writing a Java Web Service-Writing a Java Web Service Client-Describing Web Services: WSDL- Representing Data Types: XML Schema-Communicating Object Data: SOAP Related Technologies-Software Installation-Storing Java Objects as Files.

TOTAL 45 PERIODS

OUTCOMES:

At the end of the course, the student should be able to:

- Design simple web pages using markup languages like HTML and XHTML.
- Create dynamic web pages using DHTML and java script that is easy to navigate and use.
- Program server side web pages that have to process request from client side web pages.
- Represent web data using XML and develop web pages using JSP.
- Understand various web services and how these web services interact.

TEXT BOOK:

1. Jeffrey C. Jackson, "Web Technologies--A Computer Science Perspective", Pearson Education, 2006.

REFERENCES

1. Robert. W. Sebesta, "Programming the World Wide Web", Fourth Edition,Pearson Education, 2007 .
2. Deitel, Deitel, Goldberg, "Internet & World Wide Web How To Program", Third Edition, Pearson Education, 2006.
3. Marty Hall and Larry Brown,‖ Core Web Programming‖ Second Edition, Volume I and II, Pearson Education, 2001.
4. Bates, -Developing Web Applications‖, Wiley, 2006

IT8076 SOFTWARE TESTING L T P C
3 0 0 3

OBJECTIVES:

- To learn the criteria for test cases.
- To learn the design of test cases.
- To understand test management and test automation techniques
- To apply test metrics and measurements.

UNIT I INTRODUCTION 9

Testing as an Engineering Activity – Testing as a Process – Testing Maturity Model- Testing axioms – Basic definitions – Software Testing Principles – The Tester‘s Role in a Software Development Organization – Origins of Defects – Cost of defects – Defect Classes – The Defect Repository and Test Design –Defect Examples- Developer/Tester Support of Developing a Defect Repository.

UNIT II TEST CASE DESIGN STRATEGIES 9

Test case Design Strategies – Using Black Box Approach to Test Case Design – Boundary Value Analysis – Equivalence Class Partitioning – State based testing – Cause-effect graphing – Compatibility testing – user documentation testing – domain testing - Random Testing – Requirements based testing – Using White Box Approach to Test design – Test Adequacy Criteria – static testing vs. structural testing – code functional testing – Coverage and Control Flow Graphs – Covering Code Logic – Paths – code complexity testing – Additional White box testing approaches- Evaluating Test Adequacy Criteria.

UNIT III LEVELS OF TESTING 9

The need for Levels of Testing – Unit Test – Unit Test Planning – Designing the Unit Tests – The Test Harness – Running the Unit tests and Recording results – Integration tests – Designing Integration Tests – Integration Test Planning – Scenario testing – Defect bash elimination System Testing – Acceptance testing – Performance testing – Regression Testing – Internationalization testing – Ad-hoc testing – Alpha, Beta Tests – Testing OO systems – Usability and Accessibility testing – Configuration testing –Compatibility testing – Testing the documentation – Website testing.

UNIT IV TEST MANAGEMENT 9

People and organizational issues in testing – Organization structures for testing teams – testing services – Test Planning – Test Plan Components – Test Plan Attachments – Locating Test Items – test management – test process – Reporting Test Results – Introducing the test specialist – Skills needed by a test specialist – Building a Testing Group- The Structure of Testing Group- .The Technical Training Program.

UNIT V TEST AUTOMATION 9

Software test automation – skills needed for automation – scope of automation – design and architecture for automation – requirements for a test tool – challenges in automation – Test metrics and measurements – project, progress and productivity metrics.

TOTAL: 45 PERIODS

OUTCOMES:

At the end of the course the students will be able to:

- Design test cases suitable for a software development for different domains.
- Identify suitable tests to be carried out.
- Prepare test planning based on the document.
- Document test plans and test cases designed.

- Use automatic testing tools.
- Develop and validate a test plan.

TEXT BOOKS:

1. Srinivasan Desikan and Gopalaswamy Ramesh, -Software Testing – Principles and Practices‖, Pearson Education, 2006.
2. Ron Patton, -Software Testing‖, Second Edition, Sams Publishing, Pearson Education, 2007.

REFERENCES:

1. Ilene Burnstein, -Practical Software Testing‖, Springer International Edition, 2003.
2. Edward Kit,‖ Software Testing in the Real World – Improving the Process‖, Pearson Education, 1995.
3. Boris Beizer,‖ Software Testing Techniques‖ – 2nd Edition, Van Nostrand Reinhold, New York, 1990.
4. Aditya P. Mathur, -Foundations of Software Testing _ Fundamental Algorithms and Techniques‖, Dorling Kindersley (India) Pvt. Ltd., Pearson Education, 2008.

CS8791 **CLOUD COMPUTING** **L T P C**
3 0 0 3

OBJECTIVES:

- To understand the concept of cloud computing.
- To appreciate the evolution of cloud from the existing technologies.
- To have knowledge on the various issues in cloud computing.
- To be familiar with the lead players in cloud.
- To appreciate the emergence of cloud as the next generation computing paradigm.

UNIT I INTRODUCTION 9

Introduction to Cloud Computing – Definition of Cloud – Evolution of Cloud Computing – Underlying Principles of Parallel and Distributed Computing – Cloud Characteristics – Elasticity in Cloud – On-demand Provisioning.

UNIT II CLOUD ENABLING TECHNOLOGIES 10

Service Oriented Architecture – REST and Systems of Systems – Web Services – Publish-Subscribe Model – Basics of Virtualization – Types of Virtualization – Implementation Levels of Virtualization – Virtualization Structures – Tools and Mechanisms – Virtualization of CPU – Memory – I/O Devices – Virtualization Support and Disaster Recovery.

UNIT III CLOUD ARCHITECTURE, SERVICES AND STORAGE 8

Layered Cloud Architecture Design – NIST Cloud Computing Reference Architecture – Public, Private and Hybrid Clouds - IaaS – PaaS – SaaS – Architectural Design Challenges – Cloud Storage – Storage-as-a-Service – Advantages of Cloud Storage – Cloud Storage Providers – S3.

UNIT IV RESOURCE MANAGEMENT AND SECURITY IN CLOUD 10

Inter Cloud Resource Management – Resource Provisioning and Resource Provisioning Methods – Global Exchange of Cloud Resources – Security Overview – Cloud Security Challenges – Software-as-a-Service Security – Security Governance – Virtual Machine Security – IAM – Security Standards.

UNIT V CLOUD TECHNOLOGIES AND ADVANCEMENTS 8

Hadoop – MapReduce – Virtual Box -- Google App Engine – Programming Environment for Google App Engine — Open Stack – Federation in the Cloud – Four Levels of Federation – Federated Services and Applications – Future of Federation.

TOTAL: 45 PERIODS

OUTCOMES:

On Completion of the course, the students should be able to:

- Articulate the main concepts, key technologies, strengths and limitations of cloud computing.
- Learn the key and enabling technologies that help in the development of cloud.
- Develop the ability to understand and use the architecture of compute and storage cloud, service and delivery models.
- Explain the core issues of cloud computing such as resource management and security.
- Be able to install and use current cloud technologies.
- Evaluate and choose the appropriate technologies, algorithms and approaches for implementation and use of cloud.

TEXT BOOKS:

1. Kai Hwang, Geoffrey C. Fox, Jack G. Dongarra, "Distributed and Cloud Computing, From Parallel Processing to the Internet of Things", Morgan Kaufmann Publishers, 2012.
2. Rittinghouse, John W., and James F. Ransome, -Cloud Computing: Implementation, M

REFERENCES:

1. Rajkumar Buyya, Christian Vecchiola, S. ThamaraiSelvi, -Mastering Cloud Computing‖, Tata Mcgraw Hill, 2013.
2. Toby Velte, Anthony Velte, Robert Elsenpeter, "Cloud Computing - A Practical Approach‖, Tata Mcgraw Hill, 2009.
3. George Reese, "Cloud Application Architectures: Building Applications and Infrastructure in the Cloud: Transactional Systems for EC2 and Beyond (Theory in Practice)‖, O'Reilly, 2009.

IT8601 COMPUTATIONAL INTELLIGENCE L T P C 3

OBJECTIVES:

- To provide a strong foundation on fundamental concepts in Computational Intelligence.
- To enable Problem-solving through various searching techniques.
- To apply these techniques in applications which involve perception, reasoning and learning.
- To apply Computational Intelligence techniques for information retrieval
- To apply Computational Intelligence techniques primarily for machine learning.

UNIT I INTRODUCTION 9

Introduction to Artificial Intelligence-Search-Heuristic Search-A* algorithm-Game Playing- Alpha-Beta Pruning-Expert systems-Inference-Rules-Forward Chaining and Backward Chaining- Genetic Algorithms.

UNIT II KNOWLEDGE REPRESENTATION AND REASONING 9

Proposition Logic - First Order Predicate Logic – Unification – Forward Chaining - Backward Chaining - Resolution – Knowledge Representation - Ontological Engineering - Categories and Objects – Events
- Mental Events and Mental Objects - Reasoning Systems for Categories - Reasoning with Default Information - Prolog Programming.

UNIT III UNCERTAINTY 9

Non monotonic reasoning-Fuzzy Logic-Fuzzy rules-fuzzy inference-Temporal Logic-Temporal Reasoning-Neural Networks-Neuro-fuzzy Inference.

UNIT IV LEARNING 9

Probability basics - Bayes Rule and its Applications - Bayesian Networks – Exact and Approximate Inference in Bayesian Networks - Hidden Markov Models - Forms of Learning - Supervised Learning - Learning Decision Trees – Regression and Classification with Linear Models - Artificial Neural Networks – Nonparametric Models - Support Vector Machines - Statistical Learning - Learning with Complete Data - Learning with Hidden Variables- The EM Algorithm – Reinforcement Learning

UNIT V INTELLIGENCE AND APPLICATIONS 9

Natural language processing-Morphological Analysis-Syntax analysis-Semantic Analysis-AIl applications – Language Models - Information Retrieval – Information Extraction - Machine Translation – Machine Learning - Symbol-Based – Machine Learning: Connectionist – Machine Learning.

TOTAL: 45 PERIODS

OUTCOMES:

Upon completion of the course, the students will be able to

- Provide a basic exposition to the goals and methods of Computational Intelligence.
- Study of the design of intelligent computational techniques.
- Apply the Intelligent techniques for problem solving
- Improve problem solving skills using the acquired knowledge in the areas of, reasoning, natural language understanding, computer vision, automatic

programming and machine learning.

TEXT BOOKS:

1. Stuart Russell, Peter Norvig, -Artificial Intelligence: A Modern Approach‖, Third Edition, Pearson Education / Prentice Hall of India, 2010.
2. Elaine Rich and Kevin Knight, -Artificial Intelligence‖, Third Edition, Tata McGraw-Hill, 2010.

REFERENCES:

1. Patrick H. Winston. "Artificial Intelligence", Third edition, Pearson Edition, 2006.
2. Dan W.Patterson, -Introduction to Artificial Intelligence and Expert Systems‖, PHI, 2006.
3. Nils J. Nilsson, -Artificial Intelligence: A new Synthesis‖, Harcourt Asia Pvt. Ltd., 2000.

IT8201 INFORMATION TECHNOLOGY ESSENTIALS L T P C 3

OBJECTIVES:

- To introduce the concept of Internet, Networks and its working principles.
- To know scripting languages.
- To understand various applications related to Information Technology.

UNIT I WEB ESSENTIALS 9

Creating a Website - Working principle of a Website - Browser fundamentals - Authoring tools - Types of servers: Application Server - Web Server - Database Server

UNIT II SCRIPTING ESSENTIALS 9

Need for Scripting languages - Types of scripting languages - Client side scripting - Server side scripting - PHP - Working principle of PHP - PHP Variables - Constants - Operators – Flow Control and Looping - Arrays - Strings - Functions - File Handling - PHP and MySQL - PHP and
HTML - Cookies - Simple PHP scripts

UNIT III NETWORKING ESSENTIALS 9

Fundamental computer network concepts - Types of computer networks - - Network layers - TCP/IP model - Wireless Local Area Network - Ethernet - WiFi - Network Routing - Switching - Network components

UNIT IV MOBILE COMMUNICATION ESSENTIALS 9

Cell phone working fundamentals - Cell phone frequencies & channels - Digital cell phone components - Generations of cellular networks - Cell phone network technologies / architecture - Voice calls & SMS

UNIT V APPLICATION ESSENTIALS 9

Creation of simple interactive applications - Simple database applications - Multimedia applications - Design and development of information systems – Personal Information System – Information retrieval system – Social networking applications

TOTAL: 45 PERIODS

OUTCOMES:

On Completion of the course, the students should be able to:

- Design and deploy web-sites
- Design and deploy simple web-applications
- Create simple database applications
- Develop information system
- Describe the basics of networking and mobile communications

TEXT BOOKS:

1. Robin Nixon, "Learning PHP, MySQL, JavaScript, CSS & HTML5" Third Edition, O'REILLY, 2014.
2. James F. Kurose, -Computer Networking: A Top-Down Approach‖, Sixth Edition, Pearson, 2012.

REFERENCES:

1. Gottapu Sasibhushana Rao, "Mobile Cellular Communication", Pearson, 2012.
2. R. Kelly Rainer , Casey G. Cegielski , Brad Prince, Introduction to Information Systems, Fifth Edition, Wiley Publication, 2014.
3. it-ebooks.org

MAE

2019-20

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
B.E. MECHANICAL AND AUTOMATION ENGINEERING
REGULATIONS - 2017
CHOICE BASED CREDIT SYSTEM
I TO VIII SEMESTERS CURRICULA AND SYLLABI

SEMESTER I

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	31	19	0	12	25

SEMESTER II

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8251	Materials Science	BS	3	3	0	0	3
4.	BE8253	Basic Electrical, Electronics and Instrumentation Engineering	ES	3	3	0	0	3
5.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
6.	GE8292	Engineering Mechanics	ES	5	3	2	0	4
PRACTICALS								
7.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8.	BE8261	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	ES	4	0	0	4	2
			TOTAL	30	20	2	8	25

SEMESTER - III

SL. No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
2.	ME8391	Engineering Thermodynamics	PC	5	3	2	0	4
3.	CE8394	Fluid Mechanics and Machinery	ES	4	4	0	0	4
4.	ME8351	Manufacturing Technology– I	PC	3	3	0	0	3
5.	EE8353	Electrical Drives and Controls	ES	3	3	0	0	3
6.	EC8396	Electronics and Microprocessors	ES	3	3	0	0	3
PRACTICAL								
7.	EE8361	Electrical Engineering Laboratory	ES	4	0	0	4	2
8.	EC8382	Electronics and Microprocessors Laboratory	ES	4	0	0	4	2
9.	HS8381	Interpersonal Skills/Listening & Speaking	EEC	2	0	0	2	1
			TOTAL	32	20	2	10	26

SEMESTER - IV

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MG8491	Operations Research	PC	3	3	0	0	3
2.	AN8401	Manufacturing System Management	PC	3	3	0	0	3
3.	CE8395	Strength of Materials for Mechanical Engineers	ES	3	3	0	0	3
4.	PR8451	Mechanics of Machines	PC	3	3	0	0	3
5.	ME8491	Engineering Metallurgy	PC	3	3	0	0	3
6.	ME8451	Manufacturing Technology –II	PC	3	3	0	0	3
PRACTICAL								
7.	CE8381	Strength of Materials and Fluid Mechanics & Machinery Laboratory	ES	4	0	0	4	2
8.	ME8461	Manufacturing Technology Laboratory	PC	4	0	0	4	2
9.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
			TOTAL	28	18	0	10	23

SEMESTER – V

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	CS8492	Database Management Systems	ES	3	3	0	0	3
2.	ME8593	Design of Machine Elements	PC	3	3	0	0	3
3.	ME8591	Applied Hydraulics and Pneumatics	PC	3	3	0	0	3
4.	AN8501	LAN and Networking	PC	3	3	0	0	3
5.		Open Elective - I	OE	3	3	0	0	3
PRACTICAL								
6.	AN8511	Dynamics and Metrology Laboratory	PC	4	0	0	4	2
7.	CS8481	Database Management Systems Laboratory	ES	4	0	0	4	2
8.	AN8512	LAN and Networking Laboratory	PC	4	0	0	4	2
			TOTAL	**27**	**15**	**0**	**12**	**21**

SEMESTER – VI

SL. No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MG8591	Principles of Management	HS	3	3	0	0	3
2.	AN8601	Thermal Engineering	PC	3	3	0	0	3
3.	ME8651	Design of Transmission Systems	PC	3	3	0	0	3
4.	ME8692	Finite Element Analysis	PC	3	3	0	0	3
5.	IE8591	Manufacturing Automation	PC	3	3	0	0	3
6.		Professional Elective – I	PE	3	3	0	0	3
PRACTICAL								
7.	AN8681	Automation Laboratory	PC	4	0	0	4	2
8.	ME8682	Design and Fabrication Project	EEC	4	0	0	4	2
9.	HS8581	Professional Communication	EEC	2	0	0	2	1
			TOTAL	**28**	**18**	**0**	**10**	**23**

SEMESTER – VII

SL. No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	ME8791	Mechatronics	PC	3	3	0	0	3
2.	ME8094	Computer Integrated Manufacturing Systems	PC	3	3	0	0	3
3.	AN8701	Measurements and Controls	PC	3	3	0	0	3
4.		Open Elective - II	OE	3	3	0	0	3
5.		Professional Elective – II	PE	3	3	0	0	3
6.		Professional Elective – III	PE	3	3	0	0	3
PRACTICAL								
7.	MF8761	Computer Aided Simulation and Analysis Laboratory	PC	4	0	0	4	2
8.	ME8781	Mechatronics Laboratory	PC	4	0	0	4	2
9.	AN8711	Technical Seminar	EEC	2	0	0	2	1
			TOTAL	**28**	**18**	**0**	**10**	**23**

SEMESTER – VIII

SL. No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	ME8099	Robotics	PC	3	3	0	0	3
2.		Professional Elective– IV	PE	3	3	0	0	3
3.		Professional Elective– V	PE	3	3	0	0	3
PRACTICAL								
4.	AN8811	Project Work	EEC	20	0	0	20	10
			TOTAL	**29**	**9**	**0**	**20**	**19**

TOTAL NUMBER OF CREDITS TO BE EARNED FOR AWARD OF THE DEGREE = 185

SEMESTER – VII

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	GE6757	Total Quality Management	3	0	0	3
2.	AN6701	Metal Cutting and Tool Design	3	1	0	4
3.	ME6702	Mechatronics	3	0	0	3
4.	ME6703	Computer Integrated Manufacturing Systems	3	0	0	3
5.		Elective – II	3	0	0	3
6.		Elective – III	3	0	0	3
PRACTICAL						
7.	MF6711	Computer Aided Simulation and Analysis Laboratory	0	0	3	2
8.	ME6712	Mechatronics Laboratory	0	0	3	2
9.	AN6711	Comprehension	0	0	2	1
		TOTAL	18	1	8	24

SEMESTER – VIII

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	ME6010	Robotics	3	0	0	3
2.		Elective – IV	3	0	0	3
3.		Elective – V	3	0	0	3
PRACTICAL						
4.	AN6811	Project Work	0	0	12	6
		TOTAL	9	0	12	15

TOTAL NUMBER OF CREDITS TO BE EARNED FOR AWARD OF THE DEGREE = 189

ELECTIVES FOR MECHANICAL AND AUTOMATION ENGINEERING

VI SEMESTER

Elective – I

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	ME6004	Unconventional Machining Processes	3	0	0	3
2.	MG6072	Marketing Management	3	0	0	3
3.	ME6002	Refrigeration and Air-conditioning	3	0	0	3
4.	ME6020	Vibration and Noise Control	3	0	0	3

ANNA UNIVERSITY :: CHENNAI - 600025.
OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of April / May Examination,2020 [R-2017].

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 02** **DATE OF PUBLICATION :15-08-2020**

Branch : 116-B.E. Mechanical and Automation Engineering

	Subject Code - >	BE8253	BE8261	GE8261	GE8291	GE8292	HS8251	MA8251	PH8251
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312819116001	AJITH KUMAR M K	B	O	O	A+	A+	B	A+	B+
312819116002	ARUN GANESH B	B+	O	O	A+	A+	B+	A+	A
312819116003	JAIDEEP S	A	O	O	A+	A	A+	A+	B
312819116004	JESPHERSON DASAN C	A	O	O	A+	A+	A+	A+	A+
312819116005	NANDHA KUMAR P	A	O	O	A+	A+	A+	A+	A+
312819116006	PRAKASH RAJ G	B	O	O	A	B	B	B	B
312819116007	PRIYA DHARSHAN E	B	O	O	B	B	B	B	B
312819116008	RAMACHANDRA PRABHU M	A	O	O	A+	B+	A	B+	A
312819116009	SARATHI E	A+	O	O	A+	A+	B+	B	A+
312819116010	VIJAYAKUMAR S	B	O	O	A	B	A	B	B

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 04** **DATE OF PUBLICATION :15-08-2020**

Branch : 116-B.E. Mechanical and Automation Engineering

	Subject Code - >	AN8401	CE8381	CE8395	HS8461	ME8451	ME8461	ME8491	MG8491	PR8451
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312818116001	AALAN SANTHOSH A	B	A+	B	A+	A	A+	A	B+	B
312818116002	ADITHYA NARAYANAN B	B+	A+	A	A+	B+	A+	B	A	A
312818116003	ARAVIND P	A	O	A	O	A+	O	A+	A+	A+
312818116004	ARAVINTHAN S	B	O	B+	O	A+	O	A+	B	A
312818116005	ARUN KUMAR R	A+	O	A+	O	A+	O	A+	A+	A+
312818116006	ARUTSELVAN R	A	O	A	O	A+	O	A+	A	A+
312818116007	BALAPRADEEP G	B	O	B+	O	A	O	A	B+	A+
312818116008	CHANDRU S	A+	O	A+	O	A+	O	A+	A+	A+
312818116009	DHINESH A	B+	O	A	O	A+	O	A+	A+	A+
312818116010	GANESAN M	B	O	B	O	A+	O	A+	B+	A
312818116011	GOKUL NATH M	A+	O	A+	O	A+	O	A	A+	A+
312818116012	HARISH B	A	O	A	O	A+	O	A	A	A
312818116013	JAIKISHAN J	A+	O	A+	O	A+	O	A+	A+	A+
312818116014	JAIKUMAR M	A	O	A	O	A+	O	B+	A+	A
312818116015	KARTHICK R	B	O	A	O	B+	O	A	A	B+
312818116016	KRISHNA R	A	O	A+	O	A+	O	A	A+	A+
312818116017	MERIT MILTON K	A+	O	A	O	A+	O	A+	A+	A+
312818116018	MUKILAN R	A	O	A+	O	A+	O	A+	A+	A
312818116019	NAVANEETHA KRISHNAN S	B	O	B+	O	A	O	A+	A+	A
312818116020	NAVEEN S	B+	A+	B+	A+	A	A+	A	B	A
312818116021	NAVEEN SUNDAR K	A+	O	A+	O	A+	O	A+	A+	A+
312818116022	PHILIP SOLOMON I	A	O	B	O	A	O	A	A+	A
312818116023	PRAVEEN KUMAR G	A	O	A+	O	A+	O	A	A	A
312818116024	RAHULKUMAR J	B+	O	A+	O	A+	O	A	A+	A+
312818116025	SAKTHIPRIYAN S	O	O	O	O	O	O	O	O	O
312818116026	SURESH G	B+	O	B+	O	A+	O	A	A+	A
312818116027	SURYA S	A	O	A	O	A+	O	A+	A+	A
312818116028	YOKESH RAJ M	B+	A+	B+	A+	A+	A+	A+	A	A

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 06** **DATE OF PUBLICATION :15-08-2020**

Branch : 116-B.E. Mechanical and Automation Engineering

	Subject Code - >	AN8001	AN8601	AN8681	HS8581	IE8591	ME8651	ME8682	ME8692	MG8591
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817116002	AKASH S	B	B	A+	A+	B	B	A+	B	B
312817116007	BALAJI R	B	A	O	O	B+	A	O	B+	A
312817116008	BALA MURUGAN L	O	O	O	O	O	O	O	O	O
312817116009	BHARATH RAJ M	O	O	O	O	O	O	O	O	O
312817116010	DHINAKARAN S	O	A+	O	O	O	A+	O	A	O
312817116011	DINESH V	A+	A	O	O	A	A+	O	A	B
312817116012	GANESH RAM S	O	O	O	O	O	O	O	O	O
312817116013	GOKUL PRAKASH J	O	B+	O	O	A	A	O	B	A
312817116014	GOKUL RAJ P	A+	B	O	O	A+	A	O	A+	A+
312817116015	GOPINATH M	A+	B+	O	O	A	A	O	B	B+
312817116016	HARINIVAS R M	O	A+	O	O	A+	A+	O	A+	A+
312817116017	HARISH KUMAR R	A+	A	O	O	A+	A+	O	A	B
312817116018	ILLAYARAJA B	B	A	O	O	A	A	O	B+	A
312817116019	JARESHIAH SAMUEL S	O	A	O	O	A+	A+	O	A+	A+
312817116020	KARTHIK S	A+	A	A+	A+	A+	A+	A+	A	A
312817116021	KATHIRVEL KANNAN K	O	A	O	O	A	A	O	A	A
312817116022	KISHORE G	A	A	O	O	B	B	O	B+	A
312817116023	KISHORE KUMAR M	B+	B+	A+	A+	A+	A	A+	B+	A+
312817116024	LENIN M	O	A+	O	O	A+	A+	O	A+	A+
312817116025	MIDHUN G B	O	O	O	O	O	O	O	O	O
312817116026	MOHAMED ASFAR A	O	A	O	O	A+	A+	O	A+	A+
312817116027	MUGILARASAN K	A	A	O	O	A	A+	O	B+	B+
312817116028	MUTHARASU D	A+	B+	A+	A+	B	A+	A+	A	B
312817116029	NIRMAL RAJ M	A+	A	O	O	A	A+	O	A+	A
312817116030	NITHYA K	O	A+	O	O	A+	A+	O	A+	A+
312817116032	RAJA SELVAN R	O	O	O	O	O	O	O	O	O
312817116034	RICHARD ROZARIO A	A	B	O	O	A	A	O	B+	A+
312817116036	SANTHOSIVAM J	O	A+	O	O	A+	A+	O	A+	A+
312817116037	SARAN RAJ R	O	A+	O	O	A+	A+	O	A+	A+
312817116039	SHEIK RIYAZ N	B	B	A+	A+	B	B	A+	B	B
312817116040	SUDHAN ANANDH A	O	O	O	O	O	O	O	O	A+
312817116043	SURYA NARAYANAN K	O	A	O	O	A+	A+	O	A+	A+
312817116044	VIGNESHWARAN N	A+	A	O	O	A+	A	O	A+	B+
312817116045	VIJAY NARAYANAN N	O	B+	O	O	O	B+	O	A+	B+
312817116046	VISHNU S	A+	A	O	O	A	A	O	A	A+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312817116047	YOGES S	A	A+	O	O	A	A+	O	B+	A
312817116301	AKASH S	B+	B	O	O	B	A	O	B	B
312817116501	AJITH G	B	B	A+	A+	B	B	A+	B	B

W - Withdrawal I - Inadequate Attendance

WH1 - Withheld for Suspected Malpractice WH(others) - Withheld for want of Clarification,approval,etc.

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 07** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 116-B.E. Mechanical and Automation Engineering

	Subject Code - >	AN6001	AN6701	AN6711	GE6757	ME6005	ME6702	ME6703	ME6712	MF6711
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312816116001	AJITH A S	E	D	B	U	E	D	U	E	C
312816116003	AJITH KUMAR P (02-03-1999)	C	C	S	C	C	U	D	S	S
312816116004	AJITH KUMAR P (15-05-1999)	E	E	C	U	E	U	E	C	C
312816116005	ANBARASAN N	B	B	S	B	A	C	B	S	S
312816116007	ARAVINDRAJ P	A	B	S	A	A	B	B	S	S
312816116009	BLESSING SAMUEL J S	B	C	A	C	B	C	E	A	B
312816116010	DHATCHINAMOORTHY S	D	C	S	D	E	E	D	A	A
312816116011	DINESH G	E	E	A	E	U	E	U	A	A
312816116012	DINESH KUMAR K	C	C	S	B	C	D	C	S	S
312816116013	GOKULAKRISHNAN K	C	D	S	U	E	C	E	A	A
312816116014	GURUMEGANATHAN R	C	E	A	D	U	E	E	B	A
312816116016	HARISH KUMAR S	C	U	A	C	U	U	D	A	A
312816116017	KARTHICK K	E	E	S	C	E	E	E	S	A
312816116018	MOHANAKRISHNAN M	C	C	S	C	D	E	U	S	S
312816116019	MOHAN BABU V	C	C	S	C	C	D	U	S	A
312816116021	MUTHURAJAN R	E	U	A	U	U	U	U	A	S
312816116022	NAVEEN KUMAR K	U	U	C	U	U	U	U	C	D
312816116024	PRAVEEN KUMAR V	D	E	S	D	U	D	D	A	C
312816116026	PREMKUMAR S	E	D	C	U	U	U	E	C	C
312816116027	RAGHUL N	D	E	A	U	C	E	C	B	S
312816116028	RAHUL R	C	D	S	C	E	C	C	S	S
312816116029	RANJITH KUMAR M	C	D	S	C	E	D	E	A	A
312816116030	ROSHAN AJIT	B	C	S	C	B	C	C	S	S
312816116031	SAKTHIKUMAR M	C	D	B	E	E	C	C	A	B
312816116032	SAKTHIVEL G	C	D	S	C	C	C	D	S	A
312816116034	SELVA KARUPPAIYA B	D	E	A	E	U	E	D	A	B
312816116035	SHEIK ABDULLAH S	C	D	S	C	C	C	D	S	B
312816116036	SHORN	C	A	S	D	C	B	D	S	S
312816116038	THIRUGNANAM T	E	D	A	U	E	D	D	A	B
312816116039	THIRUGNANASAMBANTHA M G	C	C	A	E	U	E	U	A	B
312816116040	VENGADESH S	U	U	B	U	U	U	U	C	C

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 01** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 116-B.E. Mechanical and Automation Engineering

	Subject Code - >	BS8161	CY8151	GE8151	GE8152	GE8161	HS8151	MA8151	PH8151
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817116002	AKASH S							U	U
312817116007	BALAJI R							U	U
312817116010	DHINAKARAN S							U	
312817116013	GOKUL PRAKASH J							B	B
312817116015	GOPINATH M		U					U	
312817116018	ILLAYARAJA B		U					U	
312817116019	JARESHIAH SAMUEL S							B+	
312817116020	KARTHIK S							U	U
312817116021	KATHIRVEL KANNAN K						U	U	B
312817116022	KISHORE G							U	
312817116023	KISHORE KUMAR M				UA			U	U
312817116027	MUGILARASAN K							U	B
312817116028	MUTHARASU D							U	U
312817116039	SHEIK RIYAZ N			UA				U	UA
312817116046	VISHNU S							U	
312817116047	YOGES S			B+				U	
312818116001	AALAN SANTHOSH A		U	U				U	U
312818116002	ADITHYA NARAYANAN B							U	UA
312818116004	ARAVINTHAN S		B					U	
312818116006	ARUTSELVAN R		U	U				B	U
312818116007	BALAPRADEEP G			U					
312818116009	DHINESH A							U	U
312818116010	GANESAN M							U	
312818116014	JAIKUMAR M							B	U
312818116015	KARTHICK R			U					B
312818116016	KRISHNA R							U	
312818116017	MERIT MILTON K							U	
312818116019	NAVANEETHA KRISHNAN S							U	
312818116020	NAVEEN S		U	U				U	
312818116027	SURYA S			U				U	
312818116028	YOKESH RAJ M		U					U	U
312819116001	AJITH KUMAR M K	A+	B+	U	A	O	B+	B	B+
312819116002	ARUN GANESH B	A+	B+	U	B+	A+	A	B	U
312819116003	JAIDEEP S	A+	B	B+	B	O	B+	U	B

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312819116004	JESPHERSON DASAN C	A+	A	U	A+	A+	B	B	U
312819116005	NANDHA KUMAR P	A	A	U	B	O	B+	B	B+
312819116006	PRAKASH RAJ G	B+	U	U	U	A	B+	U	U
312819116007	PRIYA DHARSHAN E	B	U	U	U	A	B	U	U
312819116008	RAMACHANDRA PRABHU M	A+	B+	B	B+	O	B	U	B+
312819116009	SARATHI E	A	B	B	B	A	B+	U	U
312819116010	VIJAYAKUMAR S	B	U	B	B	A	U	U	U

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 03** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 116-B.E. Mechanical and Automation Engineering

	Subject Code - >	CE8394	EC8382	EC8396	EE8353	EE8361	HS8381	MA8353	ME8351	ME8391
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817116002	AKASH S	UA		UA	UA			UA	UA	UA
312817116007	BALAJI R	U						UA		UA
312817116010	DHINAKARAN S							U		B+
312817116011	DINESH V	U						U		UA
312817116013	GOKUL PRAKASH J	U			U			U		UA
312817116014	GOKUL RAJ P									B
312817116015	GOPINATH M	U		UA	U			UA		UA
312817116017	HARISH KUMAR R	B								B
312817116018	ILLAYARAJA B	U			U			UA	B	UA
312817116019	JARESHIAH SAMUEL S	U						U		UA
312817116020	KARTHIK S	U		U				U		UA
312817116021	KATHIRVEL KANNAN K	UA						U	UA	U
312817116022	KISHORE G	U		U				UA		UA
312817116023	KISHORE KUMAR M	U		U	UA			UA	UA	U
312817116026	MOHAMED ASFAR A							U		U
312817116027	MUGILARASAN K	B			U			U	UA	U
312817116028	MUTHARASU D	U		U				UA		UA
312817116029	NIRMAL RAJ M	U						U		U
312817116034	RICHARD ROZARIO A	B			U			B		B
312817116036	SANTHOSIVAM J	U							UA	U
312817116039	SHEIK RIYAZ N	U		U	UA			UA	UA	UA
312817116043	SURYA NARAYANAN K									B
312817116044	VIGNESHWARAN N							UA		
312817116047	YOGES S				U			U		
312817116301	AKASH S				U			UA		UA
312818116001	AALAN SANTHOSH A	U	A	U	U	A+	O	U	U	U
312818116002	ADITHYA NARAYANAN B	B	A+	U	U	O	O	U	B	U
312818116003	ARAVIND P	B+	A	B+	B	O	O	B	B	B
312818116004	ARAVINTHAN S	B+	B+	B	B	A+	O	U	B	B
312818116005	ARUN KUMAR R	B+	O	B	B	O	O	B+	B	B+
312818116006	ARUTSELVAN R	B	A	B	B	O	O	U	U	B
312818116007	BALAPRADEEP G	A	A+	B	B	A+	O	B	B	B
312818116008	CHANDRU S	B	A+	B	B	O	O	B	B+	B
312818116009	DHINESH A	B	A	B	U	O	O	U	B	B
312818116010	GANESAN M	U	A+	B	U	A+	O	U	B	U

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312818116011	GOKUL NATH M	B+	A+	B	B	O	O	B	A	B+
312818116012	HARISH B	B+	B+	U	U	B+	O	U	B	B
312818116013	JAIKISHAN J	A+	O	B	B+	O	O	U	B+	B
312818116014	JAIKUMAR M	U	A	U	B	O	O	B	U	B
312818116015	KARTHICK R	B	B+	B	U	A+	O	B	U	U
312818116016	KRISHNA R	B	A	U	U	A+	O	U	B	B
312818116017	MERIT MILTON K	B+	A+	A	B	A+	O	U	A	U
312818116018	MUKILAN R	B	A	B+	B	A+	O	U	B	U
312818116019	NAVANEETHA KRISHNAN S	B	A	B	U	O	O	U	B	U
312818116020	NAVEEN S	B	O	B	U	B+	O	U	B	U
312818116021	NAVEEN SUNDAR K	A	O	A	B+	O	O	B	B+	B
312818116022	PHILIP SOLOMON I	B	B+	U	U	A	O	U	B	B
312818116023	PRAVEEN KUMAR G	B+	A+	U	U	O	O	U	B	U
312818116024	RAHULKUMAR J	B+	A+	B	B+	A+	O	B	B	B
312818116025	SAKTHIPRIYAN S	B+	O	A+	A	O	O	A+	A	B
312818116026	SURESH G	B+	A+	U	B	A+	O	B	U	U
312818116027	SURYA S	U	A	B	B+	A+	O	U	B	U
312818116028	YOKESH RAJ M	B	B+	U	B	A+	O	U	B	U

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 05** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 116-B.E. Mechanical and Automation Engineering

	Subject Code - >	AN8501	AN8511	AN8512	CS8481	CS8492	ME8591	ME8593	OAT552
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817116002	AKASH S	U	B	A	A	U	U	U	U
312817116007	BALAJI R	B	A	A	A+	U	B	U	B
312817116008	BALA MURUGAN L	B+	O	O	O	B	A	B	B+
312817116009	BHARATH RAJ M	B+	O	O	O	B	B+	B+	B+
312817116010	DHINAKARAN S	A	O	O	O	B	A	B	B
312817116011	DINESH V	B	A+	A	O	U	B+	B	B+
312817116012	GANESH RAM S	B+	O	O	O	B+	A	U	B+
312817116013	GOKUL PRAKASH J	U	A+	A	O	U	B	U	B
312817116014	GOKUL RAJ P	B	A+	A	A+	B	B+	U	B
312817116015	GOPINATH M	B	A	A	A+	U	B	U	B
312817116016	HARINIVAS R M	B+	O	O	O	B+	B+	B	U
312817116017	HARISH KUMAR R	U	A+	A	O	U	B	B	U
312817116018	ILLAYARAJA B	B	A+	A	A+	U	B+	U	B
312817116019	JARESHIAH SAMUEL S	B	A+	O	O	U	B+	U	B
312817116020	KARTHIK S	U	A+	A	O	U	B	U	U
312817116021	KATHIRVEL KANNAN K	U	A	A+	A+	U	B	B	B
312817116022	KISHORE G	B	A	A	A+	B	B+	B	B
312817116023	KISHORE KUMAR M	B	A+	A	A+	B	B+	U	B
312817116024	LENIN M	B+	O	A+	A+	B	B	B	U
312817116025	MIDHUN G B	B+	O	O	O	B+	A	B+	B
312817116026	MOHAMED ASFAR A	B+	O	O	O	U	B	U	U
312817116027	MUGILARASAN K	B	A+	A	A+	U	B+	U	U
312817116028	MUTHARASU D	U	A+	A+	A+	U	B	U	U
312817116029	NIRMAL RAJ M	U	O	O	O	B	B+	U	U
312817116030	NITHYA K	B+	O	O	O	B	B+	B	U
312817116032	RAJA SELVAN R	B+	O	O	O	B+	A	B+	A
312817116034	RICHARD ROZARIO A	B+	O	O	O	U	B	B	U
312817116036	SANTHOSIVAM J	B	O	O	O	U	B+	B+	B+
312817116037	SARAN RAJ R	B+	O	O	O	U	B+	B+	B
312817116039	SHEIK RIYAZ N	U	A	A	A	U	U	U	U
312817116040	SUDHAN ANANDH A	B+	O	O	O	B	B	A+	U
312817116043	SURYA NARAYANAN K	B+	A+	O	O	U	B	B	B
312817116044	VIGNESHWARAN N	B+	O	O	O	B	B+	U	U
312817116045	VIJAY NARAYANAN N	B+	O	O	O	B	B+	B	B+
312817116046	VISHNU S	B	A+	O	A+	B	B+	U	B

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312817116047	YOGES S	B	A+	A	A+	U	B+	U	B
312817116301	AKASH S	B	A+	A+	O	U	B	U	B
312817116501	AJITH G		UA		UA	UA	UA	UA	UA

W - Withdrawal I - Inadequate Attendance

WH1 - Withheld for Suspected Malpractice WH(others) - Withheld for want of Clarification,approval,etc.

ANNA UNIVERSITY :: CHENNAI - 600025.
OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of April / May Examination,2020.

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 08** **DATE OF PUBLICATION :17-10-2020**

Branch : 116-B.E. Mechanical and Automation Engineering

	Subject Code - >	AN6811	IE6605	ME6010	ME6012
Reg. Number	**Stud. Name**	**Grade**	**Grade**	**Grade**	**Grade**
312816116001	AJITH A S	A		D	U
312816116003	AJITH KUMAR P (02-03-1999)	S	C	B	B
312816116004	AJITH KUMAR P (15-05-1999)	S	E	D	E
312816116005	ANBARASAN N	S	A	A	B
312816116007	ARAVINDRAJ P	S	B	A	C
312816116009	BLESSING SAMUEL J S	A	C	C	C
312816116010	DHATCHINAMOORTHY S	S	E	D	E
312816116011	DINESH G	S	E	D	E
312816116012	DINESH KUMAR K	S	C	B	D
312816116013	GOKULAKRISHNAN K	S	C	C	C
312816116014	GURUMEGANATHAN R	S	C	C	E
312816116016	HARISH KUMAR S	B	D	C	D
312816116017	KARTHICK K	S	C	C	C
312816116018	MOHANAKRISHNAN M	B	C	C	B
312816116019	MOHAN BABU V	S	C	B	C
312816116021	MUTHURAJAN R	S	C	B	C
312816116022	NAVEEN KUMAR K	B	E	D	E
312816116024	PRAVEEN KUMAR V	S	C	C	E
312816116026	PREMKUMAR S	A	E	E	E
312816116027	RAGHUL N	S	C	C	D
312816116028	RAHUL R	S	C	B	C
312816116029	RANJITH KUMAR M	S	B	B	C
312816116030	ROSHAN AJIT	S	B	A	B
312816116031	SAKTHIKUMAR M	A	D	D	E
312816116032	SAKTHIVEL G	S	C	B	C
312816116034	SELVA KARUPPAIYA B	A	E	C	C
312816116035	SHEIK ABDULLAH S	S	C	B	B
312816116036	SHORN	S	B	B	B
312816116038	THIRUGNANAM T	S	E	E	E
312816116039	THIRUGNANASAMBANTHA M G	A	E	D	C
312816116040	VENGADESH S	A	E	E	E

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

27-11-2020

Anna University - COE

ME8351 MANUFACTURING TECHNOLOGY – I L T P C
3 0 0 3

OBJECTIVE:

- To introduce the concepts of basic manufacturing processes and fabrication techniques, such as metal casting, metal joining, metal forming and manufacture of plastic components.

UNIT I METAL CASTING PROCESSES 9

Sand Casting : Sand Mould – Type of patterns - Pattern Materials – Pattern allowances –Moulding sand Properties and testing – Cores –Types and applications – Moulding machines– Types and applications; Melting furnaces : Blast and Cupola Furnaces; Principle of special casting processes : Shell - investment – Ceramic mould – Pressure die casting - Centrifugal Casting - CO_2 process – Stir casting; Defects in Sand casting

UNIT II JOINING PROCESSES 9

Operating principle, basic equipment, merits and applications of: Fusion welding processes: Gas welding - Types – Flame characteristics; Manual metal arc welding – Gas Tungsten arc welding - Gas metal arc welding – Submerged arc welding – Electro slag welding; Operating principle and applications of: Resistance welding - Plasma arc welding – Thermit welding – Electron beam welding – Friction welding and Friction Stir Welding; Brazing and soldering; Weld defects: types, causes and cure.

UNIT III METAL FORMING PROCESSES 9

Hot working and cold working of metals – Forging processes – Open, impression and closed die forging – forging operations. Rolling of metals– Types of Rolling – Flat strip rolling – shape rolling operations – Defects in rolled parts. Principle of rod and wire drawing – Tube drawing – Principles of Extrusion – Types – Hot and Cold extrusion.

UNIT IV SHEET METAL PROCESSES 9

Sheet metal characteristics – shearing, bending and drawing operations – Stretch forming operations – Formability of sheet metal – Test methods –special forming processes-Working principle and applications – Hydro forming – Rubber pad forming – Metal spinning– Introduction of Explosive forming, magnetic pulse forming, peen forming, Super plastic forming – Micro forming

UNIT V MANUFACTURE OF PLASTIC COMPONENTS 9

Types and characteristics of plastics – Moulding of thermoplastics – working principles and typical applications – injection moulding – Plunger and screw machines – Compression moulding, Transfer Moulding – Typical industrial applications – introduction to blow moulding –Rotational moulding – Film blowing – Extrusion – Thermoforming – Bonding of Thermoplastics.

TOTAL: 45 PERIODS

OUTCOMES:

CO1 Explain different metal casting processes, associated defects, merits and demerits
CO2 Compare different metal joining processes.
CO3 Summarize various hot working and cold working methods of metals.
CO4 Explain various sheet metal making processes.
CO5 Distinguish various methods of manufacturing plastic components.

TEXT BOOKS:

1. Hajra Chouldhary S.K and Hajra Choudhury. AK., "Elements of workshop Technology", volume I and II, Media promoters and Publishers Private Limited, Mumbai, 2008
2. Kalpakjian. S, “Manufacturing Engineering and Technology”, Pearson Education India Edition, 2013

REFERENCES:

1. Gowri P. Hariharan, A.Suresh Babu, "Manufacturing Technology I", Pearson Education, 2008
2. Paul Degarma E, Black J.T and Ronald A. Kosher, "Materials and Processes, in Manufacturing" Eight Edition, Prentice – Hall of India, 1997.
3. Rao, P.N. "Manufacturing Technology Foundry, Forming and Welding", 4th Edition, TMH-2013
4. Roy. A. Lindberg, "Processes and Materials of Manufacture", PHI / Pearson education, 2006
5. Sharma, P.C., "A Text book of production Technology", S.Chand and Co. Ltd., 2014.

EE8353 ELECTRICAL DRIVES AND CONTROLS L T P C
3 0 0 3

OBJECTIVES:

- To understand the basic concepts of different types of electrical machines and their performance.
- To study the different methods of starting D.C motors and induction motors.
- To study the conventional and solid-state drives

UNIT I INTRODUCTION 8

Basic Elements – Types of Electric Drives – factors influencing the choice of electrical drives – heating and cooling curves – Loading conditions and classes of duty – Selection of power rating for drive motors with regard to thermal overloading and Load variation factors

UNIT II DRIVE MOTOR CHARACTERISTICS 9

Mechanical characteristics – Speed-Torque characteristics of various types of load and drive motors – Braking of Electrical motors – DC motors: Shunt, series and compound - single phase and three phase induction motors**.**

UNIT III STARTING METHODS 8

Types of D.C Motor starters – Typical control circuits for shunt and series motors – Three phase squirrel cage and slip ring induction motors.

UNIT IV CONVENTIONAL AND SOLID STATE SPEED CONTROL OF D.C. DRIVES 10

Speed control of DC series and shunt motors – Armature and field control, Ward-Leonard control system - Using controlled rectifiers and DC choppers –applications.

UNIT V CONVENTIONAL AND SOLID STATE SPEED CONTROL OF A.C. DRIVES 10

Speed control of three phase induction motor – Voltage control, voltage / frequency control, slip power recovery scheme – Using inverters and AC voltage regulators – applications.

TOTAL: 45 PERIODS

OUTCOME:

- Upon Completion of this subject, the students can able to explain different types of electrical machines and their performance

TEXT BOOKS:

1. Nagrath .I.J. & Kothari .D.P, “Electrical Machines”, Tata McGraw-Hill, 2006
2. Vedam Subrahmaniam, “Electric Drives (Concepts and Applications)”, Tata McGraw-Hill, 2010

REFERENCES:

1. Partab. H., “Art and Science and Utilisation of Electrical Energy”, Dhanpat Rai and Sons, 2017
2. Pillai.S.K “A First Course on Electric Drives”, Wiley Eastern Limited, 2012
3. Singh. M.D., K.B.Khanchandani, “Power Electronics”, Tata McGraw-Hill, 2006.

EC8396 **ELECTRONICS AND MICROPROCESSORS** **L T P C**
3 0 0 3

OBJECTIVE:

- To enable the students to understand the fundamental concepts of Semi Conductors, Transistors, Rectifiers, Digital Electronics and 8085 Microprocessors

UNIT I SEMICONDUCTORS AND RECTIFIERS 9

Classification of solids based on energy band theory-Intrinsic semiconductors-Extrinsic semiconductors-P type and N type- PN junction-Zenor effect-Zenor diode characteristics- Half wave and full wave rectifiers -Voltage regulation

UNIT II TRANSISTORS AND AMPLIFIERS 12

Bipolar junction transistor- CB, CE, CC configuration and characteristics-Biasing circuits- Class A, and C amplifiers- Field effect transistor-Configuration and characteristic of FET amplifier-SCR, Diac, Triac, UJT-Characteristics and simple applications-Switching transistors-Concept of feedback-Negative feedback-Application in temperature and motor speed control.

UNIT III DIGITAL ELECTRONICS 9

Binary number system - AND, OR, NOT, NAND, NOR circuits -Boolean algebra- Exclusive OR gate - Flip flops-Half and full adders-Registers-Counters-A/D and D/A conversion.

UNIT IV 8085 MICROPROCESSOR 9

Block diagram of microcomputer-Architecture of 8085-Pin configuration-Instruction set- Addressing modes-Simple programs using arithmetic and logical operations.

UNIT V INTERFACING AND APPLICATIONS OF MICROPROCESSOR 6

Basic interfacing concepts - Interfacing of Input and Output devices-Applications of microprocessor Temperature control, Stepper motor control, traffic light control.

TOTAL : 45 PERIODS

OUTCOMES:

- Ability to perform performing on 8085 Microprocessor to control devices
- Ability to use microcontroller and programming

TEXT BOOKS:

1. Milman and Halkias, “Integrated Electronics”, Tata McGraw-Hill publishers, 1995.
2. Ramesh Goankar, “Microprocessor Architecture, Programming and Applications with 8085”, Wiley Eastern, 1998.

REFERENCES:

1. Malvino and Leach, “Digital Principles and Applications”, Tata Mc Graw-Hill, 1996
2. Mehta V.K, “Principles of Electronics”, S. Chand and Company Ltd., 1994
3. Dougles V.Hall, “Microprocessor and Interfacing”, Programming and Hardware, Tata Mc Graw-Hill, 1999.
4. Salivahanan S, Suresh Kumar N, Vallavaraj A, “Electronic Devices and Circuits” First Edition, Tata Mc Graw-Hill, 1999

CE8395 **STRENGTH OF MATERIALS FOR MECHANICAL ENGINEERS** **L T P C**
3 0 0 3

OBJECTIVES:

- To understand the concepts of stress, strain, principal stresses and principal planes.
- To study the concept of shearing force and bending moment due to external loads in determinate beams and their effect on stresses.
- To determine stresses and deformation in circular shafts and helical spring due to torsion.
- To compute slopes and deflections in determinate beams by various methods.
- To study the stresses and deformations induced in thin and thick shells.

UNIT I STRESS, STRAIN AND DEFORMATION OF SOLIDS 9

Rigid bodies and deformable solids – Tension, Compression and Shear Stresses – Deformation of simple and compound bars – Thermal stresses – Elastic constants – Volumetric strains –Stresses on inclined planes – principal stresses and principal planes – Mohr's circle of stress.

UNIT II TRANSVERSE LOADING ON BEAMS AND STRESSES IN BEAM 9

Beams – types transverse loading on beams – Shear force and bending moment in beams – Cantilevers – Simply supported beams and over – hanging beams. Theory of simple bending– bending stress distribution – Load carrying capacity – Proportioning of sections – Flitched beams – Shear stress distribution.

UNIT III TORSION 9

Torsion formulation stresses and deformation in circular and hollows shafts – Stepped shafts– Deflection in shafts fixed at the both ends – Stresses in helical springs – Deflection of helical springs, carriage springs.

UNIT IV DEFLECTION OF BEAMS 9

Double Integration method – Macaulay's method – Area moment method for computation of slopes and deflections in beams - Conjugate beam and strain energy – Maxwell's reciprocal theorems.

UNIT V THIN CYLINDERS, SPHERES AND THICK CYLINDERS 9

Stresses in thin cylindrical shell due to internal pressure circumferential and longitudinal stresses and deformation in thin and thick cylinders – spherical shells subjected to internal pressure – Deformation in spherical shells – Lame's theorem.

TOTAL: 45 PERIODS

OUTCOMES:

Students will be able to

- Understand the concepts of stress and strain in simple and compound bars, the importance of principal stresses and principal planes.
- Understand the load transferring mechanism in beams and stress distribution due to shearing force and bending moment.
- Apply basic equation of simple torsion in designing of shafts and helical spring
- Calculate the slope and deflection in beams using different methods.
- Analyze and design thin and thick shells for the applied internal and external pressures.

TEXT BOOKS:

1. Bansal, R.K., "Strength of Materials", Laxmi Publications (P) Ltd., 2016
2. Jindal U.C., "Strength of Materials", Asian Books Pvt. Ltd., New Delhi, 2009

REFERENCES:

1. Egor. P.Popov "Engineering Mechanics of Solids" Prentice Hall of India, New Delhi, 2002
2. Ferdinand P. Been, Russell Johnson, J.r. and John J. Dewole "Mechanics of Materials",

Tata McGraw Hill Publishing ‘co. Ltd., New Delhi, 2005.
3. Hibbeler, R.C., "Mechanics of Materials", Pearson Education, Low Price Edition, 2013
4. Subramanian R., "Strength of Materials", Oxford University Press, Oxford Higher Education Series, 2010.

PR8451 MECHANICS OF MACHINES L T P C
3 0 0 3

OBJECTIVES:

- To understand the principles in the formation of mechanisms and their kinematics.
- To understand the effect of friction in different machine elements.
- To understand the importance of balancing and vibration.

UNIT I KINEMATICS OF MACHINES 9

Mechanisms – Terminology and definitions – kinematics inversions of 4 bar and slide crank chain – kinematics analysis in simple mechanisms – velocity and acceleration polygons – Cam and followers – classifications – displacement diagrams - layout of plate cam profiles – derivatives of followers motion

UNIT II GEARS and GEAR TRAINS 9

Spur gear – law of toothed gearing – involute gearing – Interchangeable gears – Gear tooth action interference and undercutting – nonstandard teeth – gear trains – parallel axis gears trains – epicyclic gear trains.

UNIT III FRICTION 9

Types of friction – Friction Drives -friction in screw threads – bearings – Friction clutches – Belt drives

UNIT IV BALANCING AND MECHANISM FOR CONTROL 9

Static and Dynamic balancing – Balancing of revolving and reciprocating masses – Balancing machines -Balancing a single cylinder engine – Balancing of Multi-cylinder inline, V-engines – Partial balancing in engines- Governors and Gyroscopic effects..

UNIT V VIBRATION 9

Free, forced and damped vibrations of single degree of freedom systems – force transmitted to supports – vibration Isolation – vibration absorption – torsional vibration of shafts – single and multirotor systems – geared shafts – critical speed of shafts.

TOTAL: 45 PERIODS

OUTCOMES:

Student will be able to

- Understand the principles in the formation of mechanisms and their kinematics.
- Understand the construction features of Gears and Gear Trains.
- Understand the effect of friction in different machine elements.
- Understand the importance of balancing.
- Understand the importance of Governors and Gyroscopic effects.
- Understand the importance of vibration.

TEXT BOOKS:

1. Ambekar A.G.,Mechanism and Machine Theory‖ Prentice Hall of India, New Delhi, 2007
2. Shigley J.E., Pennock G.R and Uicker J.J., Theory of Machines and Mechanisms, Oxford University Press, 2003

REFERENCES:

1. Ghosh.A, and A.K.Mallick, —Theory and Machine ‖, Affiliated East-West Pvt. Ltd., New Delhi, 1988.
2. Ramamurthi. V., "Mechanisms of Machine", Narosa Publishing House, 2005.

3. Rao.J.S. and Dukkipatti R.V. —Mechanisms and Machines ‖, Wiley-Eastern Ltd., New Delhi, 1998.
4. Robert L.Norton, "Design of Machinery", McGraw-Hill, 2012.
5. Thomas Bevan, —Theory of Machines‖, CBS Publishers and Distributors, 2010.

ME8491 ENGINEERING METALLURGY L T P C
3 0 0 3

OBJECTIVE:

- To impart knowledge on the structure, properties, treatment, testing and applications of metals and non-metallic materials so as to identify and select suitable materials for various engineering applications.

UNIT I ALLOYS AND PHASE DIAGRAMS 9

Constitution of alloys – Solid solutions, substitutional and interstitial – phase diagrams, Isomorphous, eutectic, eutectoid, peritectic, and peritectoid reactions, Iron – carbon equilibrium diagram. Classification of steel and cast Iron microstructure, properties and application.

UNIT II HEAT TREATMENT 9

Definition – Full annealing, stress relief, recrystallisation and spheroidising – normalising, hardening and Tempering of steel. Isothermal transformation diagrams – cooling curves superimposed on I.T. diagram CCR – Hardenability, Jominy end quench test - Austempering, martempering – case hardening, carburizing, Nitriding, cyaniding, carbonitriding – Flame and Induction hardening – Vacuum and Plasma hardening. .

UNIT III FERROUS AND NON-FERROUS METALS 9

Effect of alloying additions on steel- α and β stabilisers– stainless and tool steels – HSLA, Maraging steels – Cast Iron - Grey, white, malleable, spheroidal – alloy cast irons, Copper and copper alloys – Brass, Bronze and Cupronickel – Aluminium and Al-Cu – precipitation strengthening treatment – Bearing alloys, Mg-alloys, Ni-based super alloys and Titanium alloys.

UNIT IV NON-METALLIC MATERIALS 9

Polymers – types of polymer, commodity and engineering polymers – Properties and applications of various thermosetting and thermoplastic polymers (PP, PS, PVC, PMMA, PET,PC, PA, ABS, PI, PAI, PPO, PPS, PEEK, PTFE, Polymers – Urea and Phenol formaldehydes)- Engineering Ceramics – Properties and applications of Al_2O_3, SiC, Si_3N_4, PSZ and SIALON –Composites-Classifications-Metal Matrix and FRP - Applications of Composites.

UNIT V MECHANICAL PROPERTIES AND DEFORMATION MECHANISMS 9

Mechanisms of plastic deformation, slip and twinning – Types of fracture – Testing of materials under tension, compression and shear loads – Hardness tests (Brinell, Vickers and Rockwell), hardness tests, Impact test Izod and charpy, fatigue and creep failure mechanisms.

TOTAL: 45 PERIODS

OUTCOMES:

Upon the completion of this course the students will be able to

CO1 Explain alloys and phase diagram, Iron-Iron carbide diagram and steel classification.
CO2 Explain isothermal transformation, continuous cooling diagrams and different heat treatment processes.
CO3 Summarize the mechanism of plastic deformation and testing mechanical properties.
CO4 Clarify the effect of alloying elements on ferrous and non-ferrous metals.
CO5 Differentiate different non-mettalic materials.

TEXT BOOKS:

1. Avner,, S.H., “Introduction to Physical Metallurgy”, McGraw Hill Book Company,1997.
2. Williams D Callister, “Material Science and Engineering” Wiley India Pvt Ltd, Revised Indian Edition 2014

REFERENCES:

1. Kenneth G.Budinski and Michael K. Budinski, “Engineering Materials”, Prentice Hall of India Private Limited, 2010.
2. Raghavan.V, “Materials Science and Engineering”, Prentice Hall of India Pvt. Ltd., 2015.
3. U.C.Jindal : Material Science and Metallurgy, "Engineering Materials and Metallurgy", First Edition, Dorling Kindersley, 2012
4. Upadhyay. G.S. and Anish Upadhyay, “Materials Science and Engineering”, Viva Books Pvt. Ltd., New Delhi, 2006.

ME8451	MANUFACTURING TECHNOLOGY – II	L	T	P	C
		3	0	0	3

OBJECTIVES:

- To understand the concept and basic mechanics of metal cutting, working of standard machine tools such as lathe, shaping and allied machines, milling, drilling and allied machines, grinding and allied machines and broaching.
- To understand the basic concepts of Computer Numerical Control (CNC) of machine tools and CNC Programming

UNIT I THEORY OF METAL CUTTING 9

Mechanics of chip formation, single point cutting tool, forces in machining, Types of chip, cutting tools– nomenclature, orthogonal metal cutting, thermal aspects, cutting tool materials, tool wear, tool life, surface finish, cutting fluids and Machinability.

UNIT II TURNING MACHINES 9

Centre lathe, constructional features, specification, operations – taper turning methods, thread cutting methods, special attachments, machining time and power estimation. Capstan and turret lathes- tool layout – automatic lathes: semi automatic – single spindle : Swiss type, automatic screw type – multi spindle:

UNIT III SHAPER, MILLING AND GEAR CUTTING MACHINES 9

Shaper - Types of operations. Drilling ,reaming, boring, Tapping. Milling operations-types of milling cutter. Gear cutting – forming and generation principle and construction of gear milling , hobbing and gear shaping processes –finishing of gears.

UNIT IV ABRASIVE PROCESS AND BROACHING 9

Abrasive processes: grinding wheel – specifications and selection, types of grinding process– cylindrical grinding, surface grinding, centreless grinding and internal grinding- Typical applications – concepts of surface integrity, broaching machines: broach construction – push, pull, surface and continuous broaching machines

UNIT V CNC MACHINING 9

Numerical Control (NC) machine tools – CNC types, constructional details, special features, machining centre, part programming fundamentals CNC – manual part programming – micromachining – wafer machining.

TOTAL : 45 PERIODS

TEXT BOOKS:

1. Bhandari V, “Design of Machine Elements”, 4th Edition, Tata McGraw-Hill Book Co, 2016.
2. Joseph Shigley, Charles Mischke, Richard Budynas and Keith Nisbett “Mechanical Engineering Design”, 9th Edition, Tata McGraw-Hill, 2011.

REFERENCES:

1. Alfred Hall, Halowenko, A and Laughlin, H., “Machine Design”, Tata McGraw-Hill BookCo.(Schaum’s Outline), 2010
2. Ansel Ugural, “Mechanical Design – An Integral Approach", 1st Edition, Tata McGraw-Hill Book Co, 2003.
3. P.C. Gope, “Machine Design – Fundamental and Application”, PHI learning private ltd, New Delhi, 2012.
4. R.B. Patel, “Design of Machine Elements”, MacMillan Publishers India P Ltd., Tech-Max Educational resources, 2011.
5. Robert C. Juvinall and Kurt M. Marshek, “Fundamentals of Machine Design”, 4th Edition, Wiley, 2005
6. Sundararajamoorthy T. V. Shanmugam .N, “Machine Design”, Anuradha Publications, Chennai, 2015.

ME8591 APPLIED HYDRAULICS AND PNEUMATICS L T P C

3 0 0 3

OBJECTIVE:

- This course will give an appreciation of the fundamental principles, design and operation of hydraulic and pneumatic components and systems and their application in manufacturing and mechanical systems.

UNIT I FLUID POWER PRINCIPLES AND HYDRAULIC PUMPS 9

Introduction to Fluid power- Advantages and Applications- Fluid power systems – Types of fluids- Properties of fluids – Basics of Hydraulics – Pascal’s Law- Principles of flow – Friction loss- Work, Power and Torque. Problems Sources of Hydraulic power: Pumping Theory – Pump Classification- Construction, Working, Design, Advantages, Disadvantages, Performance, Selection criterion of Linear, Rotary- Fixed and Variable displacement pumps-Problems

UNIT II HYDRAULIC ACTUATORS AND VALVES 9

Hydraulic Actuators: Cylinders– Types and construction, Application, Hydraulic cushioning - Hydraulic motors Control Components: Direction control, Flow control and Pressure control valves-Types, Construction and Operation- Servo and Proportional valves - Applications – Types of actuation. Accessories: Reservoirs, Pressure Switches- Applications- Fluid Power ANSI Symbols - Problems

UNIT III HYDRAULIC SYSTEMS 9

Accumulators, Intensifiers, Industrial hydraulic circuits- Regenerative, Pump Unloading, Double-pump, Pressure Intensifier, Air-over oil, Sequence, Reciprocation, Synchronization, Fail-safe, Speed control, Hydrostatic transmission, Electro hydraulic circuits, Mechanical Hydraulic servo systems.

UNIT IV PNEUMATIC SYSTEMS 9

Properties of air– Perfect Gas Laws - Compressors- Filter, Regulator, Lubricator, Muffler, Air control Valves, Quick Exhaust valves, Pneumatic actuators, Design of pneumatic circuit cascade method- Electro pneumatic circuits, Introduction to Fluidics, Pneumatic logic circuits.

UNIT V TROUBLE SHOOTING AND APPLICATIONS 9

Installation, Selection, Maintenance, Trouble Shooting and Remedies in Hydraulic and Pneumatic systems. Design of hydraulic circuits for Drilling, Planning, Shaping, Surface grinding, Press and Forklift applications. Design of Pneumatic circuits for a Pick and Place application and tool handling in a CNC machine. - Low cost Automation – Hydraulic and Pneumatic power packs- case studies.

TOTAL: 45 PERIODS

OUTCOMES:

- Understanding operating principles and constructional features of hydraulic and pneumatic systems.
- Knowledge with selection of hydraulic / pneumatic components
- understanding of designing and layout of Hydraulic Power package and trouble shooting.

TEXT BOOK:

1. Anthony Esposito, “Fluid Power with Applications”, Prentice Hall, 2009.

REFERENCES:

1. Shanmugasundaram.K, “Hydraulic and Pneumatic Controls”, Chand & Co, 2006.
2. Majumdar, S.R., “Oil Hydraulics Systems- Principles and Maintenance”, Tata McGraw Hill, 2001
3. Majumdar, S.R., “Pneumatic Systems – Principles and Maintenance”, Tata Mc Graw Hill, 2007.
4. Dudelyt, A Pease and John J Pippenger, “Basic Fluid Power”, Prentice Hall, 1987.
5. Srinivasan.R, “Hydraulic and Pneumatic Controls”, Vijay Nicole Imprints, 2008.
6. Joji.P, “Pneumatic Controls”, John Wiley & Sons India, 2008

MG8591	PRINCIPLES OF MANAGEMENT	L	T	P	C
		3	0	0	3

OBJECTIVE:

- To enable the students to study the evolution of Management, to study the functions and principles of management and to learn the application of the principles in an organization

UNIT I INTRODUCTION TO MANAGEMENT AND ORGANIZATIONS 9

Definition of Management – Science or Art – Manager Vs Entrepreneur - types of managers - managerial roles and skills – Evolution of Management – Scientific, human relations , system and contingency approaches – Types of Business organization - Sole proprietorship, partnership, company-public and private sector enterprises - Organization culture and Environment – Current trends and issues in Management.

UNIT II PLANNING 9

Nature and purpose of planning – planning process – types of planning – objectives – setting objectives – policies – Planning premises – Strategic Management – Planning Tools and Techniques – Decision making steps and process.

UNIT III ORGANISING 9

Nature and purpose – Formal and informal organization – organization chart – organization structure – types – Line and staff authority – departmentalization – delegation of authority – centralization and decentralization – Job Design - Human Resource Management – HR Planning, Recruitment, selection, Training and Development, Performance Management , Career planning and management.

UNIT IV DIRECTING 9

Foundations of individual and group behaviour – motivation – motivation theories – motivational techniques – job satisfaction – job enrichment – leadership – types and theories of leadership – communication – process of communication – barrier in communication – effective communication – communication and IT.

UNIT V CONTROLLING 9

System and process of controlling – budgetary and non-budgetary control techniques – use of computers and IT in Management control – Productivity problems and management – control and performance – direct and preventive control – reporting.

TOTAL: 45 PERIODS

OUTCOME:

- Upon completion of the course, students will be able to have clear understanding of managerial functions like planning, organizing, staffing, leading & controlling and have same basic knowledge on international aspect of management

TEXT BOOKS:

1. JAF Stoner, Freeman R.E and Daniel R Gilbert "Management", 6th Edition, Pearson Education, 2004.
2. Stephen P. Robbins & Mary Coulter, "Management", Prentice Hall (India)Pvt. Ltd., 10th Edition, 2009.

REFERENCES:

1. Harold Koontz & Heinz Weihrich, "Essentials of Management", Tata McGraw Hill, 1998.
2. Robert Kreitner & Mamata Mohapatra, "Management", Biztantra, 2008.
3. Stephen A. Robbins & David A. Decenzo & Mary Coulter, "Fundamentals of Management", 7th Edition, Pearson Education, 2011.
4. Tripathy PC & Reddy PN, "Principles of Management", Tata Mcgraw Hill, 1999

ME8651	DESIGN OF TRANSMISSION SYSTEMS	L	T	P	C
		3	0	0	3

OBJECTIVES:

- To gain knowledge on the principles and procedure for the design of Mechanical power Transmission components.
- To understand the standard procedure available for Design of Transmission of Mechanical elements
- To learn to use standard data and catalogues (Use of P S G Design Data Book permitted)

UNIT I DESIGN OF FLEXIBLE ELEMENTS 9

Design of Flat belts and pulleys - Selection of V belts and pulleys – Selection of hoisting wire

ropes and pulleys – Design of Transmission chains and Sprockets.

UNIT II SPUR GEARS AND PARALLEL AXIS HELICAL GEARS 9

Speed ratios and number of teeth-Force analysis -Tooth stresses - Dynamic effects – Fatigue strength - Factor of safety - Gear materials – Design of straight tooth spur & helical gears based on strength and wear considerations – Pressure angle in the normal and transverse plane-Equivalent number of teeth-forces for helical gears.

UNIT III BEVEL, WORM AND CROSS HELICAL GEARS 9

Straight bevel gear: Tooth terminology, tooth forces and stresses, equivalent number of teeth. Estimating the dimensions of pair of straight bevel gears. Worm Gear: Merits and demerits-terminology. Thermal capacity, materials-forces and stresses, efficiency, estimating the size of the worm gear pair. Cross helical: Terminology-helix angles-Estimating the size of the pair of cross helical gears.

UNIT IV GEAR BOXES 9

Geometric progression - Standard step ratio - Ray diagram, kinematics layout -Design of sliding mesh gear box - Design of multi speed gear box for machine tool applications - Constant mesh gear box - Speed reducer unit. – Variable speed gear box, Fluid Couplings, Torque Converters for automotive applications.

UNIT V CAMS, CLUTCHES AND BRAKES 9

Cam Design: Types-pressure angle and under cutting base circle determination-forces and surface stresses. Design of plate clutches –axial clutches-cone clutches-internal expanding rim clutches-Electromagnetic clutches. Band and Block brakes - external shoe brakes – Internal expanding shoe brake.

TOTAL : 45 PERIODS

OUTCOMES:

Upon the completion of this course the students will be able to

CO1 apply the concepts of design to belts, chains and rope drives.
CO2 apply the concepts of design to spur, helical gears.
CO3 apply the concepts of design to worm and bevel gears.
CO4 apply the concepts of design to gear boxes .
CO5 apply the concepts of design to cams, brakes and clutches

TEXT BOOKS:

1. Bhandari V, “Design of Machine Elements”, 4th Edition, Tata McGraw-Hill Book Co, 2016.
2. Joseph Shigley, Charles Mischke, Richard Budynas and Keith Nisbett “Mechanical Engineering Design”, 8th Edition, Tata McGraw-Hill, 2008.

OUTCOMES:

CO1 Summarize the basics of finite element formulation.
CO2 Apply finite element formulations to solve one dimensional Problems.
CO3 Apply finite element formulations to solve two dimensional Problems.
CO4 Apply finite element method to solve heat transfer and fluid mechanics problems.
CO5 Apply finite element method to solve problems on dynamic analysis.

TEXT BOOKS:

1. Reddy. J.N., "An Introduction to the Finite Element Method", 3rd Edition, Tata McGraw-Hill, 2005
2. Seshu, P, "Text Book of Finite Element Analysis", Prentice-Hall of India Pvt. Ltd., New Delhi, 2007.

REFERENCES:

1. Bhatti Asghar M, "Fundamental Finite Element Analysis and Applications", John Wiley & Sons, 2005 (Indian Reprint 2013)*
2. Chandrupatla & Belagundu, "Introduction to Finite Elements in Engineering", 3rd Edition, Prentice Hall College Div, 1990
3. Logan, D.L., "A first course in Finite Element Method", Thomson Asia Pvt. Ltd., 2002
4. Rao, S.S., "The Finite Element Method in Engineering", 3rd Edition, Butterworth Heinemann, 2004
5. Robert D. Cook, David S. Malkus, Michael E. Plesha, Robert J. Witt, "Concepts and Applications of Finite Element Analysis", 4th Edition, Wiley Student Edition, 2002.

IE8591 MANUFACTURING AUTOMATION L T P C
3 0 0 3

OBJECTIVES:

- To give a brief exposure to automation principles and control technologies.
- To introduce the concept of fixed automation using transfer lines.
- To train the students in the programmable automation such as CNC and industrial robotics.
- To provide knowledge on the use of automated material handling, storage and data capture

UNIT I MANUFACTURING OPERATIONS 9

Automation in production systems, principles and strategies, Product/production relationships, Production concepts and mathematical models, manufacturing economics.

UNIT II CONTROL TECHNOLOGIES 9

Automated systems – elements, functions, levels, Continuous Vs discrete control, Computer process control, Sensors, Actuators, ADC, DAC, Programmable logic controllers – ladder logic diagrams.

UNIT III TRANSFER LINES 9

Automated production lines – applications, Analysis – with and without buffers, automated assembly systems, line unbalancing concept.

UNIT IV NUMERICAL CONTROL AND ROBOTICS 9

NC - CNC – Part programming – DNC – Adaptive control – Robot anatomy – Specifications –End effectors – Industrial applications.

UNIT V AUTOMATED HANDLING AND STORAGE 9

Automated guided vehicle systems, AS/RS, Carousel storage, Automatic data capture - Bar code technology.

TOTAL: 45 PERIODS

OUTCOMES:

- Ability to understand the requirements of automation in manufacturing systems.
- Knowledge in the techniques of machinery automation, shop floor automation.
- Selection of material handling systems for automated industries.
- Gaining basic knowledge in CAD systems.

TEXT BOOK:

1. Mikell P.Groover, Automation, "Production Systems and Computer Integrated Manufacturing" PHI, 2008.

REFERENCE:

1. Mikell P.Groover, Emory W. Zimmers, Jr., "CAD/CAM: Computer - Aided Design and Manufacturing", PHI, 2007

ME8791	MECHATRONICS	L	T	P	C
		3	0	0	3

OBJECTIVE:

- To impart knowledge about the elements and techniques involved in Mechatronics systems which are very much essential to understand the emerging field of automation.

UNIT I INTRODUCTION 9

Introduction to Mechatronics – Systems – Concepts of Mechatronics approach – Need for Mechatronics – Emerging areas of Mechatronics – Classification of Mechatronics. Sensors and Transducers**:** Static and dynamic Characteristics of Sensor, Potentiometers – LVDT – Capacitance sensors – Strain gauges – Eddy current sensor – Hall effect sensor – Temperature sensors – Light sensors

UNIT II MICROPROCESSOR AND MICROCONTROLLER 9

Introduction – Architecture of 8085 – Pin Configuration – Addressing Modes –Instruction set, Timing diagram of 8085 – Concepts of 8051 microcontroller – Block diagram,.

UNIT III PROGRAMMABLE PERIPHERAL INTERFACE 9

Introduction – Architecture of 8255, Keyboard interfacing, LED display –interfacing, ADC and DAC interface, Temperature Control – Stepper Motor Control – Traffic Control interface.

UNIT IV PROGRAMMABLE LOGIC CONTROLLER 9

Introduction – Basic structure – Input and output processing – Programming – Mnemonics – Timers, counters and internal relays – Data handling – Selection of PLC.

UNIT V ACTUATORS AND MECHATRONIC SYSTEM DESIGN 9

Types of Stepper and Servo motors – Construction – Working Principle – Advantages and Disadvantages. Design process-stages of design process – Traditional and Mechatronics design concepts – Case studies of Mechatronics systems – Pick and place Robot – Engine Management system – Automatic car park barrier.

TOTAL : 45 PERIODS

OUTCOMES:

Upon the completion of this course the students will be able to

CO1 Discuss the interdisciplinary applications of Electronics, Electrical, Mechanical and Computer Systems for the Control of Mechanical, Electronic Systems and sensor technology.

CO2 Discuss the architecture of Microprocessor and Microcontroller, Pin Diagram, Addressing Modes of Microprocessor and Microcontroller.

CO3 Discuss Programmable Peripheral Interface, Architecture of 8255 PPI, and various device interfacing

CO4 Explain the architecture, programming and application of programmable logic controllers to problems and challenges in the areas of Mechatronic engineering.

CO5 Discuss various Actuators and Mechatronics system using the knowledge and skills acquired through the course and also from the given case studies

TEXT BOOKS:

1. Bolton, “Mechatronics”, Printice Hall, 2008
2. Ramesh S Gaonkar, “Microprocessor Architecture, Programming, and Applications with the 8085”, 5th Edition, Prentice Hall, 2008.

REFERENCES:

1. Bradley D.A, Dawson D, Buru N.C and Loader A.J, “Mechatronics”, Chapman and Hall, 1993.
2. Clarence W, de Silva, "Mechatronics" CRC Press, First Indian Re-print, 2013
3. Devadas Shetty and Richard A. Kolk, “Mechatronics Systems Design”, PWS publishing company, 2007.
4. Krishna Kant, “Microprocessors & Microcontrollers”, Prentice Hall of India, 2007.
5. Michael B.Histand and Davis G.Alciatore, “Introduction to Mechatronics and Measurement systems”, McGraw Hill International edition, 2007.

ME8094	COMPUTER INTEGRATED MANUFACTURING SYSTEMS	L	T	P	C
		3	0	0	3

OBJECTIVE:

- To understand the application of computers in various aspects of Manufacturing viz., Design, Proper planning, Manufacturing cost, Layout & Material Handling system.

UNIT I INTRODUCTION 9

Brief introduction to CAD and CAM – Manufacturing Planning, Manufacturing control- Introduction to CAD/CAM – Concurrent Engineering-CIM concepts – Computerised elements of CIM system – Types of production - Manufacturing models and Metrics – Mathematical models of Production Performance – Simple problems – Manufacturing Control – Simple Problems – Basic Elements of an Automated system – Levels of Automation – Lean Production and Just-In-Time Production.

UNIT II PRODUCTION PLANNING AND CONTROL AND COMPUTERISED PROCESS PLANNING 9

Process planning – Computer Aided Process Planning (CAPP) – Logical steps in Computer Aided Process Planning – Aggregate Production Planning and the Master Production Schedule – Material Requirement planning – Capacity Planning- Control Systems-Shop Floor Control-Inventory Control – Brief on Manufacturing Resource Planning-II (MRP-II) & Enterprise Resource Planning (ERP) - Simple Problems.

UNIT III CELLULAR MANUFACTURING 9

Group Technology(GT), Part Families – Parts Classification and coding – Simple Problems in Opitz Part Coding system – Production flow Analysis – Cellular Manufacturing – Composite part concept – Machine cell design and layout – Quantitative analysis in Cellular Manufacturing – Rank Order Clustering Method - Arranging Machines in a GT cell – Hollier Method – Simple Problems.

UNIT IV FLEXIBLE MANUFACTURING SYSTEM (FMS) AND AUTOMATED GUIDED VEHICLE SYSTEM (AGVS) 9

Types of Flexibility - FMS – FMS Components – FMS Application & Benefits – FMS Planning and Control– Quantitative analysis in FMS – Simple Problems. Automated Guided Vehicle System (AGVS) – AGVS Application – Vehicle Guidance technology – Vehicle Management & Safety.

UNIT V INDUSTRIAL ROBOTICS 9

Robot Anatomy and Related Attributes – Classification of Robots- Robot Control systems – End Effectors – Sensors in Robotics – Robot Accuracy and Repeatability - Industrial Robot Applications – Robot Part Programming – Robot Accuracy and Repeatability – Simple Problems.

TOTAL : 45 PERIODS

OUTCOMES:

CO1 Explain the basic concepts of CAD, CAM and computer integrated manufacturing systems
CO2 Summarize the production planning and control and computerized process planning
CO3 Differentiate the different coding systems used in group technology
CO4 Explain the concepts of flexible manufacturing system (FMS) and automated guided vehicle (AGV) system
CO5 Classification of robots used in industrial applications

TEXT BOOKS:

1. Mikell.P.Groover “Automation, Production Systems and Computer Integrated Manufacturing”, Prentice Hall of India, 2008.
2. Radhakrishnan P, Subramanyan S.and Raju V., “CAD/CAM/CIM”, 2nd Edition, New Age International (P) Ltd, New Delhi, 2000.

REFERENCES:

1. Gideon Halevi and Roland Weill, “Principles of Process Planning – A Logical Approach” Chapman & Hall, London, 1995.
2. Kant Vajpayee S, “Principles of Computer Integrated Manufacturing”, Prentice Hall India.
3. Rao. P, N Tewari &T.K. Kundra, “Computer Aided Manufacturing”, Tata McGraw Hill Publishing Company, 2000.

AN8701 MEASUREMENTS AND CONTROLS L T P C
3 0 0 3

OBJECTIVES:

- To understand the principle and use of sensors for measurement of different parameters.
- To understand the concept of feedback control systems and their applications.

UNIT I MEASUREMENTS 9

General concepts - Units and standards - Measuring instruments - sensitivity, readability, range accuracy, precision - static and dynamic response - repeatability hysteresis - systematic and random errors - correction - calibration.

UNIT II INSTRUMENTS 9

Transducer, Modifying (intermediate) and Terminal stages - Mechanical and electrical transducers - preamplifiers - charge amplifiers - filters - attenuaters - D' Arsonval CRO - Oscillographs - records - micro processor based data logging, processing and output.

UNIT III PARAMETERS FOR MEASUREMENT 9

Dimension, displacement velocity, acceleration, impact - Force, torque, power – strain pressure- humidity- temperature - flow-Time, frequency and phase angle - noise and sound level. Radio tracer techniques - Flow visualization - shadow-graph interferometer, Schlieren, Laser doppler anemometer.

UNIT IV AUTOMATIC CONTROL SYSTEMS 9

Basic elements - feedback principle implication of measurements - Error detectors final actuating elements - Two position, multi position, floating, pro-portional controls relays – seNO amplifiers - seNO motors - mechanical, Electrical, magnetic, electronic, hydraulic, pneumatic systems.

UNIT V APPLICATION OF CONTROL SYSTEMS 9

Governing of speed kinetic and process control- pressure, temperature, fluid level, flow thrust and flight control - photo electric controls.

TOTAL : 45 PERIODS

OUTCOMES:

Understanding terminologies of Mechanical Measurements.

- Gaining knowledge of parameters of Mechanical Measurements.
- Usage of Automobile control of mechanisms in measurements of mechanical parameters.

TEXT BOOKS:

1. Doeblin. E.O., "Measurement Systems, Application and Design", 4th Edition., Mc Graw Hillint. Edition, 1990.
2. Nagarath. I.J. and Gopal. M., "Control Systems Engineering", 2nd Edition John Wiley & Sons, Ch.1-4, 1982.

REFERENCES:

1. Beckwith. T.G and Buck. N.L., "Mechanical Measurements", Addision Wesley Pub, Co.,1969.
2. Bureau. W.H., "What the printer should know about paper", GATF, 1983.
3. Casey.J.P., "Edition. Pulp and Paper, Chemistry & Chemical Technology", Vol. Wiley- Interscience Publication, 1981.
4. Holman. J.P. and N.J.Gajda Jr., "Experimental Methods for Engineers", McGraw Hill Int. Edition, 5th Edition, 1989.

AN8001 METAL CUTTING AND TOOL DESIGN L T P C
3 0 0 3

OBJECTIVE:

- To use mechanics of various cutting processes and selection of cutting parameters.

UNIT I INTRODUCTION 9

Definition of feed, depth of cut and cutting speed. Concept of specific cutting energy in metal cutting and Numerical based on calculation of machining time on lathe, drilling machine, shaper, milling machine and grinding machines considering specific cutting energy of materials. Theory of Metal Cutting: Orthogonal and oblique cutting, types of chips, Factors affecting the formation, Cutting forces in orthogonal cutting and their measurement, Merchant circle and derivation of relationships between the cutting forces, chip thickness ratio, shear angle, stress and strain in the chip, work done and power required in metal cutting, plowing forces and the 'size- effect', apparent mean shear strength of work material.

UNIT II ERNST MERCHANT THEORY 9

Its assumptions and modifications. Relationship between cutting velocity, shear velocity and chip flow velocity. Mechanism of friction at chip-tool interface. Numericals based on metal- cutting. Heat generation in Metal cutting: Heat generation and temperature distribution in metal cutting. Calculation of temperature in primary and secondary deformation zones and their measuring methods**.**

UNIT III MACHINABILITY 9

Machinability and its criteria, forms of tool-wear in metal cutting, tool-life and its criteria, effect of different cutting parameters on tool-life. Economics of machining and numericals. Cutting fluids, their physical action and applications.

Grinding: Specifications of grinding wheel, Mechanics of grinding, effect of grinding conditions and type of grinding on wheel behaviour, equivalent diameter of grinding wheel.

UNIT IV CUTTING TOOL DESIGN: 9

General considerations, single point tool geometry. Principles of different cutting tool materials and their important characteristics. Geometry of a drill. Basic principles of design of a single point and multiple point tools i.e broaches and twist drill.

UNIT V JIGS AND FIXTURES 9

Important considerations in jigs and fixture design. Main principles of designing of jigs & fixtures, elements of Jigs and fixtures. Different devices and methods of locations. Different types of clamps used in jigs & fixtures.

TOTAL: 45 PERIODS

OUTCOMES:

- Knowledge in the mechanics of various cutting processes and selection of cutting parameters.
- Ability to design single / multipoint cutting tools.
- Confidence in designing and recommending jigs and fixtures

TEXT BOOKS:

1. Pandey. Dr. P.C. & C.K. Singh, "Production Engg. Sciences", Standard Publisher. Distributors, 2006.
2. Ranganath. Dr. B.J., "Metal Cutting & Tool Design" Vikas Publishing House Pvt. Ltd., 1999.

REFERENCES:

1. Geoffrey Boothroyd, "Fundamentals of Metal Machining & Machine Tools", Tata McGraw Hill Kogakusha Ltd., 1975
2. Rao. P.N., "Manufacturing Technology", Tata McGraw Hill Publication Ltd., 1988

AN8091 MAINTENANCE ENGINEERING

L	T	P	C
3	0	0	3

OBJECTIVES:

- To enable the student to understand the principles, functions and practices adapted in industry for the successful management of maintenance activities.
- To explain the different maintenance categories like Preventive maintenance, condition monitoring and repair of machine elements.
- To illustrate some of the simple instruments used for condition monitoring in industry.

UNIT I PRINCIPLES AND PRACTICES OF MAINTENANCE PLANNING 9

Basic Principles of maintenance planning – Objectives and principles of planned maintenance activity – Importance and benefits of sound Maintenance systems – Reliability and machine availability – MTBF, MTTR and MWT – Factors of availability – Maintenance organization – Maintenance economics.

UNIT II MAINTENANCE POLICIES – PREVENTIVE MAINTENANCE 9

Maintenance categories – Comparative merits of each category – Preventive maintenance, maintenance schedules, repair cycle - Principles and methods of lubrication – TPM.

UNIT III CONDITION MONITORING 9

Condition Monitoring – Cost comparison with and without CM – On-load testing and offload testing – Methods and instruments for CM – Temperature sensitive tapes – Pistol thermometers – wear- debris analysis

UNIT IV REPAIR METHODS FOR BASIC MACHINE ELEMENTS 10

Repair methods for beds, slide ways, spindles, gears, lead screws and bearings – Failure analysis – Failures and their development – Logical fault location methods – Sequential fault location.

UNIT V REPAIR METHODS FOR MATERIAL HANDLING EQUIPMENT 8

Repair methods for Material handling equipment - Equipment records –Job order systems -Use of computers in maintenance

TOTAL: 45 PERIODS

OUTCOMES:

- Upon completion of the programme, the students can able to implement the maintenance function and different practices in industries for the successful management of maintenance activities
- To identify the different maintenance categories like Preventive maintenance, condition monitoring and repair of machine elements.

TEXT BOOKS:

1. Srivastava S.K., “Industrial Maintenance Management”, S. Chand and Co., 1981
2. Venkataraman .K “Maintancence Engineering and Management”, PHI Learning, Pvt.Ltd., 2007

REFERENCES:

1. Armstrong, “Condition Monitoring”, BSIRSA, 1988.
2. Bhattacharya S.N., “Installation, Servicing and Maintenance”, S. Chand and Co., 1995
3. Davies, “Handbook of Condition Monitoring”, Chapman &Hall, 1996.
4. Garg M.R., “Industrial Maintenance”, S. Chand & Co., 1986.
5. Higgins L.R., “Maintenance Engineering Hand book”, McGraw Hill, 5th Edition, 1988.
6. White E.N., “Maintenance Planning”, I Documentation, Gower Press, 1979
7. “Advances in Plant Engineering and Management”, Seminar Proceedings - IIPE, 1996.

ME8073	UNCONVENTIONAL MACHINING PROCESSES	L	T	P	C
		3	0	0	3

OBJECTIVE:

- To learn about various unconventional machining processes, the various process parameters and their influence on performance and their applications

UNIT I INTRODUCTION AND MECHANICAL ENERGY BASED PROCESSES 9

Unconventional machining Process – Need – classification – merits, demerits and applications. Abrasive Jet Machining – Water Jet Machining – Abrasive Water Jet Machining - Ultrasonic Machining. (AJM, WJM, AWJM and USM). Working Principles – equipment used – Process parameters – MRR- Applications.

UNIT II THERMAL AND ELECTRICAL ENERGY BASED PROCESSES 9

Electric Discharge Machining (EDM) – Wire cut EDM – Working Principle-equipments-Process Parameters-Surface Finish and MRR- electrode / Tool – Power and control Circuits-Tool Wear – Dielectric – Flushing — Applications. Laser Beam machining and drilling, (LBM), plasma, Arc machining (PAM) and Electron Beam Machining (EBM). Principles – Equipment –Types - Beam control techniques – Applications.

UNIT III CHEMICAL AND ELECTRO-CHEMICAL ENERGY BASED PROCESSES 9

Chemical machining and Electro-Chemical machining (CHM and ECM)- Etchants – Maskant - techniques of applying maskants - Process Parameters – Surface finish and MRR-Applications. Principles of ECM- equipments-Surface Roughness and MRR Electrical circuit-Process Parameters-ECG and ECH - Applications.

UNIT IV ADVANCED NANO FINISHING PROCESSES 9

Abrasive flow machining, chemo-mechanical polishing, magnetic abrasive finishing, magneto rheological finishing, magneto rheological abrasive flow finishing their working principles, equipments, effect of process parameters, applications, advantages and limitations.

UNIT V RECENT TRENDS IN NON-TRADITIONAL MACHINING PROCESSES 9

Recent developments in non-traditional machining processes, their working principles, equipments, effect of process parameters, applications, advantages and limitations. Comparison of non-traditional machining processes.

TOTAL: 45 PERIODS

OUTCOMES:

Upon the completion of this course the students will be able to

CO1 Explain the need for unconventional machining processes and its classification
CO2 Compare various thermal energy and electrical energy based unconventional machining processes.
CO3 Summarize various chemical and electro-chemical energy based unconventional machining processes.
CO4 Explain various nano abrasives based unconventional machining processes.
CO5 Distinguish various recent trends based unconventional machining processes.

TEXT BOOKS:

1. Vijay.K. Jain “Advanced Machining Processes” Allied Publishers Pvt. Ltd., New Delhi, 2007
2. Pandey P.C. and Shan H.S. “Modern Machining Processes” Tata McGraw-Hill, New Delhi, 2007.

ME8095	DESIGN OF JIGS, FIXTURES AND PRESS TOOLS	L	T	P	C
		3	0	0	3

OBJECTIVES:

- To understand the functions and design principles of Jigs, fixtures and press tools
- To gain proficiency in the development of required views of the final design.

UNIT I LOCATING AND CLAMPING PRINCIPLES: 9

Objectives of tool design- Function and advantages of Jigs and fixtures – Basic elements – principles of location – Locating methods and devices – Redundant Location – Principles of clamping – Mechanical actuation – pneumatic and hydraulic actuation Standard parts – Drill bushes and Jig buttons – Tolerances and materials used.

UNIT II JIGS AND FIXTURES 9

Design and development of jigs and fixtures for given component- Types of Jigs – Post, Turnover, Channel, latch, box, pot, angular post jigs – Indexing jigs – General principles of milling, Lathe, boring, broaching and grinding fixtures – Assembly, Inspection and Welding fixtures – Modular fixturing systems- Quick change fixtures.

UNIT III PRESS WORKING TERMINOLOGIES AND ELEMENTS OF CUTTING DIES 9

Press Working Terminologies - operations – Types of presses – press accessories – Computation of press capacity – Strip layout – Material Utilization – Shearing action – Clearances – Press Work Materials – Center of pressure- Design of various elements of dies – Die Block – Punch holder, Die set, guide plates – Stops – Strippers – Pilots – Selection of Standard parts – Design and preparation of four standard views of simple blanking, piercing, compound and progressive dies.

UNIT IV BENDING AND DRAWING DIES 9

Difference between bending and drawing – Blank development for above operations – Types of Bending dies – Press capacity – Spring back – knockouts – direct and indirect – pressure pads – Ejectors – Variables affecting Metal flow in drawing operations – draw die inserts – draw beads- ironing – Design and development of bending, forming, drawing, reverse redrawing and combination dies – Blank development for axisymmetric, rectangular and elliptic parts – Single and double action dies.

UNIT V FORMING TECHNIQUES AND EVALUATION 9

Bulging, Swaging, Embossing, coining, curling, hole flanging, shaving and sizing, assembly, fine Blanking dies – recent trends in tool design- computer Aids for sheet metal forming Analysis – basic introduction - tooling for numerically controlled machines- setup reduction for work holding – Single minute exchange of dies – Poka Yoke.

TOTAL: 45 PERIODS

Note: (Use of P S G Design Data Book is permitted in the University examination)

OUTCOMES:

Upon the completion of this course the students will be able to

CO1 Summarize the different methods of Locating Jigs and Fixtures and Clamping principles
CO2 Design and develop jigs and fixtures for given component
CO3 Discuss the press working terminologies and elements of cutting dies
CO4 Distinguish between Bending and Drawing dies.
CO5 Discuss the different types of forming techniques

TEXT BOOKS:

1. Joshi, P.H. “Jigs and Fixtures”, Second Edition, Tata McGraw Hill Publishing Co., Ltd., New Delhi, 2010.
2. Joshi P.H “Press tools - Design and Construction”, wheels publishing, 1996

REFERENCES:

1. ASTME Fundamentals of Tool Design Prentice Hall of India.
2. Design Data Hand Book, PSG College of Technology, Coimbatore.

3. Donaldson, Lecain and Goold “Tool Design”, 5th Edition, Tata McGraw Hill, 2017.
4. Hoffman “Jigs and Fixture Design”, Thomson Delmar Learning, Singapore, 2004.
5. Kempster, “Jigs and Fixture Design”, Third Edition, Hoddes and Stoughton, 1974.
6. Venkataraman. K., “Design of Jigs Fixtures & Press Tools”, Tata McGraw Hill, New Delhi, 2005.

MT8491 MICROPROCESSORS AND MICROCONTROLLERS

L	T	P	C
3	0	0	3

OBJECTIVES:

Through the use of assembly language, by the end of the course students will become thoroughly familiar with the elements of microprocessor and microcontroller software and hardware. They will be able to:

- Understand fundamental operating concepts behind microprocessors and microcontrollers.
- Emphasis on the hardware features of Microprocessor 8085, 8086 and Microcontroller 8051 with their functions
- Understand commonly used peripheral / interfacing

UNIT I 8085 PROCESSOR 9

Hardware Architecture, pin diagram – Functional Building Blocks of Processor – Memory organization – I/O ports and data transfer concepts– Timing Diagram – Interrupts.

UNIT II PROGRAMMING OF 8085 PROCESSOR 9

Instruction - format and addressing modes – Assembly language format – Data transfer, data manipulation& control instructions – Programming: Loop structure with counting & Indexing – Look up table - Subroutine instructions - stack.

UNIT III 8051 MICRO CONTROLLER 9

Hardware Architecture, pin diagram – Functional Building Blocks of Processor – Memory organization – I/O ports and data transfer concepts– Serial Communication – Interrupts-Introduction to Arduino.

UNIT IV PERIPHERAL INTERFACING 9

Introduction on Architecture, configuration and interfacing, with ICs: 8255 , 8259 , 8254,8237,8251, 8279 ,- A/D and D/A converters.

UNIT V MICRO CONTROLLER PROGRAMMING & APPLICATIONS 9

Data Transfer, Manipulation, Control Algorithms& I/O instructions – Simple programming exercises-key board and display interface – Closed loop control of servo motor- stepper motor control – Washing Machine Control.

TOTAL :45 PERIODS

OUTCOMES:

On the successful completion of the course, students will be able to

CO1: Distinguish the feature of the 8085 microprocessor, Hardware Architecture and PIN diagram.
CO2: Demonstrate programming proficiency using the various addressing modes and data transfer instructions of 8085 microprocessor
CO3: Acquaint the knowledge on architecture and programming of Microcontroller 8051.
CO4: Illustrate the interrupts handling and demonstrate peripherals applications in different IC and Know about A/D and D/A converters.
CO5:Apply the programming concepts to interface the hardware units with microprocessor and Microcontroller

TEXT BOOKS:

1. Krishna Kant, “Microprocessor and Microcontrollers”, Eastern Company Edition, Prentice Hall of India, New Delhi, 2007.
2. Muhammad Ali Mazidi & Janice Gilli Mazidi, R.D.Kinely ‘The 8051 Micro Controller and Embedded Systems’, PHI Pearson Education, 5th Indian reprint, 2003.
3. R.S. Gaonkar, ‘Microprocessor Architecture Programming and Application’, with 8085, Wiley

Eastern Ltd., New Delhi, 2013

MECH
2019-20

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
B.E. MECHANICAL ENGINEERING
REGULATIONS - 2017
CHOICE BASED CREDIT SYSTEM
I TO VIII SEMESTERS CURRICULA AND SYLLABI

SEMESTER I

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	31	19	0	12	25

SEMESTER II

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8251	Materials Science	BS	3	3	0	0	3
4.	BE8253	Basic Electrical, Electronics and Instrumentation Engineering	ES	3	3	0	0	3
5.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
6.	GE8292	Engineering Mechanics	ES	5	3	2	0	4
PRACTICALS								
7.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8.	BE8261	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	ES	4	0	0	4	2
			TOTAL	30	20	2	8	25

SEMESTER III

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
2.	ME8391	Engineering Thermodynamics	PC	5	3	2	0	4
3.	CE8394	Fluid Mechanics and Machinery	ES	4	4	0	0	4
4.	ME8351	Manufacturing Technology - I	PC	3	3	0	0	3
5.	EE8353	Electrical Drives and Controls	ES	3	3	0	0	3
PRACTICAL								
6.	ME8361	Manufacturing Technology Laboratory - I	PC	4	0	0	4	2
7.	ME8381	Computer Aided Machine Drawing	PC	4	0	0	4	2
8.	EE8361	Electrical Engineering Laboratory	ES	4	0	0	4	2
9.	HS8381	Interpersonal Skills / Listening & Speaking	EEC	2	0	0	2	1
			TOTAL	**33**	**17**	**2**	**14**	**25**

SEMESTER IV

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8452	Statistics and Numerical Methods	BS	4	4	0	0	4
2.	ME8492	Kinematics of Machinery	PC	3	3	0	0	3
3.	ME8451	Manufacturing Technology – II	PC	3	3	0	0	3
4.	ME8491	Engineering Metallurgy	PC	3	3	0	0	3
5.	CE8395	Strength of Materials for Mechanical Engineers	ES	3	3	0	0	3
6.	ME8493	Thermal Engineering- I	PC	3	3	0	0	3
PRACTICAL								
7.	ME8462	Manufacturing Technology Laboratory – II	PC	4	0	0	4	2
8.	CE8381	Strength of Materials and Fluid Mechanics and Machinery Laboratory	ES	4	0	0	4	2
9.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
			TOTAL	**29**	**19**	**0**	**10**	**24**

SEMESTER V

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	ME8595	Thermal Engineering- II	PC	3	3	0	0	3
2.	ME8593	Design of Machine Elements	PC	3	3	0	0	3
3.	ME8501	Metrology and Measurements	PC	3	3	0	0	3
4.	ME8594	Dynamics of Machines	PC	4	4	0	0	4
5.		Open Elective I	OE	3	3	0	0	3
PRACTICAL								
6.	ME8511	Kinematics and Dynamics Laboratory	PC	4	0	0	4	2
7.	ME8512	Thermal Engineering Laboratory	PC	4	0	0	4	2
8.	ME8513	Metrology and Measurements Laboratory	PC	4	0	0	4	2
			TOTAL	**28**	**16**	**0**	**12**	**22**

SEMESTER VI

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	ME8651	Design of Transmission Systems	PC	3	3	0	0	3
2.	ME8691	Computer Aided Design and Manufacturing	PC	3	3	0	0	3
3.	ME8693	Heat and Mass Transfer	PC	5	3	2	0	4
4.	ME8692	Finite Element Analysis	PC	3	3	0	0	3
5.	ME8694	Hydraulics and Pneumatics	PC	3	3	0	0	3
6.		Professional Elective - I	PE	3	3	0	0	3
PRACTICAL								
7.	ME8681	CAD / CAM Laboratory	PC	4	0	0	4	2
8.	ME8682	Design and Fabrication Project	EEC	4	0	0	4	2
9.	HS8581	Professional Communication	EEC	2	0	0	2	1
			TOTAL	**30**	**18**	**2**	**10**	**24**

SEMESTER VII

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	ME8792	Power Plant Engineering	PC	3	3	0	0	3
2.	ME8793	Process Planning and Cost Estimation	PC	3	3	0	0	3
3.	ME8791	Mechatronics	PC	3	3	0	0	3
4.		Open Elective - II	OE	3	3	0	0	3
5.		Professional Elective – II	PE	3	3	0	0	3
6.		Professional Elective – III	PE	3	3	0	0	3
PRACTICAL								
7.	ME8711	Simulation and Analysis Laboratory	PC	4	0	0	4	2
8.	ME8781	Mechatronics Laboratory	PC	4	0	0	4	2
9.	ME8712	Technical Seminar	EEC	2	0	0	2	1
			TOTAL	**28**	**18**	**0**	**10**	**23**

SEMESTER VIII

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MG8591	Principles of Management	HS	3	3	0	0	3
2.		Professional Elective– IV	PE	3	3	0	0	3
PRACTICAL								
3.	ME8811	Project Work	EEC	20	0	0	20	10
			TOTAL	**29**	**9**	**0**	**20**	**16**

TOTAL NUMBER OF CREDITS TO BE EARNED FOR AWARD OF THE DEGREE = 184

SEMESTER III

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6351	Transforms and Partial Differential Equations	3	1	0	4
2.	CE6306	Strength of Materials	3	1	0	4
3.	ME6301	Engineering Thermodynamics	3	0	0	3
4.	CE6451	Fluid Mechanics and Machinery	3	0	0	3
5.	ME6302	Manufacturing Technology - I	3	0	0	3
6.	EE6351	Electrical Drives and Controls	3	0	0	3
PRACTICAL					0	3
7.	ME6311	Manufacturing Technology Laboratory - I	0	0	3	2
8.	CE6461	Fluid Mechanics and Machinery Laboratory	0	0	3	2
9.	EE6365	Electrical Engineering Laboratory	0	0	3	2
		TOTAL	18	2	9	26

SEMESTER IV

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6452	Statistics and Numerical Methods	3	1	0	4
2.	ME6401	Kinematics of Machinery	3	0	0	3
3.	ME6402	Manufacturing Technology– II	3	0	0	3
4.	ME6403	Engineering Materials and Metallurgy	3	0	0	3
5.	GE6351	Environmental Science and Engineering	3	0	0	3
6.	ME6404	Thermal Engineering	3	0	0	3
PRACTICAL					0	3
7.	ME6411	Manufacturing Technology Laboratory–II	0	0	3	2
8.	ME6412	Thermal Engineering Laboratory - I	0	0	3	2
9.	CE6315	Strength of Materials Laboratory	0	0	3	2
		TOTAL	18	1	9	25

SEMESTER V

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	ME6501	Computer Aided Design	3	0	0	3
2.	ME6502	Heat and Mass Transfer	3	0	0	3
3.	ME6503	Design of Machine Elements	3	0	0	3
4.	ME6504	Metrology and Measurements	3	0	0	3
5.	ME6505	Dynamics of Machines	3	0	0	3
6.	GE6075	Professional Ethics in Engineering	3	0	0	3
PRACTICAL						
7.	ME6511	Dynamics Laboratory	0	0	3	2
8.	ME6512	Thermal Engineering Laboratory-II	0	0	3	2
9.	ME6513	Metrology and Measurements Laboratory	0	0	3	2
		TOTAL	**18**	**0**	**9**	**24**

SEMESTER VI

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	ME6601	Design of Transmission Systems	3	0	0	3
2.	MG6851	Principles of Management	3	0	0	3
3.	ME6602	Automobile Engineering	3	0	0	3
4.	ME6603	Finite Element Analysis	3	0	0	3
5.	ME6604	Gas Dynamics and Jet Propulsion	3	0	0	3
6.		Elective - I	3	0	0	3
PRACTICAL						
7.	ME6611	C.A.D. / C.A.M. Laboratory	0	0	3	2
8.	ME6612	Design and Fabrication Project	0	0	4	2
9.	GE6674	Communication and Soft Skills-Laboratory Based	0	0	4	2
		TOTAL	**18**	**0**	**11**	**24**

SEMESTER VII

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	ME6701	Power Plant Engineering	3	0	0	3
2.	ME6702	Mechatronics	3	0	0	3
3.	ME6703	Computer Integrated Manufacturing Systems	3	0	0	3
4.	GE6757	Total Quality Management	3	0	0	3
5.		Elective – II	3	0	0	3
6.		Elective – III	3	0	0	3
PRACTICAL						
7.	ME6711	Simulation and Analysis Laboratory	0	0	3	2
8.	ME6712	Mechatronics Laboratory	0	0	3	2
9.	ME6713	Comprehension	0	0	2	1
		TOTAL	**18**	**0**	**8**	**23**

SEMESTER VIII

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1	MG6863	Engineering Economics	3	0	0	3
2.		Elective – IV	3	0	0	3
3		Elective – V	3	0	0	3
PRACTICAL						
4	ME6811	Project Work	0	0	12	6
		TOTAL	9	0	12	15

TOTAL NUMBER OF CREDITS TO BE EARNED FOR AWARD OF THE DEGREE = 188

ELECTIVES FOR B.E. MECHANICAL ENGINEERING

SEMESTER VI

Elective I

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	MG6072	Marketing Management	3	0	0	3
2.	ME6001	Quality Control and Reliability Engineering	3	0	0	3
3.	ME6002	Refrigeration and Air conditioning	3	0	0	3
4.	ME6003	Renewable Sources of Energy	3	0	0	3
5.	ME6004	Unconventional Machining Processes	3	0	0	3

SEMESTER VII

Elective II

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	ME6005	Process Planning and Cost Estimation	3	0	0	3
2.	ME6006	Design of Jigs, Fixtures and Press Tools	3	0	0	3
3.	ME6007	Composite Materials and Mechanics	3	0	0	3
4.	ME6008	Welding Technology	3	0	0	3
5.	ME6009	Energy Conservation and Management	3	0	0	3
6.	GE6083	Disaster Management	3	0	0	3

Elective III

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	ME6010	Robotics	3	0	0	3
2.	GE6081	Fundamentals of Nanoscience	3	0	0	3
3.	ME6011	Thermal Turbo Machines	3	0	0	3
4.	ME6012	Maintenance Engineering	3	0	0	3
5.	EE6007	Micro Electro Mechanical Systems	3	0	0	3
6.	ME6021	Hydraulics and Pneumatics	3	0	0	3

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 02** **DATE OF PUBLICATION :15-08-2020**

Branch : 114-B.E. Mechanical Engineering

	Subject Code - >	BE8253	BE8261	GE8261	GE8291	GE8292	HS8251	MA8251	PH8251
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312819114001	ABIN A	A+	O	O	A+	A+	A+	A+	B
312819114002	AMUDAN B	A+	O	O	A+	A+	A+	A+	A+
312819114003	GANESH S	A+	O	O	A+	A	A+	A+	A+
312819114004	KUMARESAN P	A+	O	O	A	A+	B+	A	A+
312819114005	LINGESH M	A+	O	O	B+	A+	B+	A+	B
312819114006	PETER J	A+	O	O	A+	A+	B+	A+	B+
312819114007	SARANKUMAR E	B	O	O	A+	B+	B+	B+	B
312819114008	SELVA GANESH T	B+	O	O	A+	A+	B	B+	B+
312819114009	SURYA M	B	O	O	A	B	B+	B	B
312819114010	SURYA R	O	O	O	O	O	O	O	O
312819114011	THULASI DARAN J	A+	O	O	A+	A	A+	A	B
312819114012	VISHWESHWARAN S	A+	O	O	A+	A+	A+	A+	A+
312819114013	XAVIER RAYAN S	B	O	O	A+	A	B+	B	B

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 04** **DATE OF PUBLICATION :15-08-2020**

Branch : 114-B.E. Mechanical Engineering

	Subject Code - >	CE8381	CE8395	HS8461	MA8452	ME8451	ME8462	ME8491	ME8492	ME8493
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312818114001	ARUN KUMAR C	O	A+	O	A	A	O	A	A+	A+
312818114002	AYYAPPAN R	A+	B+	O	B	B+	A+	B	B	B
312818114004	CHRISTOPHER V	O	O	O	O	O	O	O	O	O
312818114005	DEEPAK MANIKANDAN C V	A+	A+	O	B	A	A+	A	A+	A
312818114006	DILIPKISHNAA K	O	B	O	B	B	A+	B	B+	B
312818114007	DINESH G	A+	B+	O	B	B+	A+	B+	B+	B+
312818114008	FEBI DAVIS R V	A+	B	O	B	B	A+	B	B	B
312818114009	HARIHARAN E	A+	B+	O	B	B	A+	B	B+	B+
312818114010	HARIHARAN K	O	A+	O	A	A+	O	A+	A+	A+
312818114011	JAYA KUMAR T	A	B	O	B	B	A+	B	B	B
312818114012	KARTHIKEYAN B	A+	B	O	B	B+	A+	B+	B+	B+
312818114013	KESAVAN R	A+	B+	O	B	B	A+	B	A	B+
312818114014	KISHORE A	A+	A	O	B	B	O	B	B+	B+
312818114015	KISHORE KANNAN D	A+	A+	O	B+	A	O	A	A+	A+
312818114016	KOCIKAN S	A+	A	O	B+	A	O	A	A	A
312818114017	KRISHNA KUMAAR U	A+	A	O	B	B+	O	A+	A	A
312818114018	LOGESH SHOBAN RAJ A	A+	A+	O	A+	A	O	A+	A+	A
312818114019	MADHAN KUMAR M	A+	A	O	B+	B+	A+	B	A	B+
312818114020	MAHESH E	A+	A+	O	A	A	A+	A	A+	A
312818114021	MANOJ M	A+	A+	O	B+	B+	O	A	A+	A
312818114023	MOHAN RAJ E	A+	B	O	B	B	O	B	B	B
312818114024	MUTHUKUMAR M	A+	A+	O	A	A	O	A	A+	B+
312818114025	NARESH KALIRAJAN M	A+	A	O	B+	A+	O	A+	A+	A
312818114026	NAVEEN S	O	A+	O	A	A	O	A	A+	A+
312818114027	NITHISH KUMAR ALAGESAN P	O	A+	O	A	A	O	A	A+	A+
312818114028	PONMANIKANDAN D	A+	A	O	B	A	A+	B+	A	A
312818114030	RAGUBALAN S	O	A+	O	B+	B+	O	A	A+	A
312818114031	RAJARAM V	O	A+	O	A	A+	O	A+	A+	A
312818114033	RAMAKRISHNAN M	A+	A+	O	A	A+	O	A+	A+	A+
312818114034	RAVICHANDRAN K	A	B	O	B	B	A+	B	B	B
312818114035	SABEEL AHMED F	O	A+	O	A	A	O	A+	A+	A
312818114036	SELVAKUMAR M	O	A+	O	A	A	A+	B	B+	B+
312818114037	SIVAOLI K	A+	A	O	B+	B+	O	B	B+	B+
312818114038	SIVARAJ S	A+	A+	O	B	A+	A+	B	B+	A

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312818114039	SRIRAM S	A+	B	O	B	B	O	B	B	B
312818114040	SUBASH V	O	A+	O	A+	A+	O	A	A+	A+
312818114041	SUGUMAR S	A+	A	O	A	A	A+	A	A	B+
312818114042	SUNILKUMAR S	A+	A+	O	A	A+	O	A+	A+	A+
312818114043	SURIYA T	A+	A	O	B+	A	O	B+	A	A
312818114044	THAMIZHARASAN B	A+	B+	O	B	B+	A+	B+	A	B+
312818114045	THENNILAVAN P V	A+	A	O	A	A	O	A	A	A
312818114046	VASANTH B	A+	A	O	B+	B+	A+	B+	A+	B
312818114048	VIGNESH KUMAR I	O	A+	O	A	A+	O	A+	A+	A+
312818114049	VIJAYARANGAN A	O	A+	O	A+	A+	O	A+	A+	A+
312818114050	VIKRAM S	A+	A	O	B	B	A+	A	B+	A
312818114051	YUKESH KUMAR R	A+	A	O	B+	B+	A+	B+	B+	A
312818114302	KAVIYARASAN B	O	A+	O	B	B+	O	B+	B+	A+
312818114701	KARTHIK S	A+	A	O	B+	B	O	B	B+	B
312818114702	ASADULLAH KHAN R	A+	A+	O	B+	B	O	B	A	A

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 06** **DATE OF PUBLICATION :15-08-2020**

Branch : 114-B.E. Mechanical Engineering

	Subject Code - >	HS8581	ME8091	ME8096	ME8651	ME8681	ME8682	ME8691	ME8692	ME8693	ME8694
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817114001	AAKASH A	O		O	O	O	O	O	O	A+	O
312817114002	AJAY DEEPAK N	O	O		A	O	O	A+	B+	A	A
312817114003	AJITH P	O	A+		A+	O	O	A+	A+	B+	A+
312817114004	AJITH VC	O		O	O	O	O	O	O	O	O
312817114005	AJITHKUMAR V	O		O	A+	O	O	A+	A+	A+	A+
312817114006	AJITH KUMAR N	O		O	A+	O	O	A	A+	A+	A
312817114007	AJITH KUMAR S	O	A		B+	O	O	B+	B	B+	B+
312817114008	AKASH S	O		B	A	A+	O	B	B	B	B
312817114009	ARAVIND B	O		A	O	O	O	O	O	O	O
312817114010	ARAVIND K	O		O	O	O	O	O	O	O	O
312817114011	ARAVINTHAN B	O		O	O	O	O	O	O	O	O
312817114012	ARAVINTHAN L	O	O		A+	O	O	A+	A+	A+	A+
312817114013	ARUN A	O	O		A+	O	O	A+	A	A	A+
312817114014	ARUN KUMAR P	O	O		A+	A+	O	A+	A	A+	A+
312817114015	AYYAPPAN C	O		O	O	O	O	O	O	O	O
312817114016	AYYAPPAN S	O	O		A	O	O	A	B+	A	A
312817114017	BALAJI P	O	O		A+	O	O	A	A+	A	A+
312817114018	BALAMURUGAN K	O		O	O	O	O	O	O	O	O
312817114019	BARATH KUMAR M	O		O	A+	O	O	A	A+	A+	A+
312817114020	CHANDRABALAN M	O	O		A	A+	O	A	A	B+	B+
312817114021	COLLIN DAVID D	O	O		B+	A+	O	B+	B+	A	A
312817114022	DEEPAK B	O	O		A+	O	O	A+	A+	A+	A+
312817114023	DEEPAK KUMAR R	O	A		A+	A+	O	A+	B+	B+	A
312817114024	DHAYANITHY R	O	A		B+	A+	O	B+	A	A	B+
312817114025	DILLIBABU S	O		O	O	O	O	O	O	O	O
312817114026	DINESH RP	O	O		A+	O	O	A+	A	A+	A+
312817114027	DINESH KUMAR A	O		A+	A	O	O	B+	A	B+	A
312817114028	ESAKKIVEL A	O	O		O	O	O	O	O	A+	O
312817114029	GOKUL VARUN P	O		B+	B+	A+	O	B+	A	B+	B+
312817114031	HEMAPRAKASH S	O	O		A+	O	O	A+	A+	A+	A+
312817114032	KAMALIYAL R	O	O		A+	O	O	A+	A+	A+	A+
312817114033	KARTHICK C	O	O		A	O	O	A+	A	A	A
312817114034	KARTHICK G	O		O	O	O	O	A+	O	A+	A+
312817114035	KARUPPASAMY P	O		O	O	O	O	O	O	O	O
312817114036	KAVI PRAKASH A	O	B+		A+	O	O	A	A+	A	A+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312817114037	KEERTHI VARMAN SNS	O	O		A+	O	O	A	A+	A+	A
312817114038	KISHORE REDDY M	O	A+		A	O	O	A+	A+	A	A
312817114040	KUMARAPPAN MR M	O	O		A+	O	O	A+	A	A	A+
312817114041	LOGESH N	O	O		A+	O	O	A+	A+	A+	A+
312817114042	LOKESH M	O		O	A+	A+	O	A+	A	A	A
312817114043	MANIKANDAN A	O	O		O	O	O	O	O	O	O
312817114044	MANO RANJAN J	O	A+		A+	O	O	A	A+	A+	A+
312817114045	MARK MILTON A	O		B+	B+	A+	O	B+	B+	B+	B+
312817114046	MITHUN KANNAN M	O	O		A+	A+	O	A+	A+	A	A+
312817114048	MUKESH KANNA S	O		O	A+	O	O	A+	A+	A	A+
312817114050	MUTHURAJAMANI S	O		A+	A+	O	O	A	A	A	A+
312817114051	NAMBI RAJAN A	O	O		A+	O	O	A+	A+	A+	A+
312817114052	NARAYANA PRABHU M	O		A+	B+	A+	O	B+	A	B+	A
312817114054	PALANI KISHORE R	O		O	O	O	O	A+	O	A+	O
312817114056	PRAKASH RAJ M	O	O		O	O	O	A+	O	A+	A+
312817114057	PRASANTH B	O	A		A	A+	O	A	A+	A	A
312817114058	PRAVIN D	O		O	A+	A+	O	A	A+	A+	A+
312817114059	RAGUL B	O	B		B+	A+	O	B	B+	B+	B
312817114060	RAGUL SJ	O	B		A+	O	O	B+	A+	A+	B+
312817114061	RAHUL E	O	O		A	A+	O	A	A+	A	A
312817114063	RAJARAJAN S	O	O		O	O	O	O	O	O	O
312817114064	RAJESH J	O	B		B+	O	O	B+	A	A	B+
312817114065	RAMAJAYAM V	O	B+		B	A+	O	B	A	B+	B+
312817114066	RANJITH M	O	A		A	O	O	B	A	A+	B+
312817114067	RANJITH KUMAR M	O	A		A	A+	O	A	A+	B	A
312817114069	SAJEEV S V	O	A		A	A+	O	B+	B	B	B
312817114070	SAM BENIN K	O		B	B+	A+	O	B	A	B+	B
312817114071	SARAN G	O	O		O	O	O	O	O	O	O
312817114072	SARAVANA KUMARAN S	O		O	A+	O	O	A+	A+	A+	A+
312817114073	SARAVANAN S (29-08-1999)	O		O	O	O	O	A	O	O	A+
312817114074	SARAVANAN S (12-09-1999)	O		A+	A+	O	O	A	A+	A+	B+
312817114075	SATHISH K	O	A+		A	A+	O	B	A	B	B
312817114076	SEENIVASAHA PERUMAL M	O		O	O	O	O	A+	A+	A+	A+
312817114077	SHANJAI KUMAR GV	O		B	B+	A+	O	B+	A	B+	B
312817114078	SHARAFATH ALI I	O		O	A+	O	O	A+	A+	A+	A+
312817114080	SHEIKH HASSAIN A	O		B	A+	O	O	A	A+	B+	A+
312817114081	SIVA R	O		A	A+	A+	O	A	A+	A	A+
312817114082	SREE NIVAAS SR	O	A+		O	O	O	O	O	A+	O
312817114083	SRI HARI V	O		O	A+	O	O	A	A+	A+	A+

312817114084	SUBASH R	O		O	O	O	O	A+	O	O	O
312817114085	SUDHAKAR R	O		B	B	A+	O	B	B+	B	B+
312817114088	SURYA S	O	O		A+	A+	O	A+	A+	A+	A+
312817114089	THAMIZHANBU D	O		B	B	A+	O	B	B	B	B
312817114090	THILIPAN CP	O	O		O	A+	O	A+	O	A+	O
312817114091	THIRUMOORTHI P	O		O	O	O	O	A+	O	A+	O
312817114092	UDAYAN R	O		O	O	O	O	A+	O	A+	O
312817114094	VASANTH G	O		B	B+	O	O	B+	B+	B+	B+
312817114095	VIGNESH KUMAR R	O	A+		B+	O	O	B	B	B	B
312817114097	VISHWANATHAN V	O		A+	A	O	O	A	A+	A	A
312817114099	YUVARAJ E	O		A	A+	O	O	A+	A+	A+	A+
312817114100	YUVARAJ S	O		A+	A+	O	O	A	A+	A+	A+
312817114701	MOHAMED FARMAAN	O		A	B	A+	O	B	B+	B+	B+

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 07** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 114-B.E. Mechanical Engineering

	Subject Code - >	GE6757	ME6005	ME6010	ME6012	ME6701	ME6702	ME6703	ME6711	ME6712	ME6713
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312813114013	DEEPAK J	D		E		E					
312813114053	NARAYANASAMY M		E								
312813114079	SANKARANARAYANAN P M		U					E			
312813114099	YOGANATHAN T					U	U	E			
312814114005	AJITHKUMAR V						U				
312814114030	DINESH R G						U				
312814114079	SANGEETH KUMAR S							E			
312814114098	THANIGAIVEL SELVAN S				UA		UA				
312814114309	MUKESH KANNA P		UA				UA				
312814114314	THIRSHATHA KIRUBHAKAR K				UA		UA				
312814114316	VASUKRISHNA K						U	U			
312815114019	DANIEL VOLTAIRE RAJ P		UA			UA	U	D			
312815114022	DHANUSH KRISHNAN N		U								
312815114028	ENOK RAJ R					U					
312815114053	MOHAMED RASIK A		UA		UA	UA	UA	UA			
312815114059	NAVEEN VP	U	U		E	UA	U	E			
312815114076	PURUSHOTHAMAN B							C			
312815114081	RANJITH A	UA	U		UA	UA	UA	UA			
312815114100	SRIDHAR S										
312815114108	THAVITHURAJA D						UA				
312815114304	VENKATESH R	UA				UA	UA	UA			
312816114001	AAKASH R	E	E		C	D	E	E	D	C	S
312816114002	AAKASH S	A	B		A	B	C	B	S	S	S
312816114003	ABDULLA K	B	C		C	D	U	C	C	S	S
312816114004	ABINATH V	D	E		C	D	U	C	A	B	S
312816114006	AJITH R L	A	B		C	C	C	D	S	S	S
312816114007	AJITH KUMAR M	C	C		C	D	C	B	S	A	S
312816114008	AJITH KUMAR S	C	D		E	U	E	U	C	B	S
312816114009	ANSON PAULY	U	U		E	E	C	C	D	A	S
312816114010	ARAVIND R	E	U		B	E	E	E	A	A	S
312816114011	ARIVUSELVAN E	E	E		D	B	E	E	C	B	S
312816114012	ARJUN R	C	C		C	B	C	E	S	S	S
312816114013	ARULKUMAR S	E	E		C	C	U	U	A	B	S

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312816114015	ASHOK KUMAR S	D	C		B	C	C	C	S	A	S
312816114016	ASHWATH E	C	B		B	B	D	C	B	A	S
312816114018	BALAJI E	C	B		B	C	C	C	S	S	S
312816114019	BALAJI S										
312816114020	BALAKRISHNAN A	C	C		B	C	C	C	A	S	S
312816114021	BHARATH R	C	C		B	D	D	C	A	S	S
312816114022	BHARATH KUMAR R	C	C		A	B	U	B	S	S	S
312816114023	BHUVANESH K	B	B		C	A	D	B	S	A	S
312816114024	DEV ANAND D	C	D		D	C	E	C	S	A	S
312816114026	DHIVAKAR C S	C	U		B	E	E	C	S	A	S
312816114027	DILIP SAHADEV M	D	D		B	E	E	C	B	B	S
312816114028	DINESH B	B	E		B	E	E	C	A	S	S
312816114029	EMAYAVARMAN S	C	E		C	E	E	E	D	C	S
312816114030	FAZIL N	C	D		C	D	C	C	A	A	S
312816114031	GOKULRAJ E	C	B		B	D	C	C	S	S	S
312816114032	HARISH M	E	C		E	U	C	E	C	B	S
312816114033	HARKREESH RA	C	C		C	C	C	D	A	A	S
312816114034	JAYA BHARATHY R	B	C		A	C	C	C	S	S	S
312816114035	JAYAPAL P	U	D		E	C	C	E	C	A	S
312816114036	KALAIARASAN T	U	D		U	E	U	E	E	B	S
312816114037	KAMAL BHARATHI M	C	B		B	A	C	C	S	A	S
312816114038	KARTHICK R	B	C		C	A	C	D	A	S	S
312816114039	KATHIRAVAN D	C	U		C	B	E	C	S	A	S
312816114040	KAVIBHARATHY D	C	U		E	E	E	D	D	A	S
312816114041	KEERTHIKEYAN P	B	A		B	B	B	A	S	S	S
312816114042	KISHORE KUMAR P	D	C		B	D	C	C	S	S	S
312816114044	MARISELVAM S	E	C		B	B	C	A	S	S	S
312816114045	MICHAEL REBINCE A	C	A		B	B	C	A	S	S	S
312816114046	MOHAMAD MUSAMIL A	U	C		B	C	C	C	S	A	S
312816114047	MOSY KIRAN T	U	C		E	E	E	C	C	C	S
312816114049	MURALI DHARAN A S	U	E		U	U	U	E	B	B	S
312816114051	MURUGANANDA KUMAR S	B	B		A	C	D	B	S	A	S
312816114052	NACHINARKINIYAN N	C	C		E	U	D	C	S	A	S
312816114053	NARAYANAN P	E	D		E	U	D	B	B	A	S
312816114054	NARESH N	E	D		B	E	E	C	S	A	S
312816114055	NIRMAL KUMAR R	B	B		B	C	C	B	S	S	S
312816114056	OVURAJ K	B	B		B	C	E	U	A	B	S
312816114057	PAVITHRAN R	D	C		B	C	D	E	S	A	S
312816114058	PONRAJ K	B	B		B	B	C	C	S	S	S
312816114059	POOVAZHAGAN M	E	E		B	C	E	D	S	A	S

312816114060	PRABAKARAN R	C	C		B	C	D	D	A	A	S
312816114062	PRAVEEN KUMAR P	C	U		C	C	E	B	A	A	S
312816114063	PREM E	C	C		C	C	D	B	S	A	S
312816114065	RAGUL D T	D	U		C	U	U	B	S	A	S
312816114066	RAJALINGAM R	B	D		B	C	C	B	S	S	S
312816114067	RAJESH S	D	U		B	E	E	C	S	B	S
312816114068	RAJESH KANNA N	C	C		B	E	C	A	S	A	S
312816114069	RAJKUMAR G	B	D		B	C	D	C	S	A	S
312816114070	RAKESH KUMAR U	C	B		B	A	D	B	S	S	S
312816114071	RAMEEZ RAJA M	C	E		E	D	E	D	C	D	S
312816114073	REETHU G	B	C		A	B	D	B	S	S	S
312816114074	ROBIN JEBAKUMAR J	E	U		B	E	D	C	A	A	S
312816114075	SAGAR M	U	U		E	U	U	D	C	B	S
312816114076	SAKTHI VEL D	C	B		B	B	B	B	S	S	S
312816114077	SALMAN FARIS N	B	B		B	B	C	B	S	S	S
312816114078	SANTHOSH K	C	C		B	D	D	E	S	S	S
312816114079	SIVA GURU S	B	B		B	C	D	D	S	S	S
312816114080	SREEJITH S	C	C		B	C	E	D	S	A	S
312816114081	SUGAVANESH M	E	E		D	E	U	D	B	S	S
312816114082	TILAKRAJ D K	C	C		C	C	E	C	C	D	S
312816114083	UDHAYA KUMAR R	C	B		C	B	E	E	S	A	S
312816114084	VENKAT G SURYA	E	D		E	C	U	U	A	A	S
312816114085	VIGNESH K M	B	C		B	B	B	B	A	S	S
312816114086	VIGNESH V	E	A		B	A	C	D	S	S	S
312816114088	VIGNESHWARAN N	C	B		B	B	C	D	S	S	S
312816114089	VINOTH KUMAR E	B	A		A	D	C	D	S	S	S
312816114091	VISHNU SHAJI	C	B		A	D	C	D	A	S	S
312816114092	VIVEK B	E	C		B	D	D	C	S	A	S
312816114093	VIVEKANANTHAN M	C	A		B	C	C	B	S	S	S
312816114094	YASHIC P	E	D		C	C	D	U	S	S	S
312816114301	GUNA S	E	E		E	E	U	U	B	B	S
312816114302	MANIVANNAN S	C	C		C	D	C	U	S	S	S
312816114303	RAJAPANDI S	U	U		E	E	E	U	A	A	S

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 01** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 114-B.E. Mechanical Engineering

	Subject Code - >	BS8161	CY8151	GE8151	GE8152	GE8161	HS8151	MA8151	PH8151
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817114002	AJAY DEEPAK N							U	UA
312817114007	AJITH KUMAR S		B+					U	
312817114021	COLLIN DAVID D		B					U	U
312817114022	DEEPAK B							B+	
312817114023	DEEPAK KUMAR R							U	
312817114024	DHAYANITHY R		B						U
312817114027	DINESH KUMAR A							B	
312817114029	GOKUL VARUN P		U					U	U
312817114033	KARTHICK C							U	
312817114036	KAVI PRAKASH A							U	
312817114038	KISHORE REDDY M							B	
312817114040	KUMARAPPAN MR M							U	
312817114052	NARAYANA PRABHU M				U			U	
312817114059	RAGUL B		U	U				U	U
312817114060	RAGUL SJ							U	
312817114061	RAHUL E							U	
312817114064	RAJESH J		U					U	
312817114065	RAMAJAYAM V		B					U	U
312817114069	SAJEEV S V		B		B			U	U
312817114070	SAM BENIN K		U					U	U
312817114075	SATHISH K							U	
312817114077	SHANJAI KUMAR GV								U
312817114088	SURYA S							U	
312817114089	THAMIZHANBU D		U	U				U	U
312817114094	VASANTH G							U	
312817114701	MOHAMED FARMAAN				B				U
312818114002	AYYAPPAN R							U	
312818114005	DEEPAK MANIKANDAN C V			U					
312818114006	DILIPKISHNAA K			U	B			U	U
312818114007	DINESH G							U	
312818114008	FEBI DAVIS R V		U	UA				U	
312818114009	HARIHARAN E			U				U	
312818114011	JAYA KUMAR T		U		U			U	
312818114012	KARTHIKEYAN B			U					
312818114013	KESAVAN R								

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312818114014	KISHORE A			U				U	U
312818114016	KOCIKAN S							U	
312818114017	KRISHNA KUMAAR U							U	
312818114019	MADHAN KUMAR M			U				U	
312818114020	MAHESH E			U				U	
312818114021	MANOJ M							B	
312818114023	MOHAN RAJ E							U	U
312818114025	NARESH KALIRAJAN M							UA	
312818114028	PONMANIKANDAN D							B	
312818114030	RAGUBALAN S				B				
312818114033	RAMAKRISHNAN M							U	
312818114034	RAVICHANDRAN K		U	U				U	U
312818114036	SELVAKUMAR M			U				B	
312818114037	SIVAOLI K							U	
312818114038	SIVARAJ S							U	
312818114039	SRIRAM S		U	U				U	
312818114041	SUGUMAR S							U	B
312818114042	SUNILKUMAR S				B			U	
312818114045	THENNILAVAN P V			U					U
312818114046	VASANTH B							U	U
312818114050	VIKRAM S		U	U				U	U
312818114701	KARTHIK S							U	U
312819114001	ABIN A	A+	A+	U	A	A+	B+	B	B
312819114002	AMUDAN B	O	A	U	A+	A+	B+	B+	B+
312819114003	GANESH S	O	A+	U	B+	O	U	B+	U
312819114004	KUMARESAN P	A	A	U	B+	A+	U	B	U
312819114005	LINGESH M	A	B	U	B	A+	B	U	U
312819114006	PETER J	A+	A	B	B	O	U	B	B
312819114007	SARANKUMAR E	B+	B	U	U	A	B	U	U
312819114008	SELVA GANESH T	A+	B+	B	A+	O	B+	U	U
312819114009	SURYA M	B	U	U	B+	A	B+	U	U
312819114010	SURYA R	O	B+	B	A+	O	A	A+	A
312819114011	THULASI DARAN J	B+	B	U	B	A+	B+	U	B
312819114012	VISHWESHWARAN S	O	A	B	B+	O	B+	B+	B+
312819114013	XAVIER RAYAN S	B+	B	U	B+	O	B	U	U

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 03** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 114-B.E. Mechanical Engineering

	Subject Code - >	CE8394	EE8353	EE8361	HS8381	MA8353	ME8351	ME8361	ME8381	ME8391
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817114002	AJAY DEEPAK N					UA				
312817114003	AJITH P									B
312817114006	AJITH KUMAR N						B			U
312817114007	AJITH KUMAR S	UA				U	UA			UA
312817114008	AKASH S						UA			
312817114014	ARUN KUMAR P					U				U
312817114015	AYYAPPAN C									B+
312817114016	AYYAPPAN S					U				U
312817114020	CHANDRABALAN M	U								U
312817114021	COLLIN DAVID D	UA				UA				U
312817114023	DEEPAK KUMAR R		B			UA				
312817114024	DHAYANITHY R					U	B			
312817114027	DINESH KUMAR A					UA				
312817114029	GOKUL VARUN P	UA	UA			UA				
312817114033	KARTHICK C	UA				UA				U
312817114036	KAVI PRAKASH A					U				U
312817114037	KEERTHI VARMAN SNS									U
312817114038	KISHORE REDDY M		B			UA				U
312817114040	KUMARAPPAN MR M					UA				U
312817114042	LOKESH M					U				B
312817114044	MANO RANJAN J	UA				UA				B
312817114045	MARK MILTON A	U	U				UA			U
312817114046	MITHUN KANNAN M					U				
312817114050	MUTHURAJAMANI S					U				U
312817114051	NAMBI RAJAN A									B+
312817114052	NARAYANA PRABHU M					UA	UA			U
312817114057	PRASANTH B									U
312817114059	RAGUL B	UA	U			UA	UA			U
312817114060	RAGUL SJ	U	U			U				
312817114061	RAHUL E									U
312817114064	RAJESH J	U	U			UA				U
312817114065	RAMAJAYAM V	U				U				U
312817114066	RANJITH M	B								U
312817114067	RANJITH KUMAR M						U			U
312817114069	SAJEEV S V	UA				UA				U

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312817114070	SAM BENIN K	UA	U			U				U
312817114075	SATHISH K									U
312817114077	SHANJAI KUMAR GV	B	U			U				U
312817114080	SHEIKH HASSAIN A					B				
312817114083	SRI HARI V									U
312817114085	SUDHAKAR R	UA	U			U				UA
312817114088	SURYA S					U				
312817114089	THAMIZHANBU D	U	U			U	UA			U
312817114094	VASANTH G	U	U			UA				U
312817114095	VIGNESH KUMAR R		U			U				
312817114097	VISHWANATHAN V	B	B			U				B+
312817114100	YUVARAJ S									B
312817114701	MOHAMED FARMAAN	UA				U				UA
312818114001	ARUN KUMAR C	B	B	O	O	B	B	A+	A	B+
312818114002	AYYAPPAN R	U	U	B+	O	U	B	A+	A	U
312818114004	CHRISTOPHER V	A	A	O	O	A	B	O	O	B+
312818114005	DEEPAK MANIKANDAN C V	B	B	A	O	B	B	O	A+	U
312818114006	DILIPKISHNAA K	U	U	A+	O	U	U	O	A	U
312818114007	DINESH G	U	B	A+	O	U	B	A+	B+	U
312818114008	FEBI DAVIS R V	U	U	B+	O	U	U	A	B+	U
312818114009	HARIHARAN E	U	U	A	O	U	U	A+	B+	U
312818114010	HARIHARAN K	B+	B	O	O	B	B+	O	A	U
312818114011	JAYA KUMAR T	U	U	A	O	U	U	A	B+	U
312818114012	KARTHIKEYAN B	U	U	A	O	U	U	O	A	U
312818114013	KESAVAN R									
312818114014	KISHORE A	U	U	UA	O	U	B	A+	A+	U
312818114015	KISHORE KANNAN D	U	B	O	O	U	U	O	O	B
312818114016	KOCIKAN S	U	B	A+	O	U	B+	A	A+	U
312818114017	KRISHNA KUMAAR U	U	B	O	O	U	U	O	A+	B
312818114018	LOGESH SHOBAN RAJ A	B	B	O	O	B	U	O	O	U
312818114019	MADHAN KUMAR M	B	U	O	O	U	U	O	A	U
312818114020	MAHESH E	B	U	O	O	B	B	O	O	B
312818114021	MANOJ M	B	U	A	O	B	U	O	B+	B
312818114023	MOHAN RAJ E	U	U	A	O	U	U	A+	B	U
312818114024	MUTHUKUMAR M	B	B	O	O	U	U	O	B+	U
312818114025	NARESH KALIRAJAN M	B+	B	A+	O	U	B	A+	O	B
312818114026	NAVEEN S	B+	U	A	O	U	B+	O	O	B
312818114027	NITHISH KUMAR ALAGESAN P	B+	U	O	O	B	B	O	O	B
312818114028	PONMANIKANDAN D	B	U	A+	O	B	B	B+	A+	U

312818114030	RAGUBALAN S	B+	B	A+	O	U	B+	O	O	U
312818114031	RAJARAM V	B	B	O	O	U	B	O	O	U
312818114033	RAMAKRISHNAN M	B	B	A+	O	U	B	A+	A+	B
312818114034	RAVICHANDRAN K	U	U	A	O	U	U	A	B+	U
312818114035	SABEEL AHMED F	B	U	O	O	U	B	O	A+	U
312818114036	SELVAKUMAR M	B	B	B+	O	B	B	A+	A	U
312818114037	SIVAOLI K	B	B	A	O	B	B	A+	A+	U
312818114038	SIVARAJ S	U	B	A	O	U	B+	A+	B+	U
312818114039	SRIRAM S	U	U	B+	O	U	U	B+	B+	U
312818114040	SUBASH V	B+	B	O	O	B	B	A	A	U
312818114041	SUGUMAR S	B	B	A+	O	U	B	A+	A	B
312818114042	SUNILKUMAR S	B+	B	O	O	U	B	O	O	U
312818114043	SURIYA T	U	B	A	O	U	B	A+	O	B
312818114044	THAMIZHARASAN B	U	B	B+	O	U	U	O	A+	U
312818114045	THENNILAVAN P V	U	U	O	O	U	U	A+	O	B
312818114046	VASANTH B	U	B	A+	O	U	B	O	O	U
312818114048	VIGNESH KUMAR I	B+	B+	A+	O	B	B+	O	A+	B
312818114049	VIJAYARANGAN A	B+	B	O	O	B	B	O	O	B+
312818114050	VIKRAM S	U	U	A	O	U	B	A+	O	U
312818114051	YUKESH KUMAR R	U	U	B+	O	U	B+	O	A+	U
312818114301	GOKUL R	B	U	B+	O	U	U	A+	A	U
312818114302	KAVIYARASAN B	B	B	A+	O	U	B	A+	A+	U
312818114701	KARTHIK S	U	U	O	O	U	B	O	A+	B
312818114702	ASADULLAH KHAN R	U	U	O	O	U	B	A+	A+	B

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 05** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 114-B.E. Mechanical Engineering

	Subject Code - >	ME8501	ME8511	ME8512	ME8513	ME8593	ME8594	ME8595	OAT552
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817114001	AAKASH A	A	O	A+	A+	B+	B+	B+	B
312817114002	AJAY DEEPAK N	B	A	A+	A+	UA	B	U	B
312817114003	AJITH P	A+	A	A	A	B	B	B	B
312817114004	AJITH VC	A+	A+	O	O	B	A+	B	B+
312817114005	AJITHKUMAR V	B	A+	A+	O	B	B+	U	B
312817114006	AJITH KUMAR N	B	A	A	A+	B	U	B	U
312817114007	AJITH KUMAR S	U	B+	B+	B+	U	U	U	U
312817114008	AKASH S	U	A+	B+	B+	B	B+	B	U
312817114009	ARAVIND B	A	O	O	O	B	B+	A	B+
312817114010	ARAVIND K	A+	O	O	O	B+	A	B+	A
312817114011	ARAVINTHAN B	B+	O	O	O	B	B+	B+	B+
312817114012	ARAVINTHAN L	B+	O	A+	O	B	B	B+	B+
312817114013	ARUN A	U	O	A	A+	B	B+	B	B+
312817114014	ARUN KUMAR P	B+	O	A+	O	U	B	B+	B+
312817114015	AYYAPPAN C	B+	A+	O	O	B+	B+	B+	B+
312817114016	AYYAPPAN S	B	A+	B+	A+	U	U	B	B
312817114017	BALAJI P	U	A+	B+	O	U	B	B+	B+
312817114018	BALAMURUGAN K	B	O	O	O	B	A+	B+	U
312817114019	BARATH KUMAR M	A	O	B+	O	B	B+	B	B+
312817114020	CHANDRABALAN M	B	A	B+	A	U	B	B	U
312817114021	COLLIN DAVID D	B	A	B+	A+	U	B	B	U
312817114022	DEEPAK B	B	A+	A	A+	B	B	U	U
312817114023	DEEPAK KUMAR R	B	A	A	A+	U	U	U	B
312817114024	DHAYANITHY R	B	A+	B+	B+	U	U	U	B
312817114025	DILLIBABU S	B+	O	O	O	B+	O	A	B+
312817114026	DINESH RP	B+	A+	A	O	B	B	B	B+
312817114027	DINESH KUMAR A	B	A	B+	A+	U	B	U	U
312817114028	ESAKKIVEL A	A	O	O	O	B	B	B	A
312817114029	GOKUL VARUN P	U	O	A+	A	U	U	U	U
312817114031	HEMAPRAKASH S	B	O	O	O	U	U	U	B
312817114032	KAMALIYAL R	A	O	O	O	B	B	B+	B
312817114033	KARTHICK C	B	A	A+	O	B	B	U	B
312817114034	KARTHICK G	A	O	A+	O	B	B+	B	B
312817114035	KARUPPASAMY P	A	O	O	A+	A	A+	A	B+
312817114036	KAVI PRAKASH A	A	A+	B+	A+	B	U	B	B

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312817114037	KEERTHI VARMAN SNS	B	A+	A	A+	B	B	U	B
312817114038	KISHORE REDDY M	B	A+	A	A+	U	B	B	B+
312817114040	KUMARAPPAN MR M	U	A+	A+	A+	U	B	B+	B+
312817114041	LOGESH N	B	O	A+	O	B	B	A	B+
312817114042	LOKESH M	B	A+	A+	A+	U	B+	B	B
312817114043	MANIKANDAN A	B+	O	O	O	B	B+	B+	B+
312817114044	MANO RANJAN J	B	A+	A+	A+	B	B	B+	B
312817114045	MARK MILTON A	U	A+	B+	O	B	B	U	B
312817114046	MITHUN KANNAN M	B	A+	B+	A+	U	B+	B	B
312817114048	MUKESH KANNA S	B	A+	A	O	B	B+	B	B
312817114050	MUTHURAJAMANI S	U	O	A	A+	U	B	U	B
312817114051	NAMBI RAJAN A	B	A+	O	A+	B+	B	B+	B
312817114052	NARAYANA PRABHU M	U	A	A	A	U	U	B	U
312817114054	PALANI KISHORE R	B+	O	O	O	B+	B+	B	A
312817114056	PRAKASH RAJ M	B	O	A+	O	A	B+	B+	B
312817114057	PRASANTH B	B+	A+	A	B+	B	B	B+	B+
312817114058	PRAVIN D	B+	O	A	A+	B+	A	B	B+
312817114059	RAGUL B	U	B+	B	A	U	U	U	U
312817114060	RAGUL SJ	B	A	A	A	B	B+	U	U
312817114061	RAHUL E	B+	A	B+	A	B+	B	B	B+
312817114063	RAJARAJAN S	B+	O	O	O	A	A+	A+	B+
312817114064	RAJESH J	U	B+	B+	B+	B	U	U	B
312817114065	RAMAJAYAM V	U	B+	B	A+	U	U	U	B
312817114066	RANJITH M	B	A	B+	A	U	U	U	B+
312817114067	RANJITH KUMAR M	B+	A	A	A+	B	B	B	B+
312817114069	SAJEEV S V	B	A	B	A	U	U	B	B
312817114070	SAM BENIN K	B	A	B	A+	U	U	B	B
312817114071	SARAN G	A	O	O	O	A	A+	B	A
312817114072	SARAVANA KUMARAN S	B+	A+	O	O	B	B+	B	B+
312817114073	SARAVANAN S (29-08-1999)	B+	O	O	O	B+	B+	B	B+
312817114074	SARAVANAN S (12-09-1999)	B	O	O	O	B	B	B+	B
312817114075	SATHISH K	U	A+	B+	A	B	U	B	B
312817114076	SEENIVASAHA PERUMAL M	B+	O	O	O	B	A	B+	B
312817114077	SHANJAI KUMAR GV	U	A	A+	A	U	U	U	B
312817114078	SHARAFATH ALI I	U	O	O	O	B	A	B	B
312817114080	SHEIKH HASSAIN A	U	O	A	O	B	B	B	B
312817114081	SIVA R	B	A+	A+	O	U	B	B	B
312817114082	SREE NIVAAS SR	U	O	O	O	B+	B	U	B+
312817114083	SRI HARI V	U	O	A+	O	B	B	U	B

312817114084	SUBASH R	B+	O	O	O	A	B	B	A
312817114085	SUDHAKAR R	U	A	A	A+	U	U	U	U
312817114088	SURYA S	B+	A+	O	A+	B	B	B+	B
312817114089	THAMIZHANBU D	U	A	B	A	U	U	U	U
312817114090	THILIPAN CP	A+	O	A+	O	U	B+	B	B+
312817114091	THIRUMOORTHI P	A+	O	A+	O	B	B+	B+	B
312817114092	UDAYAN R	B+	O	O	O	B	B	B+	B+
312817114094	VASANTH G	B	A	B+	A+	U	U	U	B
312817114095	VIGNESH KUMAR R	U	A+	A+	A+	U	U	U	U
312817114097	VISHWANATHAN V	U	A	O	A+	B	B	B+	B
312817114099	YUVARAJ E	B	O	O	O	U	A	U	B
312817114100	YUVARAJ S	B	O	A+	O	B+	B+	B+	B
312817114701	MOHAMED FARMAAN	U	A+	B+	A+	U	U	U	U

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 08** **DATE OF PUBLICATION :17-10-2020**

Branch : 114-B.E. Mechanical Engineering

	Subject Code - >	IE6605	ME6016	ME6811	MG6863
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade
312813114072	RANJITH A M		D		D
312813114099	YOGANATHAN T				U
312814114020	BENIZION L		UA		
312814114028	DINESH A	UA	UA		UA
312814114034	HARIKARAN S		C		
312814114098	THANIGAIVEL SELVAN S		B		
312814114102	VIGNESH B		B		C
312814114108	VIJAY G	UA	UA		UA
312814114313	SIVAPRAKASAM S		C		
312814114314	THIRSHATHA KIRUBHAKAR K	C	C		
312814114316	VASUKRISHNA K	B	B		
312815114023	DHILIPKUMAR M	D			
312815114053	MOHAMED RASIK A	C	C		D
312815114059	NAVEEN VP	E			E
312815114070	PRASANTH V	C	C		D
312815114081	RANJITH A	E	E		C
312815114088	SACHIN RAJ A				C
312815114100	SRIDHAR S	C			
312815114106	TAMIL SELVAN S	UA	UA		UA
312815114304	VENKATESH R	E	E		
312816114001	AAKASH R	E	D	A	D
312816114002	AAKASH S	S	A	S	A
312816114003	ABDULLA K	C	B	S	B
312816114004	ABINATH V	B	B	S	B
312816114006	AJITH R L	B	B	A	A
312816114007	AJITH KUMAR M	B	B	S	A
312816114008	AJITH KUMAR S	D	D	A	C
312816114009	ANSON PAULY	C	C	S	B
312816114010	ARAVIND R	C	C	A	C
312816114011	ARIVUSELVAN E	B	C	S	B
312816114012	ARJUN R	A	B	S	A
312816114013	ARULKUMAR S	B	B	A	B
312816114015	ASHOK KUMAR S	A	B	S	A
312816114016	ASHWATH E	B	A	S	A

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312816114018	BALAJI E	A	B	S	A
312816114019	BALAJI S	A	B	S	B
312816114020	BALAKRISHNAN A	C	C	S	B
312816114021	BHARATH R	B	B	S	B
312816114022	BHARATH KUMAR R	A	B	S	A
312816114023	BHUVANESH K	B	C	S	B
312816114024	DEV ANAND D	A	A	S	A
312816114026	DHIVAKAR C S	C	B	S	A
312816114027	DILIP SAHADEV M	B	C	S	B
312816114028	DINESH B	B	B	A	A
312816114029	EMAYAVARMAN S	B	B	A	B
312816114030	FAZIL N	B	B	S	A
312816114031	GOKULRAJ E	B	B	S	A
312816114032	HARISH M	E	D	S	C
312816114033	HARKREESH RA	B	B	S	B
312816114034	JAYA BHARATHY R	B	A	S	B
312816114035	JAYAPAL P	UA	C	S	B
312816114037	KAMAL BHARATHI M	A	B	S	A
312816114038	KARTHICK R	A	A	S	A
312816114039	KATHIRAVAN D	C	C	S	B
312816114040	KAVIBHARATHY D	B	B	S	B
312816114041	KEERTHIKEYAN P	B	A	S	A
312816114042	KISHORE KUMAR P	B	B	S	A
312816114044	MARISELVAM S	A	B	S	A
312816114045	MICHAEL REBINCE A	S	S	S	S
312816114046	MOHAMAD MUSAMIL A	B	B	S	A
312816114047	MOSY KIRAN T	E	E	A	E
312816114049	MURALI DHARAN A S	E	E	A	C
312816114051	MURUGANANDA KUMAR S	A	B	S	B
312816114052	NACHINARKINIYAN N	C	C	S	B
312816114053	NARAYANAN P	C	B	S	C
312816114054	NARESH N	C	B	S	D
312816114055	NIRMAL KUMAR R	B	A	S	A
312816114056	OVURAJ K	C	B	S	B
312816114057	PAVITHRAN R	C	B	S	C
312816114058	PONRAJ K	A	S	S	A
312816114059	POOVAZHAGAN M	C	B	S	A
312816114060	PRABAKARAN R	A	B	S	A
312816114062	PRAVEEN KUMAR P	C	B	S	C
312816114063	PREM E	C	C	S	C

312816114065	RAGUL D T	C	C	S	B
312816114066	RAJALINGAM R	B	B	S	A
312816114067	RAJESH S	D	C	S	B
312816114068	RAJESH KANNA N	B	B	S	B
312816114069	RAJKUMAR G	C	A	S	A
312816114070	RAKESH KUMAR U	A	A	S	A
312816114071	RAMEEZ RAJA M	E	D	A	B
312816114073	REETHU G	B	B	S	B
312816114074	ROBIN JEBAKUMAR J	A	B	S	A
312816114075	SAGAR M	C	B	S	B
312816114076	SAKTHI VEL D	A	S	S	A
312816114077	SALMAN FARIS N	B	B	S	B
312816114078	SANTHOSH K	A	B	S	A
312816114079	SIVA GURU S	B	B	S	B
312816114080	SREEJITH S	B	B	S	B
312816114081	SUGAVANESH M	B	B	S	B
312816114082	TILAKRAJ D K	C	C	A	C
312816114083	UDHAYA KUMAR R	A	A	S	A
312816114084	VENKAT G SURYA	C	B	S	B
312816114085	VIGNESH K M	C	A	S	B
312816114086	VIGNESH V	C	C	S	C
312816114088	VIGNESHWARAN N	B	A	S	A
312816114089	VINOTH KUMAR E	B	A	S	A
312816114091	VISHNU SHAJI	A	A	S	A
312816114092	VIVEK B	B	A	S	A
312816114093	VIVEKANANTHAN M	C	B	S	B
312816114094	YASHIC P	C	C	S	B
312816114301	GUNA S	E	D	A	C
312816114302	MANIVANNAN S	B	B	S	B
312816114303	RAJAPANDI S	D	C	S	C

ANNA UNIVERSITY, CHENNAI

AFFILIATED INSTITUTIONS

B.E. MECHANICAL ENGINEERING

REGULATIONS – 2017

CHOICE BASED CREDIT SYSTEM

PROGRAMME EDUCATIONAL OBJECTIVES:

Bachelor of Mechanical Engineering curriculum is designed to impart Knowledge, Skill and Attitude on the graduates to

1. Have a successful career in Mechanical Engineering and allied industries.
2. Have expertise in the areas of Design, Thermal, Materials and Manufacturing.
3. Contribute towards technological development through academic research and industrial practices.
4. Practice their profession with good communication, leadership, ethics and social responsibility.
5. Graduates will adapt to evolving technologies through life-long learning.

PROGRAMME OUTCOMES

1. An ability to apply knowledge of mathematics and engineering sciences to develop mathematical models for industrial problems.
2. An ability to identify, formulates, and solve complex engineering problems. with high degree of competence.
3. An ability to design and conduct experiments, as well as to analyze and interpret data obtained through those experiments.
4. An ability to design mechanical systems, component, or a process to meet desired needs within the realistic constraints such as environmental, social, political and economic sustainability.
5. An ability to use modern tools, software and equipment to analyze multidisciplinary problems.
6. An ability to demonstrate on professional and ethical responsibilities.
7. An ability to communicate, write reports and express research findings in a scientific community.
8. An ability to adapt quickly to the global changes and contemporary practices.
9. An ability to engage in life-long learning.

PEO / PO Mapping

Programme Educational Objectives	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
I	✓	✓	✓	✓	✓	✓	✓	✓	✓
II	✓	✓	✓		✓			✓	
III		✓		✓	✓	✓		✓	
IV					✓	✓	✓		✓
V		✓	✓	✓	✓				✓

		COURSE TITLE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
YEAR 1	SEM 1	Communicative English							✓		
		Engineering Mathematics I	✓	✓	✓						✓
		Engineering Physics	✓	✓	✓						✓
		Engineering Chemistry				✓					
		Problem Solving and Python Programming					✓				
		Engineering Graphics		✓	✓				✓		
		Problem Solving and Python Programming Laboratory			✓		✓				
		Physics and Chemistry Laboratory			✓						
		COURSE TITLE	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**
	SEM 2	Technical English							✓		
		Engineering Mathematics II	✓	✓	✓				✓		✓
		Materials Science				✓				✓	
		Basic Electrical, Electronics and Instrumentation Engineering				✓				✓	
		Environmental Science and Engineering				✓					
		Engineering Mechanics	✓	✓					✓	✓	✓
		Engineering Practices Laboratory			✓						
		Basic Electrical, Electronics and Instrumentation Engineering			✓						
		COURSE TITLE	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**
YEAR 2	SEM 3	Transforms and Partial Differential Equations	✓	✓	✓					✓	✓
		Engineering Thermodynamics	✓	✓	✓				✓	✓	
		Fluid Mechanics and Machinery	✓	✓	✓						
		Manufacturing Technology - I			✓	✓	✓	✓		✓	✓
		Electrical Drives and Controls									
		Manufacturing Technology Laboratory - I			✓	✓	✓	✓		✓	✓
		Computer Aided Machine Drawing			✓	✓	✓	✓		✓	✓
		Electrical Engineering Laboratory			✓						
		Interpersonal Skills / Listening & Speaking			✓						
		COURSE TITLE	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**
	SEM 4	Statistics and Numerical Methods	✓	✓							
		Kinematics of Machinery	✓	✓	✓		✓				
		Manufacturing Technology– II	✓		✓	✓	✓			✓	✓
		Engineering Metallurgy							✓		

		Strength of Materials for Mechanical Engineers	✓	✓	✓	✓					
		Thermal Engineering- I	✓	✓			✓				
		Manufacturing Technology Laboratory–II			✓						
		Strength of Materials and Fluid Mechanics Machinery Laboratory			✓						
		Advanced Reading and Writing						✓			✓
		COURSE TITLE	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**
YEAR 3	**SEM 5**	Thermal Engineering- II	✓	✓			✓			✓	
		Design of Machine Elements		✓		✓			✓	✓	✓
		Metrology and Measurements	✓		✓	✓			✓	✓	
		Dynamics of Machines	✓	✓	✓		✓		✓		✓
		Kinematics and Dynamics Laboratory	✓	✓	✓	✓					
		Thermal Engineering Laboratory	✓	✓	✓						
		Metrology and Measurements Laboratory	✓	✓	✓	✓			✓		
		COURSE TITLE	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**
	SEM 6	Design of Transmission Systems		✓		✓			✓		✓
		Computer Aided Design and Manufacturing		✓	✓		✓				
		Heat and Mass Transfer	✓	✓	✓	✓				✓	✓
		Finite Element Analysis	✓	✓		✓					✓
		Hydraulics and Pneumatics	✓	✓		✓				✓	
		C.A.D. / C.A.M. Laboratory		✓	✓			✓			
		Design and Fabrication Project						✓	✓		✓
		Professional Communication				✓	✓	✓	✓		✓
		COURSE TITLE	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**
YEAR 4	**SEM 7**	Power Plant Engineering	✓	✓	✓	✓				✓	
		Mechatronics	✓	✓	✓		✓			✓	✓
		Process Planning and Cost Estimation		✓		✓					
		Simulation and Analysis Laboratory	✓				✓		✓		
		Mechatronics Laboratory	✓	✓	✓		✓			✓	✓
		Technical Seminar						✓			
	SEM 8	Project Work	✓	✓	✓			✓	✓		
		Principles of Management						✓			✓

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
B.E. MECHANICAL ENGINEERING
REGULATIONS - 2017
CHOICE BASED CREDIT SYSTEM
I TO VIII SEMESTERS CURRICULA AND SYLLABI

SEMESTER I

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	**31**	**19**	**0**	**12**	**25**

SEMESTER II

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8251	Materials Science	BS	3	3	0	0	3
4.	BE8253	Basic Electrical, Electronics and Instrumentation Engineering	ES	3	3	0	0	3
5.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
6.	GE8292	Engineering Mechanics	ES	5	3	2	0	4
PRACTICALS								
7.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8.	BE8261	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	ES	4	0	0	4	2
			TOTAL	**30**	**20**	**2**	**8**	**25**

SEMESTER III

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
2.	ME8391	Engineering Thermodynamics	PC	5	3	2	0	4
3.	CE8394	Fluid Mechanics and Machinery	ES	4	4	0	0	4
4.	ME8351	Manufacturing Technology - I	PC	3	3	0	0	3
5.	EE8353	Electrical Drives and Controls	ES	3	3	0	0	3
PRACTICAL								
6.	ME8361	Manufacturing Technology Laboratory - I	PC	4	0	0	4	2
7.	ME8381	Computer Aided Machine Drawing	PC	4	0	0	4	2
8.	EE8361	Electrical Engineering Laboratory	ES	4	0	0	4	2
9.	HS8381	Interpersonal Skills / Listening & Speaking	EEC	2	0	0	2	1
			TOTAL	**33**	**17**	**2**	**14**	**25**

SEMESTER IV

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8452	Statistics and Numerical Methods	BS	4	4	0	0	4
2.	ME8492	Kinematics of Machinery	PC	3	3	0	0	3
3.	ME8451	Manufacturing Technology – II	PC	3	3	0	0	3
4.	ME8491	Engineering Metallurgy	PC	3	3	0	0	3
5.	CE8395	Strength of Materials for Mechanical Engineers	ES	3	3	0	0	3
6.	ME8493	Thermal Engineering- I	PC	3	3	0	0	3
PRACTICAL								
7.	ME8462	Manufacturing Technology Laboratory – II	PC	4	0	0	4	2
8.	CE8381	Strength of Materials and Fluid Mechanics and Machinery Laboratory	ES	4	0	0	4	2
9.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
			TOTAL	**29**	**19**	**0**	**10**	**24**

SEMESTER V

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	ME8595	Thermal Engineering- II	PC	3	3	0	0	3
2.	ME8593	Design of Machine Elements	PC	3	3	0	0	3
3.	ME8501	Metrology and Measurements	PC	3	3	0	0	3
4.	ME8594	Dynamics of Machines	PC	4	4	0	0	4
5.		Open Elective I	OE	3	3	0	0	3
PRACTICAL								
6.	ME8511	Kinematics and Dynamics Laboratory	PC	4	0	0	4	2
7.	ME8512	Thermal Engineering Laboratory	PC	4	0	0	4	2
8.	ME8513	Metrology and Measurements Laboratory	PC	4	0	0	4	2
			TOTAL	**28**	**16**	**0**	**12**	**22**

SEMESTER VI

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	ME8651	Design of Transmission Systems	PC	3	3	0	0	3
2.	ME8691	Computer Aided Design and Manufacturing	PC	3	3	0	0	3
3.	ME8693	Heat and Mass Transfer	PC	5	3	2	0	4
4.	ME8692	Finite Element Analysis	PC	3	3	0	0	3
5.	ME8694	Hydraulics and Pneumatics	PC	3	3	0	0	3
6.		Professional Elective - I	PE	3	3	0	0	3
PRACTICAL								
7.	ME8681	CAD / CAM Laboratory	PC	4	0	0	4	2
8.	ME8682	Design and Fabrication Project	EEC	4	0	0	4	2
9.	HS8581	Professional Communication	EEC	2	0	0	2	1
			TOTAL	**30**	**18**	**2**	**10**	**24**

SEMESTER VII

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	ME8792	Power Plant Engineering	PC	3	3	0	0	3
2.	ME8793	Process Planning and Cost Estimation	PC	3	3	0	0	3
3.	ME8791	Mechatronics	PC	3	3	0	0	3
4.		Open Elective - II	OE	3	3	0	0	3
5.		Professional Elective – II	PE	3	3	0	0	3
6.		Professional Elective – III	PE	3	3	0	0	3
PRACTICAL								
7.	ME8711	Simulation and Analysis Laboratory	PC	4	0	0	4	2
8.	ME8781	Mechatronics Laboratory	PC	4	0	0	4	2
9.	ME8712	Technical Seminar	EEC	2	0	0	2	1
			TOTAL	**28**	**18**	**0**	**10**	**23**

SEMESTER VIII

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MG8591	Principles of Management	HS	3	3	0	0	3
2.		Professional Elective– IV	PE	3	3	0	0	3
PRACTICAL								
3.	ME8811	Project Work	EEC	20	0	0	20	10
			TOTAL	**29**	**9**	**0**	**20**	**16**

TOTAL NUMBER OF CREDITS TO BE EARNED FOR AWARD OF THE DEGREE = 184

HUMANITIES AND SOCIAL SCIENCES (HS)

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	HS8251	Technical English	HS	4	4	0	0	4
3.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
4.	MG8591	Principles of Management	HS	3	3	0	0	3

BASIC SCIENCE (BS)

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA8151	Engineering Mathematics - I	BS	5	3	2	0	4
2.	PH8151	Engineering Physics	BS	3	3	0	0	3
3.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
4.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
5.	MA8251	Engineering Mathematics II	BS	4	4	0	0	4
6.	PH8251	Materials Science	BS	3	3	0	0	3
7.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
8.	MA8452	Statistics and Numerical Methods	BS	4	4	0	0	4

ENGINEERING SCIENCES (ES)

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
2.	GE8152	Engineering Graphics	ES	6	2	0	4	4
3.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
4.	BE8253	Basic Electrical, Electronics and Instrumentation Engineering	ES	3	3	0	0	3
5.	GE8292	Engineering Mechanics	ES	5	3	2	0	4
6.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
7.	BE8261	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	ES	4	0	0	4	2
8.	CE8394	Fluid Mechanics and Machinery	ES	5	3	2	0	4
9.	EE8353	Electrical Drives and Controls	ES	3	3	0	0	3
10.	EE8361	Electrical Engineering Laboratory	ES	4	0	0	4	2
11.	CE8395	Strength of Materials for Mechanical Engineers	ES	3	3	0	0	3
12.	CE8381	Strength of Materials and Fluid Mechanics and Machinery Laboratory	ES	4	0	0	4	2

PROFESSIONAL CORE (PC)

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ME8391	Engineering Thermodynamics	PC	5	3	2	0	4
2.	ME8351	Manufacturing Technology - I	PC	3	3	0	0	3
3.	ME8361	Manufacturing Technology Laboratory - I	PC	4	0	0	4	2
4.	ME8381	Computer Aided Machine Drawing	PC	4	0	0	4	2
5.	ME8492	Kinematics of Machinery	PC	3	3	0	0	3
6.	ME8451	Manufacturing Technology– II	PC	3	3	0	0	3
7.	ME8491	Engineering Metallurgy	PC	3	3	0	0	3
8.	ME8493	Thermal Engineering- I	PC	3	3	0	0	3
9.	ME8462	Manufacturing Technology Laboratory–II	PC	4	0	0	4	2
10.	ME8595	Thermal Engineering- II	PC	3	3	0	0	3
11.	ME8593	Design of Machine Elements	PC	3	3	0	0	3
12.	ME8501	Metrology and Measurements	PC	3	3	0	0	3
13.	ME8594	Dynamics of Machines	PC	4	4	0	0	4
14.	ME8511	Kinematics and Dynamics Laboratory	PC	4	0	0	4	2
15.	ME8512	Thermal Engineering Laboratory	PC	4	0	0	4	2
16.	ME8513	Metrology and Measurements Laboratory	PC	4	0	0	4	2
17.	ME8651	Design of Transmission Systems	PC	3	3	0	0	3
18.	ME8691	Computer Aided Design and Manufacturing	PC	3	3	0	0	3
19.	ME8693	Heat and Mass Transfer	PC	5	3	2	0	4
20.	ME8692	Finite Element Analysis	PC	3	3	0	0	3
21.	ME8694	Hydraulics and Pneumatics	PC	3	3	0	0	3
22.	ME8681	C.A.D. / C.A.M. Laboratory	PC	4	0	0	4	2
23.	ME8682	Design and Fabrication Project	PC	4	0	0	4	2
24.	ME8792	Power Plant Engineering	PC	3	3	0	0	3
25.	ME8791	Mechatronics	PC	3	3	0	0	3
26.	ME8793	Process Planning and Cost Estimation	PC	3	3	0	0	3
27.	ME8711	Simulation and Analysis Laboratory	PC	4	0	0	4	2
28.	ME8781	Mechatronics Laboratory	PC	4	0	0	4	2

PROFESSIONAL ELECTIVES FOR B.E. MECHANICAL ENGINEERING

SEMESTER VI, ELECTIVE I

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ME8091	Automobile Engineering	PE	3	3	0	0	3
2.	PR8592	Welding Technology	PE	3	3	0	0	3
3.	ME8096	Gas Dynamics and Jet Propulsion	PE	3	3	0	0	3
4.	GE8075	Intellectual Property Rights	PE	3	3	0	0	3
5.	GE8073	Fundamentals of Nano Science	PE	3	3	0	0	3

SEMESTER VII, ELECTIVE II

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ME8071	Refrigeration and Air conditioning	PE	3	3	0	0	3
2.	ME8072	Renewable Sources of Energy	PE	3	3	0	0	3
3.	ME8098	Quality Control and Reliability Engineering	PE	3	3	0	0	3
4.	ME8073	Unconventional Machining Processes	PE	3	3	0	0	3
5.	MG8491	Operations Research	PE	3	3	0	0	3
6.	MF8071	Additive Manufacturing	PE	3	3	0	0	3
7.	GE8077	Total Quality Management	PE	3	3	0	0	3

SEMESTER VII, ELECTIVE III

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ME8099	Robotics	PE	3	3	0	0	3
2.	ME8095	Design of Jigs, Fixtures and Press Tools	PE	3	3	0	0	3
3.	ME8093	Computational Fluid Dynamics	PE	3	3	0	0	3
4.	ME8097	Non Destructive Testing and Evaluation	PE	3	3	0	0	3
5.	ME8092	Composite Materials and Mechanics	PE	3	3	0	0	3
6.	GE8072	Foundation Skills in Integrated Product Development	PE	3	3	0	0	3
7.	GE8074	Human Rights	PE	3	3	0	0	3
8.	GE8071	Disaster Management	PE	3	3	0	0	3

SEMESTER VIII, ELECTIVE IV

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	IE8693	Production Planning and Control	PE	3	3	0	0	3
2.	MG8091	Entrepreneurship Development	PE	3	3	0	0	3
3.	ME8094	Computer Integrated Manufacturing Systems	PE	3	3	0	0	3
4.	ME8074	Vibration and Noise Control	PE	3	3	0	0	3
5.	EE8091	Micro Electro Mechanical Systems	PE	3	3	0	0	3
6.	GE8076	Professional Ethics in Engineering	PE	3	3	0	0	3

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8381	Interpersonal Skills/Listening &	EEC	4	0	0	4	2
2.	ME8712	Technical Seminar	EEC	2	0	0	2	1
3.	ME8811	Project Work	EEC	20	0	0	20	12
4.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
5.	ME8682	Design and Fabrication Project	EEC	4	0	0	4	2
6.	HS8581	Professional Communication	EEC	2	0	0	2	1

SUMMARY

SL. NO.	SUBJECT AREA	CREDITS PER SEMESTER								CREDITS TOTAL	Percentage %
		I	II	III	IV	V	VI	VII	VIII		
1.	HS	4	7	-	-	-		-	3	14	7.61%
2.	BS	12	7	4	4	-	-	-	-	27	14.67%
3.	ES	9	11	9	5	-	-	-	-	33	17.80%
4.	PC	-	-	11	14	19	18	13	-	74	40.22%
5.	PE	-	-	-	-	-	3	6	3	15	8.15%
6.	OE	-	-	-	-	3	-	3		6	3.26%
7.	EEC	-	-	1	1	-	3	1	10	16	7.6%
	Total	25	25	25	24	22	24	23	16	184	
8.	Non Credit / Mandatory										

UNIT IV FOURIER TRANSFORMS 12

Statement of Fourier integral theorem – Fourier transform pair – Fourier sine and cosine transforms – Properties – Transforms of simple functions – Convolution theorem – Parseval's identity.

UNIT V Z - TRANSFORMS AND DIFFERENCE EQUATIONS 12

Z-transforms - Elementary properties – Inverse Z-transform (using partial fraction and residues) – Initial and final value theorems - Convolution theorem - Formation of difference equations – Solution of difference equations using Z - transform.

TOTAL : 60 PERIODS

OUTCOMES :

Upon successful completion of the course, students should be able to:

- Understand how to solve the given standard partial differential equations.
- Solve differential equations using Fourier series analysis which plays a vital role in engineering applications.
- Appreciate the physical significance of Fourier series techniques in solving one and two dimensional heat flow problems and one dimensional wave equations.
- Understand the mathematical principles on transforms and partial differential equations would provide them the ability to formulate and solve some of the physical problems of engineering.
- Use the effective mathematical tools for the solutions of partial differential equations by using Z transform techniques for discrete time systems.

TEXT BOOKS :

1. Grewal B.S., "Higher Engineering Mathematics", 43rd Edition, Khanna Publishers, New Delhi, 2014.
2. Narayanan S., Manicavachagom Pillay.T.K and Ramanaiah.G "Advanced Mathematics for Engineering Students", Vol. II & III, S.Viswanathan Publishers Pvt. Ltd, Chennai, 1998.

REFERENCES :

1. B.V Ramana.., "Higher Engineering Mathematics", McGraw Hill Education Pvt. Ltd, New Delhi, 2016.
2. Erwin Kreyszig, "Advanced Engineering Mathematics ", 10th Edition, John Wiley, India, 2016.
3. G. James, "Advanced Modern Engineering Mathematics", 3rd Edition, Pearson Education, 2007.
4. L.C Andrews, L.C and Shivamoggi, B, "Integral Transforms for Engineers" SPIE Press, 1999.
5. N.P. Bali. and Manish Goyal, "A Textbook of Engineering Mathematics", 9th Edition, Laxmi Publications Pvt. Ltd, 2014.
6. R.C. Wylie, and Barrett, L.C., "Advanced Engineering Mathematics "Tata McGraw Hill Education Pvt. Ltd, 6th Edition, New Delhi, 2012.

ME8391 ENGINEERING THERMODYNAMICS

L	T	P	C
3	2	0	4

OBJECTIVE:

- To familiarize the students to understand the fundamentals of thermodynamics and to perform thermal analysis on their behavior and performance.

  (Use of Standard and approved Steam Table, Mollier Chart, Compressibility Chart and Psychrometric Chart permitted)

UNIT I BASIC CONCEPTS AND FIRST LAW 9+6

Basic concepts - concept of continuum, comparison of microscopic and macroscopic approach. Path and point functions. Intensive and extensive, total and specific quantities. System and their types. Thermodynamic Equilibrium State, path and process. Quasi-static, reversible and irreversible processes. Heat and work transfer, definition and comparison, sign convention. Displacement work and other modes of work .P-V diagram. Zeroth law of thermodynamics – concept of temperature and thermal equilibrium– relationship between temperature scales –new temperature scales. First law of thermodynamics –application to closed and open systems – steady and unsteady flow processes.

UNIT II SECOND LAW AND AVAILABILITY ANALYSIS 9+6

Heat Reservoir, source and sink. Heat Engine, Refrigerator, Heat pump. Statements of second law and its corollaries. Carnot cycle Reversed Carnot cycle, Performance. Clausius inequality. Concept of entropy, T-s diagram, Tds Equations, entropy change for - pure substance, ideal gases - different processes, principle of increase in entropy. Applications of II Law. High and low grade energy. Available and non-available energy of a source and finite body. Energy and irreversibility. Expressions for the energy of a closed system and open systems. Energy balance and entropy generation. Irreversibility. I and II law Efficiency.

UNIT III PROPERTIES OF PURE SUBSTANCE AND STEAM POWER CYCLE 9+6

Formation of steam and its thermodynamic properties, p-v, p-T, T-v, T-s, h-s diagrams. p-v-T surface. Use of Steam Table and Mollier Chart. Determination of dryness fraction. Application of I and II law for pure substances. Ideal and actual Rankine cycles, Cycle Improvement Methods - Reheat and Regenerative cycles, Economiser, preheater, Binary and Combined cycles.

UNIT IV IDEAL AND REAL GASES, THERMODYNAMIC RELATIONS 9+6

Properties of Ideal gas- Ideal and real gas comparison- Equations of state for ideal and real gases- Reduced properties. Compressibility factor-.Principle of Corresponding states. -Generalised Compressibility Chart and its use-. Maxwell relations, Tds Equations, Difference and ratio of heat capacities, Energy equation, Joule-Thomson Coefficient, Clausius Clapeyron equation, Phase Change Processes. Simple Calculations.

UNIT V GAS MIXTURES AND PSYCHROMETRY 9+6

Mole and Mass fraction, Dalton's and Amagat's Law. Properties of gas mixture – Molar mass, gas constant, density, change in internal energy, enthalpy, entropy and Gibbs function. Psychrometric properties, Psychrometric charts. Property calculations of air vapour mixtures by using chart and expressions. Psychrometric process – adiabatic saturation, sensible heating and cooling, humidification, dehumidification, evaporative cooling and adiabatic mixing. Simple Applications

TOTAL : 75 PERIODS

OUTCOMES:

Upon the completion of this course the students will be able to

CO1 Apply the first law of thermodynamics for simple open and closed systems under steady and unsteady conditions.

CO2 Apply second law of thermodynamics to open and closed systems and calculate entropy and availability.

CO3 Apply Rankine cycle to steam power plant and compare few cycle improvement methods

CO4 Derive simple thermodynamic relations of ideal and real gases

CO5 Calculate the properties of gas mixtures and moist air and its use in psychometric processes

TEXT BOOKS :

1. R.K.Rajput, "A Text Book Of Engineering Thermodynamics ",Fifth Edition,2017.
2. Yunus a. Cengel & michael a. Boles, "Thermodynamics", 8th edition 2015.

REFERENCES:
1. Arora C.P, “Thermodynamics”, Tata McGraw-Hill, New Delhi, 2003.
2. Borgnakke & Sonnatag, “Fundamental of Thermodynamics”, 8th Edition , 2016.
3. Chattopadhyay, P, "Engineering Thermodynamics", Oxford University Press, 2016.
4. Michael J. Moran, Howard N. Shapiro, “Fundamentals of Engineering Thermodynamics”, 8th Edition.
5. Nag.P.K., “Engineering Thermodynamics”, 5th Edition, Tata McGraw-Hill, New Delhi, 2013.

CE8394 FLUID MECHANICS AND MACHINERY

L	T	P	C
4	0	0	4

OBJECTIVES

- The properties of fluids and concept of control volume are studied
- The applications of the conservation laws to flow through pipes are studied.
- To understand the importance of dimensional analysis
- To understand the importance of various types of flow in pumps.
- To understand the importance of various types of flow in turbines.

UNIT I FLUID PROPERTIES AND FLOW CHARACTERISTICS 12

Units and dimensions- Properties of fluids- mass density, specific weight, specific volume, specific gravity, viscosity, compressibility, vapor pressure, surface tension and capillarity. Flow characteristics – concept of control volume - application of continuity equation, energy equation and momentum equation.

UNIT II FLOW THROUGH CIRCULAR CONDUITS 12

Hydraulic and energy gradient - Laminar flow through circular conduits and circular annuli- Boundary layer concepts – types of boundary layer thickness – Darcy Weisbach equation –friction factor- Moody diagram- commercial pipes- minor losses – Flow through pipes in series and parallel.

UNIT III DIMENSIONAL ANALYSIS 12

Need for dimensional analysis – methods of dimensional analysis – Similitude –types of similitude - Dimensionless parameters- application of dimensionless parameters – Model analysis.

UNIT IV PUMPS 12

Impact of jets - Euler’s equation - Theory of roto-dynamic machines – various efficiencies– velocity components at entry and exit of the rotor- velocity triangles - Centrifugal pumps– working principle - work done by the impeller - performance curves - Reciprocating pump- working principle – Rotary pumps –classification.

UNIT V TURBINES 12

Classification of turbines – heads and efficiencies – velocity triangles. Axial, radial and mixed flow turbines. Pelton wheel, Francis turbine and Kaplan turbines- working principles - work done by water on the runner – draft tube. Specific speed - unit quantities – performance curves for turbines – governing of turbines.

TOTAL: 60 PERIODS

OUTCOMES:
Upon completion of this course, the students will be able to

- Apply mathematical knowledge to predict the properties and characteristics of a fluid.
- Can analyse and calculate major and minor losses associated with pipe flow in piping networks.
- Can mathematically predict the nature of physical quantities
- Can critically analyse the performance of pumps
- Can critically analyse the performance of turbines.

TEXT BOOK:

1. Modi P.N. and Seth, S.M. "Hydraulics and Fluid Mechanics", Standard Book House, New Delhi 2013.

REFERENCES:

1. Graebel. W.P, "Engineering Fluid Mechanics", Taylor & Francis, Indian Reprint, 2011
2. Kumar K. L., "Engineering Fluid Mechanics", Eurasia Publishing House(p) Ltd., New Delhi 2016
3. Robert W.Fox, Alan T. McDonald, Philip J.Pritchard, “Fluid Mechanics and Machinery”, 2011.
4. Streeter, V. L. and Wylie E. B., "Fluid Mechanics", McGraw Hill Publishing Co. 2010

ME8351 MANUFACTURING TECHNOLOGY – I

L	T	P	C
3	0	0	3

OBJECTIVE:

- To introduce the concepts of basic manufacturing processes and fabrication techniques, such as metal casting, metal joining, metal forming and manufacture of plastic components.

UNIT I METAL CASTING PROCESSES 9

Sand Casting : Sand Mould – Type of patterns - Pattern Materials – Pattern allowances –Moulding sand Properties and testing – Cores –Types and applications – Moulding machines– Types and applications; Melting furnaces : Blast and Cupola Furnaces; Principle of special casting processes : Shell - investment – Ceramic mould – Pressure die casting - Centrifugal Casting - CO_2 process – Stir casting; Defects in Sand casting

UNIT II JOINING PROCESSES 9

Operating principle, basic equipment, merits and applications of: Fusion welding processes: Gas welding - Types – Flame characteristics; Manual metal arc welding – Gas Tungsten arc welding - Gas metal arc welding – Submerged arc welding – Electro slag welding; Operating principle and applications of: Resistance welding - Plasma arc welding – Thermit welding – Electron beam welding – Friction welding and Friction Stir Welding; Brazing and soldering; Weld defects: types, causes and cure.

UNIT III METAL FORMING PROCESSES 9

Hot working and cold working of metals – Forging processes – Open, impression and closed die forging – forging operations. Rolling of metals– Types of Rolling – Flat strip rolling – shape rolling operations – Defects in rolled parts. Principle of rod and wire drawing – Tube drawing – Principles of Extrusion – Types – Hot and Cold extrusion.

UNIT IV SHEET METAL PROCESSES 9

Sheet metal characteristics – shearing, bending and drawing operations – Stretch forming operations – Formability of sheet metal – Test methods –special forming processes-Working principle and applications – Hydro forming – Rubber pad forming – Metal spinning– Introduction of Explosive forming, magnetic pulse forming, peen forming, Super plastic forming – Micro forming

UNIT V MANUFACTURE OF PLASTIC COMPONENTS 9

Types and characteristics of plastics – Moulding of thermoplastics – working principles and typical applications – injection moulding – Plunger and screw machines – Compression moulding, Transfer Moulding – Typical industrial applications – introduction to blow moulding –Rotational moulding – Film blowing – Extrusion – Thermoforming – Bonding of Thermoplastics.

TOTAL: 45 PERIODS

OUTCOMES:

CO1 Explain different metal casting processes, associated defects, merits and demerits
CO2 Compare different metal joining processes.
CO3 Summarize various hot working and cold working methods of metals.
CO4 Explain various sheet metal making processes.
CO5 Distinguish various methods of manufacturing plastic components.

TEXT BOOKS:

1. Hajra Chouldhary S.K and Hajra Choudhury. AK., "Elements of workshop Technology", volume I and II, Media promoters and Publishers Private Limited, Mumbai, 2008
2. Kalpakjian. S, “Manufacturing Engineering and Technology”, Pearson Education India Edition, 2013

REFERENCES:

1. Gowri P. Hariharan, A.Suresh Babu, "Manufacturing Technology I", Pearson Education, 2008
2. Paul Degarma E, Black J.T and Ronald A. Kosher, "Materials and Processes, in Manufacturing" Eight Edition, Prentice – Hall of India, 1997.
3. Rao, P.N. "Manufacturing Technology Foundry, Forming and Welding", 4th Edition, TMH-2013
4. Roy. A. Lindberg, "Processes and Materials of Manufacture", PHI / Pearson education, 2006
5. Sharma, P.C., "A Text book of production Technology", S.Chand and Co. Ltd., 2014.

EE8353 ELECTRICAL DRIVES AND CONTROLS

L	T	P	C
3	0	0	3

OBJECTIVES:

- To understand the basic concepts of different types of electrical machines and their performance.
- To study the different methods of starting D.C motors and induction motors.
- To study the conventional and solid-state drives

UNIT I INTRODUCTION 8

Basic Elements – Types of Electric Drives – factors influencing the choice of electrical drives – heating and cooling curves – Loading conditions and classes of duty – Selection of power rating for drive motors with regard to thermal overloading and Load variation factors

UNIT IV GEARS AND GEAR TRAINS 9

Law of toothed gearing – Involutes and cycloidal tooth profiles –Spur Gear terminology and definitions –Gear tooth action – contact ratio – Interference and undercutting. Helical, Bevel, Worm, Rack and Pinion gears [Basics only]. Gear trains – Speed ratio, train value – Parallel axis gear trains – Epicyclic Gear Trains.

UNIT V FRICTION IN MACHINE ELEMENTS 9

Surface contacts – Sliding and Rolling friction – Friction drives – Friction in screw threads – Bearings and lubrication – Friction clutches – Belt and rope drives – Friction in brakes- Band and Block brakes.

TOTAL: 45 PERIODS

OUTCOMES:

Upon the completion of this course the students will be able to

CO1 Discuss the basics of mechanism
CO2 Calculate velocity and acceleration in simple mechanisms
CO3 Develop CAM profiles
CO4 Solve problems on gears and gear trains
CO5 Examine friction in machine elements

TEXT BOOKS:

1. F.B. Sayyad, “Kinematics of Machinery”, MacMillan Publishers Pvt Ltd., Tech-max Educational resources, 2011.
2. Rattan, S.S, “Theory of Machines”, 4th Edition, Tata McGraw-Hill, 2014.
3. Uicker, J.J., Pennock G.R and Shigley, J.E., “Theory of Machines and Mechanisms”, 4th Edition, Oxford University Press, 2014.

REFERENCES:

1. Allen S. Hall Jr., “Kinematics and Linkage Design”, Prentice Hall, 1961
2. Cleghorn. W. L, “Mechanisms of Machines”, Oxford University Press, 2014
3. Ghosh. A and Mallick, A.K., “Theory of Mechanisms and Machines", 3rd Edition Affiliated East-West Pvt. Ltd., New Delhi, 2006.
4. John Hannah and Stephens R.C., "Mechanics of Machines", Viva Low-Prices Student Edition, 1999.
5. Thomas Bevan, "Theory of Machines", 3rd Edition, CBS Publishers and Distributors, 2005.

ME8451	MANUFACTURING TECHNOLOGY – II	L	T	P	C
		3	0	0	3

OBJECTIVES:

- To understand the concept and basic mechanics of metal cutting, working of standard machine tools such as lathe, shaping and allied machines, milling, drilling and allied machines, grinding and allied machines and broaching.
- To understand the basic concepts of Computer Numerical Control (CNC) of machine tools and CNC Programming

UNIT I THEORY OF METAL CUTTING 9

Mechanics of chip formation, single point cutting tool, forces in machining, Types of chip, cutting tools– nomenclature, orthogonal metal cutting, thermal aspects, cutting tool materials, tool wear, tool life, surface finish, cutting fluids and Machinability.

UNIT II TURNING MACHINES 9

Centre lathe, constructional features, specification, operations – taper turning methods, thread cutting methods, special attachments, machining time and power estimation. Capstan and turret lathes- tool layout – automatic lathes: semi automatic – single spindle : Swiss type, automatic screw type – multi spindle:

UNIT III SHAPER, MILLING AND GEAR CUTTING MACHINES 9

Shaper - Types of operations. Drilling ,reaming, boring, Tapping. Milling operations-types of milling cutter. Gear cutting – forming and generation principle and construction of gear milling ,hobbing and gear shaping processes –finishing of gears.

UNIT IV ABRASIVE PROCESS AND BROACHING 9

Abrasive processes: grinding wheel – specifications and selection, types of grinding process– cylindrical grinding, surface grinding, centreless grinding and internal grinding- Typical applications – concepts of surface integrity, broaching machines: broach construction – push, pull, surface and continuous broaching machines

UNIT V CNC MACHINING 9

Numerical Control (NC) machine tools – CNC types, constructional details, special features, machining centre, part programming fundamentals CNC – manual part programming – micromachining – wafer machining.

TOTAL : 45 PERIODS

OUTCOMES:

Upon the completion of this course the students will be able to

CO1 Explain the mechanism of material removal processes.

CO2 Describe the constructional and operational features of centre lathe and other special purpose lathes.

CO3 Describe the constructional and operational features of shaper, planner, milling, drilling, sawing and broaching machines.

CO4 Explain the types of grinding and other super finishing processes apart from gear manufacturing processes.

CO5 Summarize numerical control of machine tools and write a part program.

TEXT BOOKS:

1. Hajra Choudhury, "Elements of Workshop Technology", Vol.II., Media Promoters 2014
2. Rao. P.N “Manufacturing Technology - Metal Cutting and Machine Tools", 3rd Edition, Tata McGraw-Hill, New Delhi, 2013.

REFERENCES:

1. Richerd R Kibbe, John E. Neely, Roland O. Merges and Warren J.White “Machine Tool Practices”, Prentice Hall of India, 1998
2. Geofrey Boothroyd, "Fundamentals of Metal Machining and Machine Tools", Mc Graw Hill, 1984
3. HMT, "Production Technology", Tata McGraw Hill, 1998.
4. Roy. A.Lindberg, “Process and Materials of Manufacture,” Fourth Edition, PHI/Pearson Education 2006.

ME8491 ENGINEERING METALLURGY

L	T	P	C
3	0	0	3

OBJECTIVE:

- To impart knowledge on the structure, properties, treatment, testing and applications of metals and non-metallic materials so as to identify and select suitable materials for various engineering applications.

UNIT I ALLOYS AND PHASE DIAGRAMS 9

Constitution of alloys – Solid solutions, substitutional and interstitial – phase diagrams, Isomorphous, eutectic, eutectoid, peritectic, and peritectoid reactions, Iron – carbon equilibrium diagram. Classification of steel and cast Iron microstructure, properties and application.

UNIT II HEAT TREATMENT 9

Definition – Full annealing, stress relief, recrystallisation and spheroidising – normalising, hardening and Tempering of steel. Isothermal transformation diagrams – cooling curves superimposed on I.T. diagram CCR – Hardenability, Jominy end quench test - Austempering, martempering – case hardening, carburizing, Nitriding, cyaniding, carbonitriding – Flame and Induction hardening – Vacuum and Plasma hardening. .

UNIT III FERROUS AND NON-FERROUS METALS 9

Effect of alloying additions on steel- α and β stabilisers– stainless and tool steels – HSLA, Maraging steels – Cast Iron - Grey, white, malleable, spheroidal – alloy cast irons, Copper and copper alloys – Brass, Bronze and Cupronickel – Aluminium and Al-Cu – precipitation strengthening treatment – Bearing alloys, Mg-alloys, Ni-based super alloys and Titanium alloys.

UNIT IV NON-METALLIC MATERIALS 9

Polymers – types of polymer, commodity and engineering polymers – Properties and applications of various thermosetting and thermoplastic polymers (PP, PS, PVC, PMMA, PET,PC, PA, ABS, PI, PAI, PPO, PPS, PEEK, PTFE, Polymers – Urea and Phenol formaldehydes)- Engineering Ceramics – Properties and applications of Al_2O_3, SiC, Si_3N_4, PSZ and SIALON –Composites- Classifications- Metal Matrix and FRP - Applications of Composites.

UNIT V MECHANICAL PROPERTIES AND DEFORMATION MECHANISMS 9

Mechanisms of plastic deformation, slip and twinning – Types of fracture – Testing of materials under tension, compression and shear loads – Hardness tests (Brinell, Vickers and Rockwell), hardness tests, Impact test Izod and charpy, fatigue and creep failure mechanisms.

TOTAL: 45 PERIODS

OUTCOMES

Upon the completion of this course the students will be able to

CO1 Explain alloys and phase diagram, Iron-Iron carbon diagram and steel classification.
CO2 Explain isothermal transformation, continuous cooling diagrams and different heat treatment processes.
CO3 Clarify the effect of alloying elements on ferrous and non-ferrous metals
CO4 Summarize the properties and applications of non metallic materials.
CO5 Explain the testing of mechanical properties. .

TEXT BOOKS:

1. Avner, S.H., “Introduction to Physical Metallurgy”, McGraw Hill Book Company,1997.
2. Williams D Callister, “Material Science and Engineering” Wiley India Pvt Ltd, Revised Indian Edition 2014

REFERENCES:

1. Kenneth G.Budinski and Michael K. Budinski, “Engineering Materials”, Prentice Hall of India Private Limited, 2010.
2. Raghavan.V, “Materials Science and Engineering”, Prentice Hall of India Pvt. Ltd., 2015.
3. U.C.Jindal : Material Science and Metallurgy, "Engineering Materials and Metallurgy", First Edition, Dorling Kindersley, 2012
4. Upadhyay. G.S. and Anish Upadhyay, “Materials Science and Engineering”, Viva Books Pvt. Ltd., New Delhi, 2006.

		L	T	P	C
CE8395	**STRENGTH OF MATERIALS FOR MECHANICAL ENGINEERS**	**3**	**0**	**0**	**3**

OBJECTIVES:

- To understand the concepts of stress, strain, principal stresses and principal planes.
- To study the concept of shearing force and bending moment due to external loads in determinate beams and their effect on stresses.
- To determine stresses and deformation in circular shafts and helical spring due to torsion.
- To compute slopes and deflections in determinate beams by various methods.
- To study the stresses and deformations induced in thin and thick shells.

UNIT I STRESS, STRAIN AND DEFORMATION OF SOLIDS 9

Rigid bodies and deformable solids – Tension, Compression and Shear Stresses – Deformation of simple and compound bars – Thermal stresses – Elastic constants – Volumetric strains –Stresses on inclined planes – principal stresses and principal planes – Mohr’s circle of stress.

UNIT II TRANSVERSE LOADING ON BEAMS AND STRESSES IN BEAM 9

Beams – types transverse loading on beams – Shear force and bending moment in beams – Cantilevers – Simply supported beams and over – hanging beams. Theory of simple bending– bending stress distribution – Load carrying capacity – Proportioning of sections – Flitched beams – Shear stress distribution.

UNIT III TORSION 9

Torsion formulation stresses and deformation in circular and hollows shafts – Stepped shafts– Deflection in shafts fixed at the both ends – Stresses in helical springs – Deflection of helical springs, carriage springs.

UNIT IV DEFLECTION OF BEAMS 9

Double Integration method – Macaulay’s method – Area moment method for computation of slopes and deflections in beams - Conjugate beam and strain energy – Maxwell’s reciprocal theorems.

UNIT V THIN CYLINDERS, SPHERES AND THICK CYLINDERS 9

Stresses in thin cylindrical shell due to internal pressure circumferential and longitudinal stresses and deformation in thin and thick cylinders – spherical shells subjected to internal pressure – Deformation in spherical shells – Lame’s theorem.

TOTAL: 45 PERIODS

REFERENCES

1. Davis, Jason and Rhonda LIss.Effective Academic Writing (Level 3) Oxford University Press: Oxford, 2006
2. E. Suresh Kumar and et al. Enriching Speaking and Writing Skills. Second Edition. Orient Black swan: Hyderabad, 2012
3. Withrow, Jeans and et al. Inspired to Write. Readings and Tasks to develop writing skills. Cambridge University Press: Cambridge, 2004
4. Goatly, Andrew. Critical Reading and Writing. Routledge: United States of America, 2000
5. Petelin, Roslyn and Marsh Durham. The Professional Writing Guide: Knowing Well and Knowing Why. Business & Professional Publishing: Australia, 2004

ME8595	THERMAL ENGINEERING – II	L	T	P	C
		3	0	0	3

OBJECTIVES:

- To apply the thermodynamic concepts for Nozzles, Boilers, Turbines, and Refrigeration & Air Conditioning Systems.
- To understand the concept of utilising residual heat in thermal systems.

UNIT I STEAM NOZZLE 9

Types and Shapes of nozzles, Flow of steam through nozzles, Critical pressure ratio, Variation of mass flow rate with pressure ratio. Effect of friction. Metastable flow.

UNIT II BOILERS 9

Types and comparison. Mountings and Accessories. Fuels - Solid, Liquid and Gas. Performance calculations, Boiler trial.

UNIT III STEAM TURBINES 9

Types, Impulse and reaction principles, Velocity diagrams, Work done and efficiency – optimal operating conditions. Multi-staging, compounding and governing.

UNIT IV COGENERATION AND RESIDUAL HEAT RECOVERY 9

Cogeneration Principles, Cycle Analysis, Applications, Source and utilisation of residual heat. Heat pipes, Heat pumps, Recuperative and Regenerative heat exchangers. Economic Aspects.

UNIT V REFRIGERATION AND AIR – CONDITIONING 9

Vapour compression refrigeration cycle, Effect of Superheat and Sub-cooling, Performance calculations, Working principle of air cycle, vapour absorption system, and Thermoelectric refrigeration. Air conditioning systems, concept of RSHF, GSHF and ESHF, Cooling load calculations. Cooling towers – concept and types.

TOTAL:45 PERIODS

OUTCOMES:

Upon the completion of this course the students will be able to

CO1 Solve problems in Steam Nozzle

CO2 Explain the functioning and features of different types of Boilers and auxiliaries and calculate performance parameters.

CO3 Explain the flow in steam turbines, draw velocity diagrams for steam turbines and solve problems.

CO4 Summarize the concept of Cogeneration, Working features of Heat pumps and Heat exchangers

CO5 Solve problems using refrigerant table / charts and psychrometric charts

TEXT BOOKS:

1. Kothandaraman, C.P., Domkundwar .S and Domkundwar A.V.,"A course in Thermal Engineering", Dhanpat Rai & Sons, 2016.
2. Mahesh. M. Rathore, "Thermal Engineering", 1st Edition, Tata Mc Graw Hill Publications, 2010.

REFERENCES:

1. Arora .C.P., "Refrigeration and Air Conditioning", Tata Mc Graw Hill, 2008
2. Ballaney. P.L ." Thermal Engineering", Khanna publishers, 24th Edition 2012
3. Charles H Butler : Cogeneration" McGraw Hill, 1984.
4. Donald Q. Kern, " Process Heat Transfer", Tata Mc Graw Hill, 2001.
5. Sydney Reiter "Industrial and Commercial Heat Recovery Systems" Van Nostrand Reinhols, 1985.

ME8593	DESIGN OF MACHINE ELEMENTS	L	T	P	C
		3	0	0	3

OBJECTIVES

- To familiarize the various steps involved in the Design Process
- To understand the principles involved in evaluating the shape and dimensions of a component to satisfy functional and strength requirements.
- To learn to use standard practices and standard data
- To learn to use catalogues and standard machine components
- (Use of P S G Design Data Book is permitted)

UNIT I STEADY STRESSES AND VARIABLE STRESSES IN MACHINE MEMBERS 9

Introduction to the design process - factors influencing machine design, selection of materials based on mechanical properties - Preferred numbers, fits and tolerances – Direct, Bending and torsional stress equations – Impact and shock loading – calculation of principle stresses for various load combinations, eccentric loading – curved beams – crane hook and 'C' frame- Factor of safety - theories of failure – Design based on strength and stiffness – stress concentration – Design for variable loading.

UNIT II SHAFTS AND COUPLINGS 9

Design of solid and hollow shafts based on strength, rigidity and critical speed – Keys, keyways and splines - Rigid and flexible couplings.

UNIT III TEMPORARY AND PERMANENT JOINTS 9

Threaded fastners - Bolted joints including eccentric loading, Knuckle joints, Cotter joints – Welded joints, riveted joints for structures - theory of bonded joints.

UNIT IV ENERGY STORING ELEMENTS AND ENGINE COMPONENTS 9

Various types of springs, optimization of helical springs - rubber springs - Flywheels considering stresses in rims and arms for engines and punching machines- Connecting Rods and crank shafts.

UNIT V BEARINGS 9

Sliding contact and rolling contact bearings - Hydrodynamic journal bearings, Sommerfeld Number, Raimondi and Boyd graphs, -- Selection of Rolling Contact bearings.

TOTAL: 45 PERIODS

OUTCOMES:

Upon the completion of this course the students will be able to

CO1 Explain the influence of steady and variable stresses in machine component design.
CO2 Apply the concepts of design to shafts, keys and couplings.
CO3 Apply the concepts of design to temporary and permanent joints.
CO4 Apply the concepts of design to energy absorbing members, connecting rod and crank shaft.
CO5 Apply the concepts of design to bearings.

TEXT BOOKS:

1. Bhandari V, "Design of Machine Elements", 4th Edition, Tata McGraw-Hill Book Co, 2016.
2. Joseph Shigley, Charles Mischke, Richard Budynas and Keith Nisbett "Mechanical Engineering Design", 9th Edition, Tata McGraw-Hill, 2011.

REFERENCES:

1. Alfred Hall, Halowenko, A and Laughlin, H., "Machine Design", Tata McGraw-Hill BookCo.(Schaum's Outline), 2010
2. Ansel Ugural, "Mechanical Design – An Integral Approach", 1st Edition, Tata McGraw-Hill Book Co, 2003.
3. P.C. Gope, "Machine Design – Fundamental and Application", PHI learning private ltd, New Delhi, 2012.
4. R.B. Patel, "Design of Machine Elements", MacMillan Publishers India P Ltd., Tech-Max Educational resources, 2011.
5. Robert C. Juvinall and Kurt M. Marshek, "Fundamentals of Machine Design", 4th Edition, Wiley, 2005
6. Sundararajamoorthy T. V. Shanmugam .N, "Machine Design", Anuradha Publications, Chennai, 2015.

ME8501	METROLOGY AND MEASUREMENTS	L	T	P	C
		3	0	0	3

OBJECTIVES:

- To provide knowledge on various Metrological equipments available to measure the dimension of the components.
- To provide knowledge on the correct procedure to be adopted to measure the dimension of the components.

UNIT I BASICS OF METROLOGY 9

Introduction to Metrology – Need – Elements – Work piece, Instruments – Persons – Environment – their effect on Precision and Accuracy – Errors – Errors in Measurements – Types – Control – Types of standards.

UNIT II LINEAR AND ANGULAR MEASUREMENTS 9

Linear Measuring Instruments – Evolution – Types – Classification – Limit gauges – gauge design – terminology – procedure – concepts of interchange ability and selective assembly – Angular measuring instruments – Types – Bevel protractor clinometers angle gauges, spirit levels sine bar – Angle alignment telescope – Autocollimator – Applications.

UNIT III ADVANCES IN METROLOGY 9

Basic concept of lasers Advantages of lasers – laser Interferometers – types – DC and AC Lasers interferometer – Applications – Straightness – Alignment. Basic concept of CMM – Types of CMM – Constructional features – Probes – Accessories – Software – Applications – Basic concepts of Machine Vision System – Element – Applications.

UNIT IV FORM MEASUREMENT 9

Principles and Methods of straightness – Flatness measurement – Thread measurement, gear measurement, surface finish measurement, Roundness measurement – Applications.

UNIT V MEASUREMENT OF POWER, FLOW AND TEMPERATURE 9

Force, torque, power - mechanical , Pneumatic, Hydraulic and Electrical type. Flow measurement: Venturimeter, Orifice meter, rotameter, pitot tube – Temperature: bimetallic strip, thermocouples, electrical resistance thermometer – Reliability and Calibration – Readability and Reliability.

TOTAL : 45 PERIODS

OUTCOMES:

Upon the completion of this course the students will be able to

CO1 Describe the concepts of measurements to apply in various metrological instruments
CO2 Outline the principles of linear and angular measurement tools used for industrial applications
CO3 Explain the procedure for conducting computer aided inspection
CO4 Demonstrate the techniques of form measurement used for industrial components
CO5 Discuss various measuring techniques of mechanical properties in industrial applications

TEXT BOOKS:

1. Gupta. I.C., “Engineering Metrology”, Dhanpatrai Publications, 2005.
2. Jain R.K. “Engineering Metrology”, Khanna Publishers, 2009.

REFERENCES:

1. Alan S. Morris, “The essence of Measurement”, Prentice Hall of India 1996.
2. Beckwith, Marangoni, Lienhard, “Mechanical Measurements”, Pearson Education , 2014.
3. Charles Reginald Shotbolt, “Metrology for Engineers”, 5th edition, Cengage Learning EMEA,1990.
4. Donald Peckman, “Industrial Instrumentation”, Wiley Eastern, 2004.
5. Raghavendra ,Krishnamurthy “Engineering Metrology & Measurements”, Oxford Univ. Press, 2013.

ME8594	DYNAMICS OF MACHINES	L	T	P	C
		4	0	0	4

OBJECTIVES:

- To understand the force-motion relationship in components subjected to external forces and analysis of standard mechanisms.
- To understand the undesirable effects of unbalances resulting from prescribed motions in mechanism.
- To understand the effect of Dynamics of undesirable vibrations.
- To understand the principles in mechanisms used for speed control and stability control.

REFERENCES:
1. Bhatti Asghar M, "Fundamental Finite Element Analysis and Applications", John Wiley & Sons, 2005 (Indian Reprint 2013)*
2. Chandrupatla & Belagundu, “Introduction to Finite Elements in Engineering”, 3rd Edition, Prentice Hall College Div, 1990
3. Logan, D.L., “A first course in Finite Element Method”, Thomson Asia Pvt. Ltd., 2002
4. Rao, S.S., “The Finite Element Method in Engineering”, 3rd Edition, Butterworth Heinemann, 2004
5. Robert D. Cook, David S. Malkus, Michael E. Plesha, Robert J. Witt, “Concepts and Applications of Finite Element Analysis”, 4th Edition, Wiley Student Edition, 2002.

ME8694	HYDRAULICS AND PNEUMATICS	L	T	P	C
		3	0	0	3

OBJECTIVES:
- To provide student with knowledge on the application of fluid power in process, construction and manufacturing Industries.
- To provide students with an understanding of the fluids and components utilized in modern industrial fluid power system.
- To develop a measurable degree of competence in the design, construction and operation of fluid power circuits.

UNIT I FLUID POWER PRINICIPLES AND HYDRAULIC PUMPS 9

Introduction to Fluid power – Advantages and Applications – Fluid power systems – Types of fluids - Properties of fluids and selection – Basics of Hydraulics – Pascal’s Law – Principles of flow - Friction loss – Work, Power and Torque Problems, Sources of Hydraulic power : Pumping Theory – Pump Classification – Construction, Working, Design, Advantages, Disadvantages, Performance, Selection criteria of Linear and Rotary – Fixed and Variable displacement pumps – Problems.

UNIT II HYDRAULIC ACTUATORS AND CONTROL COMPONENTS 9

Hydraulic Actuators: Cylinders – Types and construction, Application, Hydraulic cushioning – Hydraulic motors - Control Components : Direction Control, Flow control and pressure control valves – Types, Construction and Operation – Servo and Proportional valves – Applications – Accessories : Reservoirs, Pressure Switches – Applications – Fluid Power ANSI Symbols – Problems.

UNIT III HYDRAULIC CIRCUITS AND SYSTEMS 9

Accumulators, Intensifiers, Industrial hydraulic circuits – Regenerative, Pump Unloading, Double-Pump, Pressure Intensifier, Air-over oil, Sequence, Reciprocation, Synchronization, Fail-Safe, Speed Control, Hydrostatic transmission, Electro hydraulic circuits, Mechanical hydraulic servo systems.

UNIT IV PNEUMATIC AND ELECTRO PNEUMATIC SYSTEMS 9

Properties of air – Perfect Gas Laws – Compressor – Filters, Regulator, Lubricator, Muffler, Air control Valves, Quick Exhaust Valves, Pneumatic actuators, Design of Pneumatic circuit – Cascade method – Electro Pneumatic System – Elements – Ladder diagram – Problems, Introduction to fluidics and pneumatic logic circuits.

UNIT V TROUBLE SHOOTING AND APPLICATIONS 9

Installation, Selection, Maintenance, Trouble Shooting and Remedies in Hydraulic and Pneumatic systems, Design of hydraulic circuits for Drilling, Planning, Shaping, Surface grinding, Press and Forklift applications. Design of Pneumatic circuits for Pick and Place applications and tool handling in CNC Machine tools – Low cost Automation – Hydraulic and Pneumatic power packs.

TOTAL:45 PERIODS

OUTCOMES:

Upon the completion of this course the students will be able to

CO1 Explain the Fluid power and operation of different types of pumps.

CO2 Summarize the features and functions of Hydraulic motors, actuators and Flow control valves

CO3 Explain the different types of Hydraulic circuits and systems

CO4 Explain the working of different pneumatic circuits and systems

CO5 Summarize the various trouble shooting methods and applications of hydraulic and pneumatic systems.

TEXT BOOKS:

1. Anthony Esposito, “Fluid Power with Applications”, Pearson Education 2005.
2. Majumdar S.R., “Oil Hydraulics Systems- Principles and Maintenance”, Tata McGraw-Hill, 2001.

REFERENCES:

1. Anthony Lal, “Oil hydraulics in the service of industry”, Allied publishers, 1982.
2. Dudelyt, A. Pease and John T. Pippenger, “Basic Fluid Power”, Prentice Hall, 1987.
3. Majumdar S.R., “Pneumatic systems – Principles and maintenance”, Tata McGraw Hill, 1995
4. Michael J, Prinches and Ashby J. G, “Power Hydraulics”, Prentice Hall, 1989.
5. Shanmugasundaram.K, “Hydraulic and Pneumatic controls”, Chand & Co, 2006.

ME8681	CAD / CAM LABORATORY	L	T	P	C
		0	0	4	2

OBJECTIVES:

- To gain practical experience in handling 2D drafting and 3D modelling software systems.
- To study the features of CNC Machine Tool.
- To expose students to modern control systems (Fanuc, Siemens etc.,)
- To know the application of various CNC machines like CNC lathe, CNC Vertical Machining centre, CNC EDM and CNC wire-cut and studying of Rapid prototyping.

LIST OF EXPERIMENTS

1. 3D GEOMETRIC MODELLING 30 PERIODS

List of Experiments

1. Introduction of 3D Modelling software

Creation of 3D assembly model of following machine elements using 3D Modelling software

2. Flange Coupling
3. Plummer Block
4. Screw Jack
5. Lathe Tailstock
6. Universal Joint
7. Machine Vice
8. Stuffing box
9. Crosshead

UNIT V

Recognizing differences between groups and teams- managing time-managing stress- networking professionally- respecting social protocols-understanding career management-developing a long-term career plan-making career changes

TOTAL : 30 PERIODS

OUTCOMES: At the end of the course Learners will be able to:

- Make effective presentations
- Participate confidently in Group Discussions.
- Attend job interviews and be successful in them.
- Develop adequate Soft Skills required for the workplace

Recommended Software

1. Globearena
2.Win English

REFERENCES:

1. Butterfield, Jeff Soft Skills for Everyone. Cengage Learning: New Delhi, 2015
2. E. Suresh Kumar et al. Communication for Professional Success. Orient Blackswan: Hyderabad, 2015
3. Interact English Lab Manual for Undergraduate Students,. OrientBalckSwan: Hyderabad, 2016.
4. Raman, Meenakshi and Sangeeta Sharma. Professional Communication. Oxford University Press: Oxford, 2014
5. S. Hariharanetal. Soft Skills. MJP Publishers: Chennai, 2010.

ME8792	POWER PLANT ENGINEERING	L	T	P	C
		3	0	0	3

OBJECTIVE:

- Providing an overview of Power Plants and detailing the role of Mechanical Engineers in their operation and maintenance.

UNIT I COAL BASED THERMAL POWER PLANTS 9

Rankine cycle - improvisations, Layout of modern coal power plant, Super Critical Boilers, FBC Boilers, Turbines, Condensers, Steam & Heat rate, Subsystems of thermal power plants – Fuel and ash handling, Draught system, Feed water treatment. Binary Cycles and Cogeneration systems.

UNIT II DIESEL, GAS TURBINE AND COMBINED CYCLE POWER PLANTS 9

Otto, Diesel, Dual & Brayton Cycle - Analysis & Optimisation. Components of Diesel and Gas Turbine power plants. Combined Cycle Power Plants. Integrated Gasifier based Combined Cycle systems.

UNIT III NUCLEAR POWER PLANTS 9

Basics of Nuclear Engineering, Layout and subsystems of Nuclear Power Plants, Working of Nuclear Reactors : B*oilng Water Reactor* (BWR), P*ressurized Water Reactor* (PWR), CANada Deuterium- Uranium reactor (CANDU), Breeder, Gas Cooled and Liquid Metal Cooled Reactors. Safety measures for Nuclear Power plants.

UNIT IV POWER FROM RENEWABLE ENERGY 9

Hydro Electric Power Plants – Classification, Typical Layout and associated components including Turbines. Principle, Construction and working of Wind, Tidal, *Solar* Photo Voltaic (SPV), Solar Thermal, Geo Thermal, Biogas and Fuel Cell power systems.

UNIT V ENERGY, ECONOMIC AND ENVIRONMENTAL ISSUES OF POWER PLANTS 9

Power tariff types, Load distribution parameters, load curve, Comparison of site selection criteria, relative merits & demerits, Capital & Operating Cost of different power plants. Pollution control technologies including Waste Disposal Options for Coal and Nuclear Power Plants.

TOTAL : 45 PERIODS

OUTCOMES:

Upon the completion of this course the students will be able to

CO1 Explain the layout, construction and working of the components inside a thermal power plant.

CO2 Explain the layout, construction and working of the components inside a Diesel, Gas and Combined cycle power plants.

CO3 Explain the layout, construction and working of the components inside nuclear power plants.

CO4 Explain the layout, construction and working of the components inside Renewable energy power plants.

CO5 Explain the applications of power plants while extend their knowledge to power plant economics and environmental hazards and estimate the costs of electrical energy production.

TEXT BOOK:

1. Nag. P.K., "Power Plant Engineering", Third Edition, Tata McGraw – Hill Publishing Company Ltd., 2008.

REFERENCES:

1. El-Wakil. M.M., "Power Plant Technology", Tata McGraw – Hill Publishing Company Ltd., 2010.
2. Godfrey Boyle, "Renewable energy", Open University, Oxford University Press in association with the Open University, 2004.
3. Thomas C. Elliott, Kao Chen and Robert C. Swanekamp, "Power Plant Engineering", Second Edition, Standard Handbook of McGraw – Hill, 1998.

ME8793	PROCESS PLANNING AND COST ESTIMATION	L	T	P	C
		3	0	0	3

OBJECTIVE:

- To introduce the process planning concepts to make cost estimation for various products after process planning

UNIT I INTRODUCTION TO PROCESS PLANNING 9

Introduction- methods of process planning-Drawing interpretation-Material evaluation – steps in process selection-.Production equipment and tooling selection

UNIT II PROCESS PLANNING ACTIVITIES 9

Process parameters calculation for various production processes-Selection jigs and fixtures election of quality assurance methods - Set of documents for process planning-Economics of process planning- case studies

ANNA UNIVERSITY, CHENNAI

AFFILIATED INSTITUTIONS

R - 2013

B.E. MECHANICAL ENGINEERING

I – VIII SEMESTERS CURRICULUM AND SYLLABUS

SEMESTER I

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	HS6151	Technical English – I	3	1	0	4
2.	MA6151	Mathematics – I	3	1	0	4
3.	PH6151	Engineering Physics – I	3	0	0	3
4.	CY6151	Engineering Chemistry – I	3	0	0	3
5.	GE6151	Computer Programming	3	0	0	3
6.	GE6152	Engineering Graphics	2	0	3	4
PRACTICALS						
7.	GE6161	Computer Practices Laboratory	0	0	3	2
8.	GE6162	Engineering Practices Laboratory	0	0	3	2
9.	GE6163	Physics and Chemistry Laboratory - I	0	0	2	1
		TOTAL	**17**	**2**	**11**	**26**

SEMESTER II

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	HS6251	Technical English – II	3	1	0	4
2.	MA6251	Mathematics – II	3	1	0	4
3.	PH6251	Engineering Physics – II	3	0	0	3
4.	CY6251	Engineering Chemistry – II	3	0	0	3
5.	GE6252	Basic Electrical and Electronics Engineering	4	0	0	4
6.	GE6253	Engineering Mechanics	3	1	0	4
PRACTICALS						
7.	GE6261	Computer Aided Drafting and Modeling Laboratory	0	1	2	2
8.	GE6262	Physics and Chemistry Laboratory - II	0	0	2	1
		TOTAL	**19**	**4**	**4**	**25**

SEMESTER III

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6351	Transforms and Partial Differential Equations	3	1	0	4
2.	CE6306	Strength of Materials	3	1	0	4
3.	ME6301	Engineering Thermodynamics	3	0	0	3
4.	CE6451	Fluid Mechanics and Machinery	3	0	0	3
5.	ME6302	Manufacturing Technology - I	3	0	0	3
6.	EE6351	Electrical Drives and Controls	3	0	0	3
PRACTICAL						
7.	ME6311	Manufacturing Technology Laboratory - I	0	0	3	2
8.	CE6461	Fluid Mechanics and Machinery Laboratory	0	0	3	2
9.	EE6365	Electrical Engineering Laboratory	0	0	3	2
		TOTAL	**18**	**2**	**9**	**26**

SEMESTER IV

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6452	Statistics and Numerical Methods	3	1	0	4
2.	ME6401	Kinematics of Machinery	3	0	0	3
3.	ME6402	Manufacturing Technology– II	3	0	0	3
4.	ME6403	Engineering Materials and Metallurgy	3	0	0	3
5.	GE6351	Environmental Science and Engineering	3	0	0	3
6.	ME6404	Thermal Engineering	3	0	0	3
PRACTICAL						
7.	ME6411	Manufacturing Technology Laboratory–II	0	0	3	2
8.	ME6412	Thermal Engineering Laboratory - I	0	0	3	2
9.	CE6315	Strength of Materials Laboratory	0	0	3	2
		TOTAL	**18**	**1**	**9**	**25**

SEMESTER V

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	ME6501	Computer Aided Design	3	0	0	3
2.	ME6502	Heat and Mass Transfer	3	0	0	3
3.	ME6503	Design of Machine Elements	3	0	0	3
4.	ME6504	Metrology and Measurements	3	0	0	3
5.	ME6505	Dynamics of Machines	3	0	0	3
6.	GE6075	Professional Ethics in Engineering	3	0	0	3
PRACTICAL						
7.	ME6511	Dynamics Laboratory	0	0	3	2
8.	ME6512	Thermal Engineering Laboratory-II	0	0	3	2
9.	ME6513	Metrology and Measurements Laboratory	0	0	3	2
		TOTAL	**18**	**0**	**9**	**24**

SEMESTER VI

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	ME6601	Design of Transmission Systems	3	0	0	3
2.	MG6851	Principles of Management	3	0	0	3
3.	ME6602	Automobile Engineering	3	0	0	3
4.	ME6603	Finite Element Analysis	3	0	0	3
5.	ME6604	Gas Dynamics and Jet Propulsion	3	0	0	3
6.		Elective - I	3	0	0	3
PRACTICAL						
7.	ME6611	C.A.D. / C.A.M. Laboratory	0	0	3	2
8.	ME6612	Design and Fabrication Project	0	0	4	2
9.	GE6674	Communication and Soft Skills-Laboratory Based	0	0	4	2
		TOTAL	**18**	**0**	**11**	**24**

SEMESTER VII

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	ME6701	Power Plant Engineering	3	0	0	3
2.	ME6702	Mechatronics	3	0	0	3
3.	ME6703	Computer Integrated Manufacturing Systems	3	0	0	3
4.	GE6757	Total Quality Management	3	0	0	3
5.		Elective – II	3	0	0	3
6.		Elective – III	3	0	0	3
PRACTICAL						
7.	ME6711	Simulation and Analysis Laboratory	0	0	3	2
8.	ME6712	Mechatronics Laboratory	0	0	3	2
9.	ME6713	Comprehension	0	0	2	1
		TOTAL	**18**	**0**	**8**	**23**

SEMESTER VIII

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MG6863	Engineering Economics	3	0	0	3
2.		Elective – IV	3	0	0	3
3.		Elective – V	3	0	0	3
PRACTICAL						
4.	ME6811	Project Work	0	0	12	6
		TOTAL	**9**	**0**	**12**	**15**

TOTAL NUMBER OF CREDITS TO BE EARNED FOR AWARD OF THE DEGREE = 188

ELECTIVES FOR B.E. MECHANICAL ENGINEERING

SEMESTER VI

Elective I

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	MG6072	Marketing Management	3	0	0	3
2.	ME6001	Quality Control and Reliability Engineering	3	0	0	3
3.	ME6002	Refrigeration and Air conditioning	3	0	0	3
4.	ME6003	Renewable Sources of Energy	3	0	0	3
5.	ME6004	Unconventional Machining Processes	3	0	0	3

SEMESTER VII

Elective II

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	ME6005	Process Planning and Cost Estimation	3	0	0	3
2.	ME6006	Design of Jigs, Fixtures and Press Tools	3	0	0	3
3.	ME6007	Composite Materials and Mechanics	3	0	0	3
4.	ME6008	Welding Technology	3	0	0	3
5.	ME6009	Energy Conservation and Management	3	0	0	3
6.	GE6083	Disaster Management	3	0	0	3

Elective III

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	ME6010	Robotics	3	0	0	3
2.	GE6081	Fundamentals of Nanoscience	3	0	0	3
3.	ME6011	Thermal Turbo Machines	3	0	0	3
4.	ME6012	Maintenance Engineering	3	0	0	3
5.	EE6007	Micro Electro Mechanical Systems	3	0	0	3
6.	ME6021	Hydraulics and Pneumatics	3	0	0	3

SEMESTER-VIII
Elective IV

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	IE6605	Production Planning and Control	3	0	0	3
2.	MG6071	Entrepreneurship Development	3	0	0	3
3.	ME6013	Design of Pressure Vessels and Piping	3	0	0	3
4.	ME6014	Computational Fluid Dynamics	3	0	0	3
5.	ME6015	Operations Research	3	0	0	3
6.	GE6084	Human Rights	3	0	0	3

Elective V

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	ME6016	Advanced I.C. Engines	3	0	0	3
2.	ME6017	Design of Heat Exchangers	3	0	0	3
3.	ME6018	Additive Manufacturing	3	0	0	3
4.	ME6019	Non Destructive Testing and Materials	3	0	0	3
5.	ME6020	Vibration and Noise Control	3	0	0	3

6. Robert M Sherfield and et al. **"Developing Soft Skills"** 4th edition, New Delhi: Pearson Education, 2009.

Web Sources:

http://www.slideshare.net/rohitjsh/presentation-on-group-discussion
http://www.washington.edu/doit/TeamN/present_tips.html
http://www.oxforddictionaries.com/words/writing-job-applications
http://www.kent.ac.uk/careers/cv/coveringletters.htm
http://www.mindtools.com/pages/article/newCDV_34.htm

ME6701 POWER PLANT ENGINEERING

L	T	P	C
3	0	0	3

OBJECTIVES:

- Providing an overview of Power Plants and detailing the role of Mechanical Engineers in their operation and maintenance.

UNIT I COAL BASED THERMAL POWER PLANTS 10

Rankine cycle - improvisations, Layout of modern coal power plant, Super Critical Boilers, FBC Boilers, Turbines, Condensers, Steam & Heat rate, Subsystems of thermal power plants – Fuel and ash handling, Draught system, Feed water treatment. Binary Cycles and Cogeneration systems.

UNIT II DIESEL, GAS TURBINE AND COMBINED CYCLE POWER PLANTS 10

Otto, Diesel, Dual & Brayton Cycle - Analysis & Optimisation. Components of Diesel and Gas Turbine power plants. Combined Cycle Power Plants. Integrated Gasifier based Combined Cycle systems.

UNIT III NUCLEAR POWER PLANTS 7

Basics of Nuclear Engineering, Layout and subsystems of Nuclear Power Plants, Working of Nuclear Reactors : B*oilin*g *Water Reactor* (BWR), P*ressurized Water Reactor* (PWR), CANada Deuterium-Uranium reactor (CANDU), Breeder, Gas Cooled and Liquid Metal Cooled Reactors. Safety measures for Nuclear Power plants.

UNIT IV POWER FROM RENEWABLE ENERGY 10

Hydro Electric Power Plants – Classification, Typical Layout and associated components including Turbines. Principle, Construction and working of Wind, Tidal, *Solar* Photo Voltaic (SPV), Solar Thermal, Geo Thermal, Biogas and Fuel Cell power systems.

UNIT V ENERGY, ECONOMIC AND ENVIRONMENTAL ISSUES OF POWER PLANTS 8

Power tariff types, Load distribution parameters, load curve, Comparison of site selection criteria, relative merits & demerits, Capital & Operating Cost of different power plants. Pollution control technologies including Waste Disposal Options for Coal and Nuclear Power Plants.

TOTAL : 45 PERIODS

OUTCOMES:

- Upon completion of this course, the students can able to understand different types of power plant, and its functions and their flow lines and issues related to them.
- Analyse and solve energy and economic related issues in power sectors.

TEXT BOOK:

1. Nag. P.K., "Power Plant Engineering", Third Edition, Tata McGraw – Hill Publishing Company Ltd., 2008.

REFERENCES:

1. El-Wakil. M.M., "Power Plant Technology", Tata McGraw – Hill Publishing Company Ltd., 2010.
2. Black & Veatch, Springer, "Power Plant Engineering", 1996.
3. Thomas C. Elliott, Kao Chen and Robert C. Swanekamp, "Power Plant Engineering", Second Edition, Standard Handbook of McGraw – Hill, 1998.
4. Godfrey Boyle, "Renewable energy", Open University, Oxford University Press in association with the Open University, 2004.

ME6702 MECHATRONICS

L	T	P	C
3	0	0	3

OBJECTIVES:

- To impart knowledge about the elements and techniques involved in Mechatronics systems which are very much essential to understand the emerging field of automation.

UNIT I INTRODUCTION 12

Introduction to Mechatronics – Systems – Concepts of Mechatronics approach – Need for Mechatronics – Emerging areas of Mechatronics – Classification of Mechatronics. Sensors and Transducers**:** Static and dynamic Characteristics of Sensor, Potentiometers – LVDT – Capacitance sensors – Strain gauges – Eddy current sensor – Hall effect sensor – Temperature sensors – Light sensors

UNIT II 8085 MICROPROCESSOR AND 8051 MICROCONTROLLER 10

Introduction – Architecture of 8085 – Pin Configuration – Addressing Modes –Instruction set, Timing diagram of 8085 – Concepts of 8051 microcontroller – Block diagram,.

UNIT III PROGRAMMABLE PERIPHERAL INTERFACE 8

Introduction – Architecture of 8255, Keyboard interfacing, LED display –interfacing, ADC and DAC interface, Temperature Control – Stepper Motor Control – Traffic Control interface.

UNIT IV PROGRAMMABLE LOGIC CONTROLLER 7

Introduction – Basic structure – Input and output processing – Programming – Mnemonics – Timers, counters and internal relays – Data handling – Selection of PLC.

UNIT V ACTUATORS AND MECHATRONIC SYSTEM DESIGN 8

Types of Stepper and Servo motors – Construction – Working Principle – Advantages and Disadvantages. Design process-stages of design process – Traditional and Mechatronics design concepts – Case studies of Mechatronics systems – Pick and place Robot – Engine Management system – Automatic car park barrier.

TOTAL : 45 PERIODS

OUTCOMES:

- Upon completion of this course, the students can able to design mechatronics system with the help of Microprocessor, PLC and other electrical and Electronics Circuits.

TEXT BOOKS:

– types – Line and staff authority – departmentalization – delegation of authority – centralization and decentralization – Job Design - Human Resource Management – HR Planning, Recruitment, selection, Training and Development, Performance Management , Career planning and management.

UNIT IV DIRECTING 9

Foundations of individual and group behaviour – motivation – motivation theories – motivational techniques – job satisfaction – job enrichment – leadership – types and theories of leadership – communication – process of communication – barrier in communication – effective communication – communication and IT.

UNIT V CONTROLLING 9

System and process of controlling – budgetary and non-budgetary control techniques – use of computers and IT in Management control – Productivity problems and management – control and performance – direct and preventive control – reporting.

TOTAL: 45 PERIODS

OUTCOMES:

- Upon completion of the course, students will be able to have clear understanding of managerial functions like planning, organizing, staffing, leading & controlling and have same basic knowledge on international aspect of management

TEXTBOOKS:

1. Stephen P. Robbins & Mary Coulter, “Management”, Prentice Hall (India)Pvt. Ltd., 10th Edition, 2009.
2. JAF Stoner, Freeman R.E and Daniel R Gilbert “Management”, 6th Edition, Pearson Education, 2004.

REFERENCES:

1. Stephen A. Robbins & David A. Decenzo & Mary Coulter, “Fundamentals of Management” 7th Edition, Pearson Education, 2011.
2. Robert Kreitner & Mamata Mohapatra, “ Management”, Biztantra, 2008.
3. Harold Koontz & Heinz Weihrich, “Essentials of Management”, Tata McGraw Hill, 1998.
4. Tripathy PC & Reddy PN, “Principles of Management”, Tata Mcgraw Hill, 1999

ME6602 AUTOMOBILE ENGINEERING

L	T	P	C
3	0	0	3

OBJECTIVES:

- To understand the construction and working principle of various parts of an automobile.
- To have the practice for assembling and dismantling of engine parts and transmission system

UNIT I VEHICLE STRUCTURE AND ENGINES 9

Types of automobiles, vehicle construction and different layouts, chassis, frame and body, Vehicle aerodynamics (various resistances and moments involved), IC engines –components-functions and materials, variable valve timing (VVT).

UNIT II ENGINE AUXILIARY SYSTEMS 9

Electronically controlled gasoline injection system for SI engines, Electronically controlled diesel injection system (Unit injector system, Rotary distributor type and common rail direct injection system), Electronic ignition system (Transistorized coil ignition system, capacitive discharge ignition system), Turbo chargers (WGT, VGT), Engine emission control by three way catalytic converter system, Emission norms (Euro and BS).

UNIT III TRANSMISSION SYSTEMS 9

Clutch-types and construction, gear boxes- manual and automatic, gear shift mechanisms, Over drive, transfer box, fluid flywheel, torque converter, propeller shaft, slip joints, universal joints ,Differential and rear axle, Hotchkiss Drive and Torque Tube Drive.

UNIT IV STEERING, BRAKES AND SUSPENSION SYSTEMS 9

Steering geometry and types of steering gear box-Power Steering, Types of Front Axle, Types of Suspension Systems, Pneumatic and Hydraulic Braking Systems, Antilock Braking System (ABS), electronic brake force distribution (EBD) and Traction Control.

UNIT V ALTERNATIVE ENERGY SOURCES 9

Use of Natural Gas, Liquefied Petroleum Gas, Bio-diesel, Bio-ethanol, Gasohol and Hydrogen in Automobiles- Engine modifications required –Performance, Combustion and Emission Characteristics of SI and CI engines with these alternate fuels - Electric and Hybrid Vehicles, Fuel Cell Note: Practical Training in dismantling and assembling of Engine parts and Transmission Systems should be given to the students.

TOTAL: 45 PERIODS

OUTCOMES:

- Upon completion of this course, the students will be able to identify the different components in automobile engineering.
- Have clear understanding on different auxiliary and transmission systems usual.

TEXT BOOKS:

1. Kirpal Singh, “Automobile Engineering”, Vol 1 & 2, Seventh Edition, Standard Publishers, New Delhi, 1997.
2. Jain K.K. and Asthana .R.B, “Automobile Engineering” Tata McGraw Hill Publishers, New Delhi, 2002.

REFERENCES:

1. Newton ,Steeds and Garet, “Motor Vehicles”, Butterworth Publishers,1989.
2. Joseph Heitner, “Automotive Mechanics,” Second Edition, East-West Press, 1999.
3. Martin W, Stockel and Martin T Stockle , “Automotive Mechanics Fundamentals,” The Good heart –Will Cox Company Inc, USA ,1978.
4. Heinz Heisler, “Advanced Engine Technology,” SAE International Publications USA, 1998.
5. Ganesan V. “Internal Combustion Engines”, Third Edition, Tata McGraw-Hill, 2007.

ME6603 FINITE ELEMENT ANALYSIS

L	T	P	C
3	0	0	3

OBJECTIVES:

- To introduce the concepts of Mathematical Modeling of Engineering Problems.
- To appreciate the use of FEM to a range of Engineering Problems.

UNIT I INTRODUCTION 9

Historical Background – Mathematical Modeling of field problems in Engineering – Governing Equations – Discrete and continuous models – Boundary, Initial and Eigen Value problems– Weighted Residual Methods – Variational Formulation of Boundary Value Problems – RitzTechnique – Basic concepts of the Finite Element Method.

TEXT BOOKS:

1. Bansal, R.K., "Strength of Materials", Laxmi Publications (P) Ltd., 2007
2. Jindal U.C., "Strength of Materials", Asian Books Pvt. Ltd., New Delhi, 2007

REFERENCES:

1. Egor. P.Popov “Engineering Mechanics of Solids” Prentice Hall of India, New Delhi, 2001
2. Subramanian R., "Strength of Materials", Oxford University Press, Oxford Higher Education Series, 2007.
3. Hibbeler, R.C., "Mechanics of Materials", Pearson Education, Low Price Edition, 2007
4. Ferdinand P. Been, Russell Johnson, J.r. and John J. Dewole "Mechanics of Materials", Tata McGraw Hill Publishing ‘co. Ltd., New Delhi, 2005.

ME6301 ENGINEERING THERMODYNAMICS

L	T	P	C
3	0	0	3

OBJECTIVES:

- To familiarize the students to understand the fundamentals of thermodynamics and to perform thermal analysis on their behavior and performance.

  (Use of Standard and approved Steam Table, Mollier Chart, Compressibility Chart and Psychrometric Chart permitted)

UNIT I BASIC CONCEPTS AND FIRST LAW 9

Basic concepts - concept of continuum, comparison of microscopic and macroscopic approach. Path and point functions. Intensive and extensive, total and specific quantities. System and their types. Thermodynamic Equilibrium State, path and process. Quasi-static, reversible and irreversible processes. Heat and work transfer, definition and comparison, sign convention. Displacement work and other modes of work .P-V diagram. Zeroth law of thermodynamics – concept of temperature and thermal equilibrium– relationship between temperature scales –new temperature scales. First law of thermodynamics –application to closed and open systems – steady and unsteady flow processes.

UNIT II SECOND LAW AND AVAILABILITY ANALYSIS 9

Heat Reservoir, source and sink. Heat Engine, Refrigerator, Heat pump. Statements of second law and its corollaries. Carnot cycle Reversed Carnot cycle, Performance. Clausius inequality. Concept of entropy, T-s diagram, Tds Equations, entropy change for - pure substance, ideal gases - different processes, principle of increase in entropy. Applications of II Law. High and low grade energy. Available and non-available energy of a source and finite body. Energy and irreversibility. Expressions for the energy of a closed system and open systems. Energy balance and entropy generation. Irreversibility. I and II law Efficiency.

UNIT III PROPERTIES OF PURE SUBSTANCE AND STEAM POWER CYCLE 9

Formation of steam and its thermodynamic properties, p-v, p-T, T-v, T-s, h-s diagrams. p-v-T surface. Use of Steam Table and Mollier Chart. Determination of dryness fraction. Application of I and II law for pure substances. Ideal and actual Rankine cycles, Cycle Improvement Methods - Reheat and Regenerative cycles, Economiser, preheater, Binary and Combined cycles.

UNIT IV IDEAL AND REAL GASES, THERMODYNAMIC RELATIONS 9

Properties of Ideal gas- Ideal and real gas comparison- Equations of state for ideal and real gases- Reduced properties-.Compressibility factor-.Principle of Corresponding states. -Generalised Compressibility Chart and its use-. Maxwell relations, Tds Equations, Difference and ratio of heat

capacities, Energy equation, Joule-Thomson Coefficient, Clausius Clapeyron equation, Phase Change Processes. Simple Calculations.

UNIT V GAS MIXTURES AND PSYCHROMETRY 9

Mole and Mass fraction, Dalton's and Amagat's Law. Properties of gas mixture – Molar mass, gas constant, density, change in internal energy, enthalpy, entropy and Gibbs function. Psychrometric properties, Psychrometric charts. Property calculations of air vapour mixtures by using chart and expressions. Psychrometric process – adiabatic saturation, sensible heating and cooling, humidification, dehumidification, evaporative cooling and adiabatic mixing. Simple Applications

TOTAL : 45 PERIODS

OUTCOMES:

- Upon completion of this course, the students can able to apply the Thermodynamic Principles to Mechanical Engineering Application.
- Apply mathematical fundamentals to study the properties of steam, gas and gas mixtures.

TEXT BOOKS :

1. Nag.P.K., "Engineering Thermodynamics", 4th Edition, Tata McGraw-Hill, New Delhi, 2008.
2. Natarajan E., "Engineering Thermodynamics: Fundamentals and Applications", Anuragam Publications, 2012.

REFERENCES :

1. Cengel. Y and M.Boles, "Thermodynamics - An Engineering Approach", 7th Edition, Tata McGraw Hill, 2010.
2. Holman.J.P., "Thermodynamics", 3rd Edition, McGraw-Hill, 1995.
3. Rathakrishnan. E., "Fundamentals of Engineering Thermodynamics", 2nd Edition, Prentice-Hall of India Pvt. Ltd, 2006
4. Chattopadhyay, P, "Engineering Thermodynamics", Oxford University Press, 2010.
5. Arora C.P, "Thermodynamics", Tata McGraw-Hill, New Delhi, 2003.
6. Van Wylen and Sonntag, "Classical Thermodynamics", Wiley Eastern, 1987
7. Venkatesh. A, "Basic Engineering Thermodynamics", Universities Press (India) Limited, 2007.
8. Kau-Fui Vincent Wong, "Thermodynamics for Engineers", CRC Press, 2010 Indian Reprint.
9. Prasanna Kumar: Thermodynamics "Engineering Thermodynamics" Pearson Education, 2013

CE6451 FLUID MECHANICS AND MACHINERY

L	T	P	C
3	0	0	3

OBJECTIVES:

- The applications of the conservation laws to flow through pipes and hydraulic machines are studied
- To understand the importance of dimensional analysis.
- To understand the importance of various types of flow in pumps and turbines.

UNIT I FLUID PROPERTIES AND FLOW CHARACTERISTICS 8

Units and dimensions- Properties of fluids- mass density, specific weight, specific volume, specific gravity, viscosity, compressibility, vapor pressure, surface tension and capillarity. Flow characteristics – concept of control volume - application of continuity equation, energy equation and momentum equation.

UNIT II FLOW THROUGH CIRCULAR CONDUITS 8

Hydraulic and energy gradient - Laminar flow through circular conduits and circular annuli-Boundary layer concepts – types of boundary layer thickness – Darcy Weisbach equation –friction factor- Moody diagram- commercial pipes- minor losses – Flow through pipes in series and parallel.

UNIT III DIMENSIONAL ANALYSIS 9

Need for dimensional analysis – methods of dimensional analysis – Similitude –types of similitude - Dimensionless parameters- application of dimensionless parameters – Model analysis.

UNIT IV PUMPS 10

Impact of jets - Euler's equation - Theory of roto-dynamic machines – various efficiencies– velocity components at entry and exit of the rotor- velocity triangles - Centrifugal pumps– working principle - work done by the impeller - performance curves - Reciprocating pump- working principle – Rotary pumps –classification.

UNIT V TURBINES 10

Classification of turbines – heads and efficiencies – velocity triangles. Axial, radial and mixed flow turbines. Pelton wheel, Francis turbine and Kaplan turbines- working principles - work done by water on the runner – draft tube. Specific speed - unit quantities – performance curves for turbines – governing of turbines.

TOTAL: 45 PERIODS

OUTCOMES:

- Upon completion of this course, the students can able to apply mathematical knowledge to predict the properties and characteristics of a fluid.
- Can critically analyse the performance of pumps and turbines.

TEXT BOOK:

1. Modi P.N. and Seth, S.M. "Hydraulics and Fluid Mechanics", Standard Book House, New Delhi 2004.

REFERENCES:

1. Streeter, V. L. and Wylie E. B., "Fluid Mechanics", McGraw Hill Publishing Co. 2010
2. Kumar K. L., "Engineering Fluid Mechanics", Eurasia Publishing House(p) Ltd., New Delhi 2004
3. Robert W.Fox, Alan T. McDonald, Philip J.Pritchard, "Fluid Mechanics and Machinery", 2011.
4. Graebel. W.P, "Engineering Fluid Mechanics", Taylor & Francis, Indian Reprint, 2011

ME6302 MANUFACTURING TECHNOLOGY – I

L	T	P	C
3	0	0	3

OBJECTIVES:

- To introduce the concepts of basic manufacturing processes and fabrication techniques, such as metal casting, metal joining, metal forming and manufacture of plastic components.

UNIT I METAL CASTING PROCESSES 9

Sand Casting : Sand Mould – Type of patterns - Pattern Materials – Pattern allowances –Moulding sand Properties and testing – Cores –Types and applications – Moulding machines– Types and applications; **Melting furnaces** : Blast and Cupola Furnaces; **Principle of special casting processes :** Shell - investment – Ceramic mould – Pressure die casting - Centrifugal Casting - CO_2 process – Stir casting; **Defects in Sand casting**

UNIT II JOINING PROCESSES 9

Operating principle, basic equipment, merits and applications of : Fusion welding processes : Gas welding - Types – Flame characteristics; Manual metal arc welding – Gas Tungsten arc welding - Gas metal arc welding – Submerged arc welding – Electro slag welding; **Operating principle and applications of** : Resistance welding - Plasma arc welding – Thermit welding – Electron beam welding – Friction welding and Friction Stir Welding; Brazing and soldering; **Weld defects:** types, causes and cure.

UNIT III METAL FORMING PROCESSES 9

Hot working and cold working of metals – Forging processes – Open, impression and closed die forging – forging operations. Rolling of metals– Types of Rolling – Flat strip rolling – shape rolling operations – Defects in rolled parts. Principle of rod and wire drawing – Tube drawing – Principles of Extrusion – Types – Hot and Cold extrusion.

UNIT IV SHEET METAL PROCESSES 9

Sheet metal characteristics – shearing, bending and drawing operations – Stretch forming operations – Formability of sheet metal – Test methods –special forming processes-Working principle and applications – Hydro forming – Rubber pad forming – Metal spinning– Introduction of Explosive forming, magnetic pulse forming, peen forming, Super plastic forming – Micro forming

UNIT V MANUFACTURE OF PLASTIC COMPONENTS 9

Types and characteristics of plastics – Moulding of thermoplastics – working principles and typical applications – injection moulding – Plunger and screw machines – Compression moulding, Transfer Moulding – Typical industrial applications – introduction to blow moulding –Rotational moulding – Film blowing – Extrusion – Thermoforming – Bonding of Thermoplastics.

TOTAL: 45 PERIODS

OUTCOMES:

- Upon completion of this course, the students can able to apply the different manufacturing process and use this in industry for component production

TEXT BOOKS:

1. Hajra Chouldhary S.K and Hajra Choudhury. AK., "Elements of workshop Technology", volume I and II, Media promoters and Publishers Private Limited, Mumbai, 1997
2. Kalpakjian. S, “Manufacturing Engineering and Technology”, Pearson Education India Edition, 2006

REFERENCES:

1. Gowri P. Hariharan, A.Suresh Babu, "Manufacturing Technology I", Pearson Education, 2008
2. Roy. A. Lindberg, "Processes and Materials of Manufacture", PHI / Pearson education, 2006
3. Paul Degarma E, Black J.T and Ronald A. Kosher, "Materials and Processes, in Manufacturing" Eight Edition, Prentice – Hall of India, 1997.
4. Sharma, P.C., "A Text book of production Technology", S.Chand and Co. Ltd., 2004.
5. Rao, P.N. "Manufacturing Technology Foundry, Forming and Welding", 2nd Edition, TMH-2003; 2003

UNIT V FRICTION IN MACHINE ELEMENTS 9

Surface contacts – Sliding and Rolling friction – Friction drives – Friction in screw threads –Bearings and lubrication – Friction clutches – Belt and rope drives – Friction in brakes- Band and Block brakes.

TOTAL: 45 PERIODS

OUTCOMES:

- Upon completion of this course, the students can able to apply fundamentals of mechanism for the design of new mechanisms and analyse them for optimum design.

TEXT BOOKS:

1. Uicker, J.J., Pennock G.R and Shigley, J.E., “Theory of Machines and Mechanisms”, 3rd Edition, Oxford University Press, 2009.
2. Rattan, S.S, “Theory of Machines”, 3rd Edition, Tata McGraw-Hill, 2009.

REFERENCES:

1. Thomas Bevan, "Theory of Machines", 3rd Edition, CBS Publishers and Distributors, 2005.
2. Cleghorn. W. L, “Mechanisms of Machines”, Oxford University Press, 2005
3. Robert L. Norton, "Kinematics and Dynamics of Machinery", Tata McGraw-Hill, 2009.
4. Allen S. Hall Jr., “Kinematics and Linkage Design”, Prentice Hall, 1961
5. Ghosh. A and Mallick, A.K., “Theory of Mechanisms and Machines", Affiliated East-West Pvt. Ltd., New Delhi, 1988.
6. Rao.J.S. and Dukkipati.R.V. "Mechanisms and Machine Theory", Wiley-Eastern Ltd., New Delhi, 1992.
7. John Hannah and Stephens R.C., "Mechanics of Machines", Viva Low-Prices Student Edition, 1999.
8. Ramamurthi. V, "Mechanics of Machines", Narosa Publishing House, 2002.
9. Khurmi, R.S., ”Theory of Machines”,14th Edition, S Chand Publications, 2005
10. Sadhu Sigh : Theory of Machines, "Kinematics of Machine", Third Edition, Pearson Education, 2012

ME6402 MANUFACTURING TECHNOLOGY – II

L	T	P	C
3	0	0	3

OBJECTIVES:

- To understand the concept and basic mechanics of metal cutting, working of standard machine tools such as lathe, shaping and allied machines, milling, drilling and allied machines, grinding and allied machines and broaching.
- To understand the basic concepts of Computer Numerical Control (CNC) of machine tools and CNC Programming

UNIT I THEORY OF METAL CUTTING 9

Mechanics of chip formation, single point cutting tool, forces in machining, Types of chip, cutting tools – nomenclature, orthogonal metal cutting, thermal aspects, cutting tool materials, tool wear, tool life, surface finish, cutting fluids and Machinability.

UNIT II TURNING MACHINES 9

Centre lathe, constructional features, specification, operations – taper turning methods, thread cutting methods, special attachments, machining time and power estimation. Capstan and turret lathes- tool layout – automatic lathes: semi automatic – single spindle : Swiss type, automatic screw type – multi spindle:

UNIT III SHAPER, MILLING AND GEAR CUTTING MACHINES 9

Shaper - Types of operations. Drilling ,reaming, boring, Tapping. Milling operations-types of milling cutter. Gear cutting – forming and generation principle and construction of gear milling ,hobbing and gear shaping processes –finishing of gears.

UNIT IV ABRASIVE PROCESS AND BROACHING 9

Abrasive processes: grinding wheel – specifications and selection, types of grinding process– cylindrical grinding, surface grinding, centreless grinding and internal grinding- Typical applications – concepts of surface integrity, broaching machines: broach construction – push, pull, surface and continuous broaching machines

UNIT V CNC MACHINING 9

Numerical Control (NC) machine tools – CNC types, constructional details, special features, machining centre, part programming fundamentals CNC – manual part programming – micromachining – wafer machining

TOTAL : 45 PERIODS

OUTCOMES:

- Upon completion of this course, the students can able to understand and compare the functions and applications of different metal cutting tools and also demonstrate the programming in CNC machining.

TEXT BOOKS:

1. Hajra Choudhury, "Elements of Workshop Technology", Vol.II., Media Promoters
2. Rao. P.N “Manufacturing Technology - Metal Cutting and Machine Tools", Tata McGraw-Hill, New Delhi, 2003.

REFERENCES:

1. Richerd R Kibbe, John E. Neely, Roland O. Merges and Warren J.White “Machine Tool Practices”, Prentice Hall of India, 1998
2. HMT, "Production Technology", Tata McGraw Hill, 1998.
3. Geofrey Boothroyd, "Fundamentals of Metal Machining and Machine Tools", Mc Graw Hill, 1984
4. Roy. A.Lindberg, “Process and Materials of Manufacture,” Fourth Edition, PHI/Pearson Education 2006.

ME6403 ENGINEERING MATERIALS AND METALLURGY

L	T	P	C
3	0	0	3

OBJECTIVES:

- To impart knowledge on the structure, properties, treatment, testing and applications of metals and non-metallic materials so as to identify and select suitable materials for various engineering applications.

UNIT I ALLOYS AND PHASE DIAGRAMS 9

Constitution of alloys – Solid solutions, substitutional and interstitial – phase diagrams, Isomorphous, eutectic, eutectoid, peritectic, and peritectoid reactions, Iron – carbon equilibrium diagram. Classification of steel and cast Iron microstructure, properties and application.

UNIT II HEAT TREATMENT 10

Definition – Full annealing, stress relief, recrystallisation and spheroidising – normalising, hardening and Tempering of steel. Isothermal transformation diagrams – cooling curves superimposed on I.T.

diagram CCR – Hardenability, Jominy end quench test - Austempering, martempering – case hardening, carburizing, Nitriding, cyaniding, carbonitriding – Flame and Induction hardening – Vacuum and Plasma hardening. .

UNIT III FERROUS AND NON-FERROUS METALS 9

Effect of alloying additions on steel- α and β stabilisers– stainless and tool steels – HSLA, Maraging steels – Cast Iron - Grey, white, malleable, spheroidal – alloy cast irons, Copper and copper alloys – Brass, Bronze and Cupronickel – Aluminium and Al-Cu – precipitation strengthening treatment – Bearing alloys, Mg-alloys, Ni-based super alloys and Titanium alloys.

UNIT IV NON-METALLIC MATERIALS 9

Polymers – types of polymer, commodity and engineering polymers – Properties and applications of various thermosetting and thermoplastic polymers (PP, PS, PVC, PMMA, PET,PC, PA, ABS, PI, PAI, PPO, PPS, PEEK, PTFE, Polymers – Urea and Phenol formaldehydes)- Engineering Ceramics – Properties and applications of Al_2O_3, SiC, Si_3N_4, PSZ and SIALON –Composites-Classifications- Metal Matrix and FRP - Applications of Composites.

UNIT V MECHANICAL PROPERTIES AND DEFORMATION MECHANISMS 8

Mechanisms of plastic deformation, slip and twinning – Types of fracture – Testing of materials under tension, compression and shear loads – Hardness tests (Brinell, Vickers and Rockwell), hardness tests, Impact test lzod and charpy, fatigue and creep failure mechanisms.

TOTAL : 45 PERIODS

OUTCOMES:

- Upon completion of this course, the students can able to apply the different materials, their processing, heat treatments in suitable application in mechanical engineering fields.

TEXT BOOKS:

1. Avner,, S.H., “Introduction to Physical Metallurgy”, McGraw Hill Book Company,1994.
2. Williams D Callister, “Material Science and Engineering” Wiley India Pvt Ltd, Revised Indian Edition 2007

REFERENCES:

1. Raghavan.V, “Materials Science and Engineering”, Prentice Hall of India Pvt. Ltd., 1999.
2. Kenneth G.Budinski and Michael K. Budinski, “Engineering Materials”, Prentice Hall of India Private Limited, 4th Indian Reprint 2002.
3. Upadhyay. G.S. and Anish Upadhyay, “Materials Science and Engineering”, Viva Books Pvt. Ltd., New Delhi, 2006.
4. U.C.Jindal : Material Science and Metallurgy, "Engineering Materials and Mettalurgy", First Edition, Dorling Kindersley, 2012

GE6351 ENVIRONMENTAL SCIENCE AND ENGINEERING

L	T	P	C
3	0	0	3

OBJECTIVES:

To the study of nature and the facts about environment.

- To finding and implementing scientific, technological, economic and political solutions to environmental problems.
- To study the interrelationship between living organism and environment.
- To appreciate the importance of environment by assessing its impact on the human world; envision the surrounding environment, its functions and its value.

OUTCOMES:

- Upon completion of this course, the students can able to successfully design machine components

TEXT BOOK:

1. Bhandari V, “Design of Machine Elements”, 3rd Edition, Tata McGraw-Hill Book Co, 2010.
2. Joseph Shigley, Charles Mischke, Richard Budynas and Keith Nisbett “Mechanical Engineering Design”, 8th Edition, Tata McGraw-Hill, 2008.

REFERENCES:

1. Sundararajamoorthy T. V. Shanmugam .N, “Machine Design”, Anuradha Publications, Chennai, 2003.
2. Robert C. Juvinall and Kurt M. Marshek, “Fundamentals of Machine Design”, 4th Edition, Wiley, 2005
3. Alfred Hall, Halowenko, A and Laughlin, H., “Machine Design”, Tata McGraw-Hill BookCo.(Schaum’s Outline), 2010
4. Bernard Hamrock, Steven Schmid,Bo Jacobson, “Fundamentals of Machine Elements”,2nd Edition, Tata McGraw-Hill Book Co., 2006.
5. Orthwein W, “Machine Component Design”, Jaico Publishing Co, 2003.
6. Ansel Ugural, “Mechanical Design – An Integral Approach", 1st Edition, Tata McGraw-Hill Book Co, 2003.
7. Merhyle F. Spotts, Terry E. Shoup and Lee E. Hornberger, “Design of Machine Elements” 8th Edition, Printice Hall, 2003.

ME6504 METROLOGY AND MEASUREMENTS

L	T	P	C
3	0	0	3

OBJECTIVES:

- To provide knowledge on various Metrological equipments available to measure the dimension of the components.
- To provide knowledge on the correct procedure to be adopted to measure the dimension of the components.

UNIT I .BASICS OF METROLOGY 5

Introduction to Metrology – Need – Elements – Work piece, Instruments – Persons – Environment – their effect on Precision and Accuracy – Errors – Errors in Measurements – Types – Control – Types of standards.

UNIT II LINEAR AND ANGULAR MEASUREMENTS 10

Linear Measuring Instruments – Evolution – Types – Classification – Limit gauges – gauge design – terminology – procedure – concepts of interchange ability and selective assembly – Angular measuring instruments – Types – Bevel protractor clinometers angle gauges, spirit levels sine bar – Angle alignment telescope – Autocollimator – Applications.

UNIT III ADVANCES IN METROLOGY 12

Basic concept of lasers Advantages of lasers – laser Interferometers – types – DC and AC Lasers interferometer – Applications – Straightness – Alignment. Basic concept of CMM – Types of CMM – Constructional features – Probes – Accessories – Software – Applications – Basic concepts of Machine Vision System – Element – Applications.

UNIT IV FORM MEASUREMENT 10

Principles and Methods of straightness – Flatness measurement – Thread measurement, gear measurement, surface finish measurement, Roundness measurement – Applications.

UNIT V MEASUREMENT OF POWER, FLOW AND TEMPERATURE 8

Force, torque, power - mechanical , Pneumatic, Hydraulic and Electrical type. Flow measurement: Venturimeter, Orifice meter, rotameter, pitot tube – Temperature: bimetallic strip, thermocouples, electrical resistance thermometer – Reliability and Calibration – Readability and Reliability.

TOTAL : 45 PERIODS

OUTCOMES:

- Upon completion of this course, the Students can demonstrate different measurement technologies and use of them in Industrial Components

TEXT BOOKS:

1. Jain R.K. “Engineering Metrology”, Khanna Publishers, 2005.
2. Gupta. I.C., “Engineering Metrology”, Dhanpatrai Publications, 2005.

REFERENCES:

1. Charles Reginald Shotbolt, “Metrology for Engineers”, 5th edition, Cengage Learning EMEA,1990.
2. Backwith, Marangoni, Lienhard, “Mechanical Measurements”, Pearson Education , 2006.

ME6505 DYNAMICS OF MACHINES

L	T	P	C
3	0	0	3

OBJECTIVES:

- To understand the force-motion relationship in components subjected to external forces and analysis of standard mechanisms.
- To understand the undesirable effects of unbalances resulting from prescribed motions in mechanism.
- To understand the effect of Dynamics of undesirable vibrations.
- To understand the principles in mechanisms used for speed control and stability control.

UNIT I FORCE ANALYSIS 9

Dynamic force analysis – Inertia force and Inertia torque– D Alembert’s principle –Dynamic Analysis in reciprocating engines – Gas forces – Inertia effect of connecting rod– Bearing loads – Crank shaft torque – Turning moment diagrams –Fly Wheels – Flywheels of punching presses- Dynamics of Cam-follower mechanism.

UNIT II BALANCING 9

Static and dynamic balancing – Balancing of rotating masses – Balancing a single cylinder engine – Balancing of Multi-cylinder inline, V-engines – Partial balancing in engines – Balancing of linkages – Balancing machines-Field balancing of discs and rotors.

UNIT III SINGLE DEGREE FREE VIBRATION 9

Basic features of vibratory systems – Degrees of freedom – single degree of freedom – Free vibration – Equations of motion – Natural frequency – Types of Damping – Damped vibration– Torsional vibration of shaft – Critical speeds of shafts – Torsional vibration – Two and three rotor torsional systems.

accidents and holocaust, case studies. – wasteland reclamation – consumerism and waste products – environment production act – Air act – Water act – Wildlife protection act – Forest conservation act – The Biomedical Waste (Management and Handling) Rules; 1998 and amendments- scheme of labeling of environmentally friendly products (Ecomark). enforcement machinery involved in environmental legislation- central and state pollution control boards- disaster management: floods, earthquake, cyclone and landslides. Public awareness.

UNIT V HUMAN POPULATION AND THE ENVIRONMENT 6

Population growth, variation among nations – population explosion – family welfare programme – environment and human health – human rights – value education – HIV / AIDS – women and child welfare –Environmental impact analysis (EIA)- -GIS-remote sensing-role of information technology in environment and human health – Case studies.

TOTAL : 45 PERIODS

OUTCOMES:

Environmental Pollution or problems cannot be solved by mere laws. Public participation is an important aspect which serves the environmental Protection. One will obtain knowledge on the following after completing the course.

- Public awareness of environmental is at infant stage.
- Ignorance and incomplete knowledge has lead to misconceptions
- Development and improvement in std. of living has lead to serious environmental disasters

TEXT BOOKS :

1. Gilbert M.Masters, "Introduction to Environmental Engineering and Science", 2nd edition, Pearson Education, 2004.
2. Benny Joseph, "Environmental Science and Engineering", Tata McGraw-Hill, New Delhi, 2006.

REFERENCES :

1. Trivedi.R.K., "Handbook of Environmental Laws, Rules, Guidelines, Compliances and Standards", Vol. I and II, Enviro Media, 3rd edition, BPB publications, 2010.
2. Cunningham, W.P. Cooper, T.H. Gorhani, "Environmental Encyclopedia", Jaico Publ., House, Mumbai, 2001.
3. Dharmendra S. Sengar, "Environmental law", Prentice hall of India PVT LTD, New Delhi, 2007.
4. Rajagopalan, R, "Environmental Studies-From Crisis to Cure", Oxford University Press, 2005.

ME6404 THERMAL ENGINEERING

L	T	P	C
3	0	0	3

OBJECTIVES:

- To integrate the concepts, laws and methodologies from the first course in thermodynamics into analysis of cyclic processes
- To apply the thermodynamic concepts into various thermal application like IC engines, Steam Turbines, Compressors and Refrigeration and Air conditioning systems

(Use of standard refrigerant property data book, Steam Tables, Mollier diagram and Psychrometric chart permitted)

UNIT I GAS POWER CYCLES 8

Otto, Diesel, Dual, Brayton cycles, Calculation of mean effective pressure, and air standard efficiency - Comparison of cycles.

UNIT II INTERNAL COMBUSTION ENGINES 10

Classification - Components and their function. Valve timing diagram and port timing diagram - actual and theoretical p-V diagram of four stroke and two stroke engines. Simple and complete Carburettor. MPFI, Diesel pump and injector system. Battery and Magneto Ignition System - Principles of Combustion and knocking in SI and CI Engines. Lubrication and Cooling systems. Performance calculation.

UNIT III STEAM NOZZLES AND TURBINES 9

Flow of steam through nozzles, shapes of nozzles, effect of friction, critical pressure ratio, supersaturated flow. Impulse and Reaction principles, compounding, velocity diagram for simple and multi-stage turbines, speed regulations –Governors.

UNIT IV AIR COMPRESSOR 9

Classification and working principle of various types of compressors, work of compression with and without clearance, Volumetric efficiency, Isothermal efficiency and Isentropic efficiency of reciprocating compressors, Multistage air compressor and inter cooling –work of multistage air compressor

UNIT V REFRIGERATION AND AIR CONDITIONING 9

Refrigerants - Vapour compression refrigeration cycle- super heat, sub cooling – Performance calculations - working principle of vapour absorption system, Ammonia –Water, Lithium bromide – water systems (Description only) . Air conditioning system - Processes, Types and Working Principles. - Concept of RSHF, GSHF, ESHF- Cooling Load calculations.

TOTAL: 45 PERIODS

OUTCOMES:

- Upon completion of this course, the students can able to apply the different gas power cycles and use of them in IC and R&AC applications.

TEXT BOOKS:

1. Rajput. R. K., “Thermal Engineering” S.Chand Publishers, 2000
2. Kothandaraman.C.P., Domkundwar. S,Domkundwar. A.V., “A course in thermal Engineering", Fifth Edition, ”Dhanpat Rai & sons , 2002

REFERENCES:

1. Sarkar, B.K,”Thermal Engineering” Tata McGraw-Hill Publishers, 2007
2. Arora.C.P, ”Refrigeration and Air Conditioning ,” Tata McGraw-Hill Publishers 1994
3. Ganesan V..” Internal Combustion Engines” , Third Edition, Tata Mcgraw-Hill 2007
4. Rudramoorthy, R, “Thermal Engineering “,Tata McGraw-Hill, New Delhi,2003
5. Ramalingam. K.K., "Thermal Engineering", SCITECH Publications (India) Pvt. Ltd., 2009.

ME6411 MANUFACTURING TECHNOLOGY LABORATORY – II

L	T	P	C
0	0	3	2

OBJECTIVES:

- To Study and acquire knowledge on various basic machining operations in special purpose machines and its applications in real life manufacture of components in the industry

LIST OF EXPERIMENTS:

1. Contour milling using vertical milling machine
2. Spur gear cutting in milling machine
3. Helical Gear Cutting in milling machine

MHT

2019-20

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
B.E. MECHATRONICS ENGINEERING
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM
I TO VIII SEMESTERS CURRICULA AND SYLLABI

SEMESTER I

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	31	19	0	12	25

SEMESTER II

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8251	Materials Science	BS	3	3	0	0	3
4.	BE8253	Basic Electrical, Electronics and Instrumentation Engineering	ES	3	3	0	0	3
5.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
6.	GE8292	Engineering Mechanics	ES	5	3	2	0	4
PRACTICALS								
7.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8.	BE8261	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	ES	4	0	0	4	2
			TOTAL	30	20	2	8	25

SEMESTER III

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
2.	CE8395	Strength of Materials for Mechanical Engineers	ES	3	3	0	0	3
3.	CE8394	Fluid Mechanics and Machinery	ES	4	4	0	0	4
4.	EC8392	Digital Electronics	ES	3	3	0	0	3
5.	MT8301	Electrical Machines and Drives	ES	3	3	0	0	3
6.	MT8302	Analog Devices and Circuits	PC	3	3	0	0	3
PRACTICALS								
7.	CE8381	Strength of Materials and Fluid Mechanics & Machinery Laboratory	ES	4	0	0	4	2
8.	MT8311	Electrical Machines and Drives Laboratory	ES	4	0	0	4	2
9.	HS8381	Interpersonal Skills/Listening & Speaking	EEC	2	0	0	2	1
			TOTAL	30	20	0	10	25

SEMESTER IV

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8452	Statistics and Numerical Methods	BS	4	4	0	0	4
2.	ME8392	Manufacturing Technology	PC	3	3	0	0	3
3.	MT8491	Microprocessors and Microcontrollers	PC	3	3	0	0	3
4.	ME8492	Kinematics of Machinery	PC	3	3	0	0	3
5.	MT8401	Thermodynamics and Heat Transfer	PC	3	3	0	0	3
PRACTICALS								
6.	MT8411	Microprocessor and Microcontrollers Laboratory	PC	4	0	0	4	2
7.	ME8461	Manufacturing Technology Laboratory	PC	4	0	0	4	2
8.	ME8381	Computer Aided Machine Drawing	PC	4	0	0	4	2
9.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
			TOTAL	30	16	0	14	23

SEMESTER V

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	EE8552	Power Electronics	ES	3	3	0	0	3
2.	MT8591	Sensors and Instrumentation	PC	3	3	0	0	3
3.	ME8594	Dynamics of Machines	PC	4	4	0	0	4
4.	EC8391	Control Systems Engineering	ES	3	3	0	0	3
5.		Open Elective - I	OE	3	3	0	0	3
PRACTICALS								
6.	MT8511	Power Electronics Laboratory	ES	4	0	0	4	2
7.	MT8512	Sensors and Instrumentation Laboratory	PC	4	0	0	4	2
8.	ME8481	Dynamics Laboratory	PC	4	0	0	4	2
9.	HS8581	Professional Communication	EEC	2	0	0	2	1
			TOTAL	30	16	0	14	23

SEMESTER VI

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	ME8591	Applied Hydraulics and Pneumatics	PC	3	3	0	0	3
2.	MT8601	Design of Mechatronics System	PC	3	3	0	0	3
3.	ME8593	Design of Machine Elements	PC	3	3	0	0	3
4.	MT8602	Industrial Automation	PC	3	3	0	0	3
5.	MG8591	Principles of Management	HS	3	3	0	0	3
6.		Professional Elective – I	PE	3	3	0	0	3
PRACTICALS								
7.	MT8611	Applied Hydraulics and Pneumatics Laboratory	PC	4	0	0	4	2
8.	MT8612	Industrial Automation Laboratory	PC	4	0	0	4	2
9.	ME8682	Design and Fabrication Project	EEC	4	0	0	4	2
			TOTAL	30	18	0	12	24

SEMESTER III

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6351	Transforms and Partial Differential Equations	3	1	0	4
2.	CE6306	Strength of Materials	3	1	0	4
3.	CE6451	Fluid Mechanics and Machinery	3	0	0	3
4.	EC6302	Digital Electronics	3	0	0	3
5.	EE6358	Electrical Machines and Drives	3	0	0	3
6.	ME6401	Kinematics of Machinery	3	0	0	3
PRACTICALS						
7.	CE6461	Fluid Mechanics and Machinery Laboratory	0	0	3	2
8.	EE6362	Electrical Machines and Drives Laboratory	0	0	3	2
9.	MT6311	Computer Aided Machine Drawing	0	0	3	2
		TOTAL	18	2	9	26

SEMESTER IV

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6452	Statistics and Numerical Methods	3	1	0	4
2.	ME6505	Dynamics of Machines	3	0	0	3
3.	EC6405	Control System Engineering	3	0	0	3
4.	ME6352	Manufacturing Technology	3	0	0	3
5.	ME6504	Metrology and Measurements	3	0	0	3
6.	MT6401	Microprocessors and Applications	3	0	0	3
PRACTICALS						
7.	MT6411	Microprocessor Laboratory	0	0	3	2
8.	ME6465	Manufacturing Technology Laboratory	0	0	3	2
9.	ME6511	Dynamics Laboratory	0	0	3	2
		TOTAL	18	1	9	25

SEMESTER V

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	ME6503	Design of Machine Elements	3	0	0	3
2.	EE6503	Power Electronics	3	0	0	3
3.	MT6501	Sensors and Signal Processing	3	0	0	3
4.	GE6351	Environmental Science and Engineering	3	0	0	3
5.	MF6505	CNC Machining Technology	3	0	0	3
6.	MT6502	Thermodynamics Principles and Applications	3	0	0	3
PRACTICALS						
7.	MT6511	Power Electronics Laboratory	0	0	3	2
8.	MT6512	Sensors and Signal Processing Laboratory	0	0	3	2
9.	MT6513	CNC Laboratory	0	0	3	2
		TOTAL	18	0	9	24

SEMESTER VI

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MG6851	Principles of Management	3	0	0	3
2.	MT6601	Micro Controller and PLC	3	0	0	3
3.	MT6602	Applied Hydraulics and Pneumatics	3	0	0	3
4.	MT6603	Design of Mechatronics System	3	0	0	3
5.	MT6604	Object Oriented Programming in C++	3	0	0	3
6.		Elective – I	3	0	0	3
PRACTICALS						
7.	MT6611	Micro Controller and PLC Laboratory	0	0	3	2
8.	MT6612	Object Oriented Programming Laboratory	0	0	3	2
9.	MT6613	Applied Hydraulics and Pneumatics Laboratory	0	0	3	2
		TOTAL	18	0	9	24

SEMESTER VII

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MT6701	Medical Mechatronics	3	0	0	3
2.	MT6702	Modeling and Simulation	3	0	0	3
3.	MT6703	Robotics and Machine Vision System	3	0	0	3
4.	ME6602	Automobile Engineering	3	0	0	3
5.		Elective – II	3	0	0	3
6.		Elective - III	3	0	0	3
PRACTICALS						
7.	MT6711	Computer Aided Design and Computer Aided Manufacturing Laboratory	0	0	3	2
8.	MT6712	Robotics Laboratory	0	0	3	2
9.	MT6713	Design and Fabrication Project	0	0	4	2
		TOTAL	18	0	10	24

SEMESTER VIII

SL. No.	COURSE CODE.	COURSE TITLE	L	T	P	C
THEORY						
1.	MT6801	Automotive Electronics	3	0	0	3
2.		Elective - IV	3	0	0	3
3.		Elective – V	3	0	0	3
PRACTICAL						
4.	MT6811	Project Work	0	0	12	6
		TOTAL	9	0	12	15

TOTAL NUMBER OF CREDITS TO BE EARNED FOR AWARD OF THE DEGREE : 189

LIST OF ELECTIVES FOR B.E. MECHATRONICS ENGINEERING

SEMESTER VI
Elective I

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	MT6001	Advanced Manufacturing Technology	3	0	0	3
2.	GE6757	Total Quality Management	3	0	0	3
3.	IT6502	Digital Signal Processing	3	1	0	4
4.	IE6011	Product Design and Development	3	0	0	3

SEMESTER VII
Elective II

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	MT6002	Diagnostic Techniques	3	0	0	3
2.	MG6072	Marketing Management	3	0	0	3
3.	MT6003	Engineering Economics and Cost Analysis	3	0	0	3
4.	GE6084	Human Rights	3	0	0	3

Elective III

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	MT6004	Industrial Electronics and Applications	3	0	0	3
2.	ME6501	Computer Aided Design	3	0	0	3
3.	IT6005	Digital Image Processing	3	0	0	3
4.	EE6007	Micro Electro Mechanical Systems	3	0	0	3

ANNA UNIVERSITY :: CHENNAI - 600025.
OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of April / May Examination,2020.

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 08** **DATE OF PUBLICATION :17-10-2020**

Branch : 115-B.E. Mechatronics Engineering

	Subject Code - >	GE6075	MG6071	MT6801	MT6811
Reg. Number	**Stud. Name**	**Grade**	**Grade**	**Grade**	**Grade**
312814115302	DINESHBABU S	C			
312814115701	SELVA SANJEEV RAI P			UA	
312815115007	DHODDU KANDASAMY D	C		C	
312815115020	MANIKANDAN K	E	D	E	
312815115054	VISHAL R	UA	C	UA	
312815115303	RAGHAVENDRA B	E			
312816115001	AJISH K	B	B	A	S
312816115002	AKILAN A	B	B	B	S
312816115003	AKILAN M	B	B	B	S
312816115004	ANTONY JOHN E	A	S	A	S
312816115006	ASWITH L	D	C	D	S
312816115007	BHARATH KARTHIK M	C	C	C	S
312816115008	DAYALAN J	C	B	C	S
312816115009	DWARAKESH K	C	A	B	S
312816115010	FERNANDO JOY S	C	B	D	S
312816115011	GREESE GILBERT VIJAY J	C	C	C	S
312816115012	JAISURIYA V	C	C	C	S
312816115013	JANAKI RAMAN T	A	A	A	S
312816115014	KALAIVANAN J	B	A	C	S
312816115015	KARAN E	B	A	A	S
312816115016	KISHORE KUMAR S	A	A	B	S
312816115017	KIZHAKKOOTT SARATH SREEDHARAN	A	A	A	S
312816115018	LENIN K	B	A	A	S
312816115019	MAGESH KUMAR S	C	B	B	S
312816115020	MATHAN S	A	A	B	S
312816115023	NAVEENKUMAR S	B	B	B	S
312816115024	PANI KINGSON A	C	B	C	S
312816115025	POOVARASAN R	C	C	C	S
312816115026	PRASANTH K	C	D	E	S
312816115027	PRAVEEN KUMAR PATEL B	A	B	A	S
312816115028	RAGOTHAMAN S	C	B	C	S
312816115029	RAMANAN R	B	C	B	S
312816115030	RAMKUMAR P	B	B	C	S

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312816115031	RAM VIGNESH A	B	B	B	S
312816115032	RUTHRA P	B	B	B	S
312816115033	SABARINATHAN J	A	A	A	S
312816115034	SANTHOSH KUMAR S	B	S	B	S
312816115035	SATHISWARABALAJE R	B	A	A	S
312816115036	SHARAN KUMAR J	B	B	B	S
312816115037	SHIVAANI DEVI R	A	A	B	S
312816115038	SIDHARTHAN R	B	A	A	S
312816115039	SUDHARSAN M	C	C	C	S
312816115040	SURENDAR S	C	B	C	S
312816115041	SURYA R	C	B	B	S
312816115042	VENKATARAMANAN S	B	B	B	S
312816115043	VENKATESH C B	S	A	S	S
312816115044	VISHWADATH A	A	A	A	S
312816115045	YOGA RAJ V	D	B	C	S
312816115301	GENU RAJ R	D	B	C	S
312816115302	MARIA ANTONY DENISON T	D	D	C	S
312816115303	MOHAMED ABUDHAHIRDEEN VM	C	B	C	S
312816115304	MOKESH KANNAN S	E	E	E	S
312816115305	VENKATESH K	B	C	C	S
312816115503	VIDHYA SRI M	B	A	B	S
312816115504	MAGESHWARAN S	E	D	D	S
312816115505	PRAVEEN S	C	C	C	S

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OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of April / May Examination,2020 [R-2017].

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 02** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 115-B.E. Mechatronics Engineering

	Subject Code - >	BE8253	BE8261	GE8261	GE8291	GE8292	HS8251	MA8251	PH8251
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312819115001	AKAASH P	A+	O	O	A+	A+	A+	B+	B+
312819115002	ARUN KUMAR S	A+	O	O	A+	A+	B+	B+	B+
312819115003	BANDI JAGADEESH SURAJ	A	O	O	A+	A+	A+	B+	A+
312819115004	BHUVANESH V	A	O	O	A+	A+	A+	A	B
312819115005	BRAJESH KV	A+	O	O	A+	A+	A+	A+	B
312819115006	BRINDHA S	A+	O	O	A+	A+	A+	A+	A
312819115007	DERIK SAM S	B+	O	O	A	A	A	B	B+
312819115008	DEVANAND K	B+	O	O	A+	A+	A+	A	A
312819115009	DHANUSH KUMAR G	A+	O	O	A+	A	A+	A+	B+
312819115010	GOKUL K	A+	O	O	A+	A+	A	A+	A
312819115011	HARIPRIYA V	O	O	O	O	O	O	O	O
312819115012	JABEZ M	B	O	O	A	A+	A	A	B
312819115013	JAWAHAR B	A+	O	O	A+	A+	A	A+	A
312819115014	JONATHAN J	B+	O	O	A+	A+	A+	A+	B
312819115015	KEERTHANA A	O	O	O	O	O	O	O	O
312819115016	KISHORE L	B	O	O	A+	A	A+	B	B+
312819115017	NAVEEN R	B+	O	O	A+	A+	A+	A+	B
312819115018	NISHANTH A	A+	O	O	A+	A+	A+	A+	B
312819115019	PRAKASH KUMAR MP	A+	O	O	A+	A	A+	A	B+
312819115020	PRASANTH M	B+	O	O	A	A	B	B+	B+
312819115021	RAJESH K	A+	O	O	A+	A+	A+	A+	B+
312819115022	RANJITH KUMAR A	A	O	O	A+	A	A	A	B
312819115023	ROGER KEWIN S	A	O	O	A+	A+	A+	A	B
312819115024	ROHAN S	A+	O	O	A	A+	A+	A	B
312819115025	ROHITH B	B+	O	O	A+	A+	A+	B+	B+
312819115026	SANJAY KUMAR V	O	O	O	O	O	A+	O	O
312819115027	SAPTHAGIRISH V	A+	O	O	A+	A+	A+	A+	A+
312819115028	TRINIT LOWRAN E	B+	O	O	A+	A+	A+	A+	B
312819115029	VIDHYASAGAR N	A+	O	O	A+	A+	A	A+	B+
312819115030	VISHNU S	B+	O	O	A+	B	A+	A	B+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 04** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 115-B.E. Mechatronics Engineering

	Subject Code - >	HS8461	MA8452	ME8381	ME8392	ME8461	ME8492	MT8401	MT8411	MT8491
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312818115001	ADAIKKALAM RAJA S	O	A	O	A	O	A	B+	O	A+
312818115002	AJEETHVEERA J	O	O	O	O	O	O	O	O	O
312818115003	AKASH S	O	A+	O	A	O	A	A+	O	A+
312818115004	ARAVIND A	O	A+	O	A+	O	A+	A+	O	A+
312818115005	ASVIN R	O	O	O	A+	O	O	A+	O	O
312818115006	BERYL GNANA RAJ A	O	A+	O	A+	O	A	A	O	A
312818115007	CHANDRU T	A+	B	A+	B	O	B	B	O	B
312818115008	DASHVANTHRAJ K	A+	B	O	B+	O	B	B	O	B+
312818115010	DINESH S	O	O	O	O	O	O	O	O	O
312818115011	GOKULAKRISHNA M	O	A+	O	A+	O	A+	A+	O	A+
312818115012	GOKUL CHANDER MP	O	A+	O	A+	O	A	A	O	A+
312818115013	GOWTHAM V	O	A+	O	B+	O	A+	A	O	A+
312818115014	JACOB NISHANTH J	O	B+	O	A	O	B	B+	O	B+
312818115015	JANARTHANAN K	A+	B+	O	B+	A+	B+	B	A+	B
312818115016	KAMALESH J	O	A+	O	B+	O	A+	A+	O	A+
312818115017	KARTHICK E	O	A+	O	A	O	A	A	O	A+
312818115018	KARTHIKEYAN A	O	A+	O	A+	O	A+	A+	O	A+
312818115019	LEEBEN DAVIS M	A+	A	A+	A	O	B+	A	O	A+
312818115020	MAHESH S	O	A+	O	A+	O	A+	A+	O	A+
312818115021	MOHANA SUNDAR G	A+	A	O	B+	A+	B+	B	A+	B+
312818115022	MOHAN PRASATH R	O	B	O	A+	O	B+	B+	O	A+
312818115023	MONISH I	O	A+	O	A+	O	A+	A	O	A+
312818115024	NARENDAR K	O	A+	O	A+	O	A+	A+	O	A+
312818115025	PADMANABHAN P	O	A+	O	A+	O	A+	A	O	A+
312818115026	PARAMJITH SINGH R	O	B+	O	B+	A+	B+	B	O	B+
312818115027	PAVESH B V	O	B	A+	B+	A+	B+	B	O	A
312818115028	PRAGADESH GK	A+	B	A+	B+	A+	B	B	O	B+
312818115029	PRAVEEN KUMAR E	O	A	O	A	O	A	B	O	A
312818115031	RISHI RAGAV R	A+	B	A+	B	O	B	B	A+	B
312818115032	SABAREESHWARAN V	A+	B+	O	B	O	B	B+	O	B
312818115034	SANJAY R	O	A+	O	A+	O	A	A	O	A+
312818115035	SATHISH M	A+	B+	O	A	O	B	A	O	B+
312818115036	SATHISH KUMAR S	A+	B	O	B	A+	B	B	O	B+
312818115037	SHASEE A	O	A+	O	A+	O	A+	A+	O	A+
312818115038	SOWFIQ S	O	A+	O	A+	O	A+	A+	O	A+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312818115039	STEPHEN RAJ G R	O	A+	O	A+	O	A+	A	O	A+
312818115040	SURIYARAJ R	A+	B	A+	B	O	B	B	O	B
312818115041	SURYANARAYANAN R	O	A+	O	A+	O	A+	A	O	A+
312818115042	SURYA PRAKASH M	O	A	O	A+	O	A	A	O	A
312818115043	VIGNESH G	O	B	O	A	O	A	B	O	A+
312818115044	VIKRANT TIRKEY	O	A	O	A	O	A	B	O	A+
312818115045	VISWANATHAN M	O	A+	O	A+	O	A+	A+	O	A+
312818115046	YOGESH E	O	A+	O	A+	O	A	A	O	A
312818115301	ESWAR K	A+	B	O	B	O	B	B	A+	B
312818115303	SATHISH R	O	A+	O	A+	O	A	A+	O	A+
312818115304	SIVA KUMAR R	O	B+	O	A	O	B+	B	O	A
312818115305	VISHWAJITH SB	O	B	O	B	O	B	B	A+	B

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 06** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 115-B.E. Mechatronics Engineering

	Subject Code - >	GE8076	ME8091	ME8591	ME8593	ME8682	MG8591	MT8601	MT8602	MT8611	MT8612
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817115001	ABBAS ILYAS HAIDARI I		B	B+	B	O	B+	B	A	O	O
312817115002	ABINASH M	O	O	O	O	O	O	O	O	O	O
312817115003	AJITH ARAWINTH M	O	O	O	O	O	O	A+	O	O	O
312817115004	AKASH S	O	A	A+	A+	O	A+	O	O	O	O
312817115005	ARISTO BANCE X	A+	O	A+	A	O	A+	A	A+	O	O
312817115006	ARUN B		B+	O	B+	O	O	A	O	O	O
312817115007	ASHWIN K		A+	O	A	O	A+	A+	O	O	O
312817115008	ASWIN KUMAR R	O	A+	A	A+	O	A+	A+	O	O	O
312817115009	BARATHRAJ D	O	O	O	O	O	O	O	O	O	O
312817115010	DAMODHARAN S	O	A	O	A+	O	A+	A+	O	O	O
312817115012	EDWARD BUSH C K	A+	A+	A+	O	O	A+	A+	O	O	O
312817115013	GOKUL V		A+	A	A	O	A+	A+	O	O	O
312817115014	GOWSIHAN N	O	A	O	A+	O	O	O	O	O	O
312817115015	JAYARAM R		B	B+	B+	O	A+	B+	A+	O	O
312817115016	KARTHICK G	O	O	A+	A	O	A+	O	O	O	O
312817115017	MAHALAKSHMI S	A+	A	O	A	O	A+	A+	O	O	O
312817115018	METHUN RAJ M	O	O	O	O	O	O	O	O	O	O
312817115019	MOHAMMED JAFFAR SADIQ S M	O	O	O	A+	O	O	O	O	O	O
312817115020	RUBIN ROUSEVELT J	O	A+	O	O	O	O	O	O	O	O
312817115021	SANJURAJ S		A+	A+	A	O	A+	A+	A+	O	O
312817115022	SANTHANAKRISHNAN A		A	A+	B+	O	O	B+	A	O	O
312817115023	SANTHOSH B	O	O	O	O	O	O	O	O	O	O
312817115025	SATHISH R		B+	B+	B+	O	A	O	A+	O	O
312817115026	SRIDHAR J	O	A+	O	O	O	A+	A+	A+	O	O
312817115027	SUMITHRA B	O	O	O	O	O	O	O	O	O	O
312817115028	THARUN Y C		B+	A+	A+	A+	A	A	A+	O	O
312817115029	UPANRAJ T N	O	O	O	A+	O	O	O	O	O	O
312817115030	VENKATRAMANAN C		A+	A	B	O	A+	A	A+	O	O
312817115031	VIGNESH R		A	A+	B	O	A	A	A+	O	O
312817115033	VIGNESHVARAN D		B+	A	A	O	B+	B+	A+	O	O
312817115034	VIGNESHWAR G	O	O	O	A+	O	O	O	O	O	O
312817115035	VISHNU K	A+	O	O	A+	O	A+	O	O	O	O
312817115301	ABHISHEK SAGAR T P		A+	A+	A+	O	A+	A+	A+	O	O
312817115302	BALAJI S		A+	A	B	A+	A	B	A+	O	O

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312817115901	ABISHEK B B		B	B+	A	O	A	B	A+	O	O

W - Withdrawal I - Inadequate Attendance

WH1 - Withheld for Suspected Malpractice WH(others) - Withheld for want of Clarification,approval,etc.

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 07** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 115-B.E. Mechatronics Engineering

	Subject Code - >	EE6007	ME6602	MT6002	MT6701	MT6702	MT6703	MT6711	MT6712	MT6713
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312814115002	AKASH D	U				UA				
312814115701	SELVA SANJEEV RAI P		UA	UA	UA					
312815115046	SURENDHAR S J	U	E	E	E	C	U			
312815115303	RAGHAVENDRA B	U			UA	UA	UA			
312816115001	AJISH K	U	C	D	C	C	C	S	S	S
312816115002	AKILAN A	D	C	C	B	A	B	A	S	A
312816115003	AKILAN M	C	C	B	B	S	A	A	S	S
312816115004	ANTONY JOHN E	D	B	C	C	S	A	S	S	S
312816115006	ASWITH L	U	E	U	E	U	E	C	C	B
312816115007	BHARATH KARTHIK M	E	D	U	E	C	E	A	S	S
312816115008	DAYALAN J	B	C	U	C	A	B	A	S	A
312816115009	DWARAKESH K	C	E	C	D	B	C	S	S	S
312816115010	FERNANDO JOY S	U	U	U	U	D	U	B	C	C
312816115011	GREESE GILBERT VIJAY J	E	E	D	D	B	C	A	A	A
312816115012	JAISURIYA V	E	U	U	E	C	E	A	A	A
312816115013	JANAKI RAMAN T	B	C	C	C	A	B	S	S	S
312816115014	KALAIVANAN J	B	C	E	B	B	B	S	S	S
312816115015	KARAN E	B	C	D	C	B	B	S	S	S
312816115016	KISHORE KUMAR S	A	C	A	B	B	A	S	S	S
312816115017	KIZHAKKOOTT SARATH SREEDHARAN	A	C	B	C	A	B	S	S	S
312816115018	LENIN K	B	C	C	B	A	B	S	S	S
312816115019	MAGESH KUMAR S	E	E	E	D	B	C	S	S	A
312816115020	MATHAN S	C	C	D	B	B	B	S	S	S
312816115023	NAVEENKUMAR S	D	C	C	C	B	B	S	A	S
312816115024	PANI KINGSON A	U	D	U	E	C	D	S	S	S
312816115025	POOVARASAN R	D	C	C	C	B	C	A	A	S
312816115026	PRASANTH K	U	U	UA	U	U	U	A	A	B
312816115027	PRAVEEN KUMAR PATEL B	C	C	E	C	A	B	S	S	S
312816115028	RAGOTHAMAN S	B	C	B	C	B	B	A	A	S
312816115029	RAMANAN R	E	C	C	E	D	D	A	S	S
312816115030	RAMKUMAR P	D	C	B	C	B	C	S	S	S
312816115031	RAM VIGNESH A	E	E	B	C	B	C	S	S	S
312816115032	RUTHRA P	C	B	B	C	A	C	A	S	S

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312816115033	SABARINATHAN J	B	B	B	B	A	C	S	S	S
312816115034	SANTHOSH KUMAR S	B	B	A	B	A	B	S	S	S
312816115035	SATHISWARABALAJE R	D	B	C	C	S	C	S	S	S
312816115036	SHARAN KUMAR J	B	B	B	C	A	C	C	S	S
312816115037	SHIVAANI DEVI R	B	A	B	B	S	B	S	S	S
312816115038	SIDHARTHAN R	C	B	C	C	B	C	S	S	S
312816115039	SUDHARSAN M	U	U	UA	U	U	U	A	C	B
312816115040	SURENDAR S	E	C	E	E	B	C	S	S	S
312816115041	SURYA R	E	B	D	C	A	C	A	A	S
312816115042	VENKATARAMANAN S	E	D	UA	E	B	C	A	A	A
312816115043	VENKATESH C B	C	B	B	C	A	B	S	S	S
312816115044	VISHWADATH A	C	A	C	C	B	B	S	S	S
312816115045	YOGA RAJ V	E	C	E	E	D	E	A	A	A
312816115301	GENU RAJ R	E	C	E	E	C	E	A	A	A
312816115302	MARIA ANTONY DENISON T	U	E	E	E	U	E	A	C	C
312816115303	MOHAMED ABUDHAHIRDEEN VM	U	E	E	E	C	E	A	A	S
312816115304	MOKESH KANNAN S	UA	U	UA	UA	UA	UA	C	C	C
312816115305	VENKATESH K	D	D	E	E	C	E	A	A	S
312816115503	VIDHYA SRI M	B	C	B	C	A	B	S	S	S
312816115504	MAGESHWARAN S	U	U	E	U	U	E	B	B	B
312816115505	PRAVEEN S	UA	UA	UA	UA	UA	UA	UA	UA	UA

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 01** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 115-B.E. Mechatronics Engineering

	Subject Code - >	BS8161	CY8151	GE8151	GE8152	GE8161	HS8151	MA8151	PH8151
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817115901	ABISHEK B B			B					
312818115007	CHANDRU T							UA	
312818115008	DASHVANTHRAJ K							B	
312818115015	JANARTHANAN K							U	UA
312818115016	KAMALESH J							B+	
312818115026	PARAMJITH SINGH R			U				U	U
312818115027	PAVESH B V			U					
312818115028	PRAGADESH GK			UA					
312818115031	RISHI RAGAV R		B					U	U
312818115032	SABAREESHWARAN V							U	
312818115036	SATHISH KUMAR S		B	U				U	U
312818115040	SURIYARAJ R		U	U	B			U	UA
312818115041	SURYANARAYANAN R							B	
312818115046	YOGESH E							U	
312819115001	AKAASH P	A+	B	U	A	A+	B+	B	U
312819115002	ARUN KUMAR S	A	B	U	B+	A+	U	B	B
312819115003	BANDI JAGADEESH SURAJ	A+	B	B	B	A+	B	U	U
312819115004	BHUVANESH V	A+	B	U	U	A+	U	B	B
312819115005	BRAJESH KV	A+	B+	B	U	O	A	B	B
312819115006	BRINDHA S	A+	A	U	B	O	B+	B	B+
312819115007	DERIK SAM S	A	U	U	B	A+	B	U	U
312819115008	DEVANAND K	A+	U	U	B+	O	B+	U	U
312819115009	DHANUSH KUMAR G	O	B+	U	O	A+	U	U	B+
312819115010	GOKUL K	A+	B+	B	B+	O	U	A	B
312819115011	HARIPRIYA V	O	A	B+	B+	O	U	A+	A
312819115012	JABEZ M	A	B	U	B+	A+	B	B	B
312819115013	JAWAHAR B	O	B+	U	A	O	B	B	B+
312819115014	JONATHAN J	A	B+	U	U	O	B	A	A
312819115015	KEERTHANA A	O	A+	B	A+	O	B+	A	A+
312819115016	KISHORE L	A+	B+	B	B+	A+	A	B	B
312819115017	NAVEEN R	A	B+	B	B	A	U	B	B
312819115018	NISHANTH A	A+	B+	U	A	A+	B	B	U
312819115019	PRAKASH KUMAR MP	A+	B+	U	U	A+	B+	U	B+
312819115020	PRASANTH M	A	B+	U	B	A+	U	U	B
312819115021	RAJESH K	O	B+	U	A	O	B+	U	U

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312819115022	RANJITH KUMAR A	A+	B+	U	U	O	B	U	B
312819115023	ROGER KEWIN S	O	B+	B	A	O	B+	B	B
312819115024	ROHAN S	A+	A	U	B+	A+	B+	B	B
312819115025	ROHITH B	A+	B+	U	A+	O	B+	U	U
312819115026	SANJAY KUMAR V	O	A	B	O	O	B+	A+	B+
312819115027	SAPTHAGIRISH V	A+	B	U	A+	O	B+	B	B
312819115028	TRINIT LOWRAN E	O	B	B	B	A+	B+	B	B
312819115029	VIDHYASAGAR N	O	A	B	A+	A	B+	B	B+
312819115030	VISHNU S	A+	B+	B	B+	A+	B	U	B

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 03** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 115-B.E. Mechatronics Engineering

	Subject Code - >	CE8381	CE8394	CE8395	EC8392	HS8381	MA8353	MT8301	MT8302	MT8311
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817115001	ABBAS ILYAS HAIDARI I			UA			U			
312817115007	ASHWIN K						B			
312817115022	SANTHANAKRISHNAN A						U			
312817115030	VENKATRAMANAN C				U		U			
312817115031	VIGNESH R		B		B+					
312817115033	VIGNESHVARAN D		U	U	UA					
312817115301	ABHISHEK SAGAR T P				B+					
312817115302	BALAJI S		U	U	U		U			
312817115901	ABISHEK B B				U		U			
312818115001	ADAIKKALAM RAJA S	A+	U	B	U	O	B	U	B	A+
312818115002	AJEETHVEERA J	O	B+	B+	A	O	B+	B+	B+	O
312818115003	AKASH S	O	B	U	B	O	B	B	B+	A+
312818115004	ARAVIND A	A+	A	B	B+	O	B	B	A	A+
312818115005	ASVIN R	A+	B+	B+	A	O	A+	B+	A	O
312818115006	BERYL GNANA RAJ A	A+	B	U	B+	O	B+	B	B+	O
312818115007	CHANDRU T	UA	U	U	U	O	U	U	U	UA
312818115008	DASHVANTHRAJ K	A+	U	B	U	O	B	U	B	A+
312818115010	DINESH S	O	A+	B+	B	O	A	A	A+	O
312818115011	GOKULAKRISHNA M	O	B+	B+	U	O	B+	B	A	O
312818115012	GOKUL CHANDER MP	O	A	B	B	O	B	B	A	O
312818115013	GOWTHAM V	O	B	U	B+	O	U	B	B+	O
312818115014	JACOB NISHANTH J	O	U	B	B	O	U	B	B+	A+
312818115015	JANARTHANAN K	A+	U	U	U	O	U	U	B	A+
312818115016	KAMALESH J	A+	B	B	U	O	U	B	B	O
312818115017	KARTHICK E	A+	B	B	B+	O	B	B	A	O
312818115018	KARTHIKEYAN A	A+	B	U	B+	O	B	B	B+	A+
312818115019	LEEBEN DAVIS M	A	B	B	U	O	U	B	B+	A+
312818115020	MAHESH S	A+	B+	U	B+	O	U	B	B+	A+
312818115021	MOHANA SUNDAR G	A+	U	U	B	O	B	B	B	O
312818115022	MOHAN PRASATH R	A+	B	U	U	O	B	B	B+	A+
312818115023	MONISH I	O	B	U	B	O	B	B	B+	O
312818115024	NARENDAR K	O	B+	B	B	O	U	B	B	O
312818115025	PADMANABHAN P	O	A+	B	B+	O	B	B	B+	O
312818115026	PARAMJITH SINGH R	A+	U	U	U	O	U	B	B	A+
312818115027	PAVESH B V	O	B	U	U	O	U	B	B+	A+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312818115028	PRAGADESH GK	B+	B	U	U	O	B	U	U	A
312818115029	PRAVEEN KUMAR E	O	B	U	B	O	U	B	B	A+
312818115031	RISHI RAGAV R	A+	U	U	B+	O	U	U	B	A+
312818115032	SABAREESHWARAN V	O	B	U	U	O	U	U	U	A
312818115034	SANJAY R	O	B	B	B	O	B+	B	B+	O
312818115035	SATHISH M	A+	U	U	U	O	U	U	B	A
312818115036	SATHISH KUMAR S	O	U	U	U	O	U	B	U	A
312818115037	SHASEE A	O	A	U	B+	O	B	B	A	A
312818115038	SOWFIQ S	A+	A	B	A	O	B	B	A	O
312818115039	STEPHEN RAJ G R	O	B	B+	B	O	B+	B	A	O
312818115040	SURIYARAJ R	B+	U	U	U	O	U	U	U	A
312818115041	SURYANARAYANAN R	O	B	B+	B	O	B	B	B	A+
312818115042	SURYA PRAKASH M	A+	B	B	B	O	U	B	B	A
312818115043	VIGNESH G	A+	B	U	B+	O	U	B	B	A+
312818115044	VIKRANT TIRKEY	A+	U	U	B	O	U	B	B	A
312818115045	VISWANATHAN M	O	A	U	B	O	B	B	A	O
312818115046	YOGESH E	A+	B	U	B	O	B	B	B+	A+
312818115301	ESWAR K	A	U	U	U	O	U	U	U	A
312818115302	SARAVANAN K	O	U	U	U	O	U	U	B	A+
312818115303	SATHISH R	O	B	B	U	O	U	B	B+	A
312818115304	SIVA KUMAR R	O	U	U	U	O	U	B	B+	A
312818115305	VISHWAJITH SB	A	U	U	U	O	U	U	U	B+

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 05** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 115-B.E. Mechatronics Engineering

	Subject Code - >	EC8391	EE8552	HS8581	ME8481	ME8594	MT8511	MT8512	MT8591	OMF551
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817115001	ABBAS ILYAS HAIDARI I	B	U	O	B+	U	B	A	B	B
312817115002	ABINASH M	A+	B+	A	O	O	O	O	A+	A
312817115003	AJITH ARAWINTH M	A	A	A+	O	B+	O	O	A+	B+
312817115004	AKASH S	B	B	A	O	B+	A+	O	A	B+
312817115005	ARISTO BANCE X	B	B	A	O	B	A+	O	B+	B
312817115006	ARUN B	B	B	A+	A+	B	A+	O	A+	B
312817115007	ASHWIN K	B	B+	O	A+	B	A+	A+	A+	B
312817115008	ASWIN KUMAR R	B	B	O	O	A	O	O	A+	B+
312817115009	BARATHRAJ D	A	B+	A+	O	B	O	O	A+	B
312817115010	DAMODHARAN S	B+	B+	A+	O	B+	O	O	A	B+
312817115012	EDWARD BUSH C K	B+	B	A	O	A	A+	O	A+	B
312817115013	GOKUL V	B+	B	A	A+	A+	A+	O	A	U
312817115014	GOWSIHAN N	A+	B+	A	O	A	O	O	A	A
312817115015	JAYARAM R	B	B	A+	A	B	B+	A+	B+	U
312817115016	KARTHICK G	A	B	A	O	B	O	O	B+	B+
312817115017	MAHALAKSHMI S	A	B	A	O	B+	A+	O	A	B+
312817115018	METHUN RAJ M	A	B	O	O	B+	O	O	A+	B+
312817115019	MOHAMMED JAFFAR SADIQ S M	A+	B+	A+	O	B+	O	O	A+	B+
312817115020	RUBIN ROUSEVELT J	A	A	A+	O	B+	O	O	A+	B+
312817115021	SANJURAJ S	B+	B	A	A+	U	A+	O	A	B
312817115022	SANTHANAKRISHNAN A	B+	B	A	O	U	O	O	A	B+
312817115023	SANTHOSH B	B+	B	A+	O	A+	O	O	A	B+
312817115025	SATHISH R	B	B	A+	A+	B+	A+	O	A	B
312817115026	SRIDHAR J	B	B	A+	O	B	O	O	A+	B
312817115027	SUMITHRA B	B+	B+	A+	O	B	O	O	A+	B+
312817115028	THARUN Y C	B	B+	A+	A+	B	O	O	A	B
312817115029	UPANRAJ T N	B+	A	A+	O	A	O	O	A+	A
312817115030	VENKATRAMANAN C	U	B	A+	A	U	B+	O	B+	B
312817115031	VIGNESH R	B	B	A	A+	B	B+	O	U	A
312817115033	VIGNESHVARAN D	B	A	A	A	U	A	O	B+	B
312817115034	VIGNESHWAR G	A+	A+	A+	O	B+	O	O	A	A
312817115035	VISHNU K	A	B	A	O	B	O	O	A	A
312817115301	ABHISHEK SAGAR T P	B+	B	A	A+	B	A+	O	B+	B+
312817115302	BALAJI S	U	U	A	A	U	B	A	B	B

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

312817115901	ABISHEK B B	B+	U	A	A	U	B+	A+	B	U

W - Withdrawal I - Inadequate Attendance

WH1 - Withheld for Suspected Malpractice WH(others) - Withheld for want of Clarification,approval,etc.

ME6505 **DYNAMICS OF MACHINES** **L T P C**
3 0 0 3

OBJECTIVES:

- To understand the force-motion relationship in components subjected to external forces and analysis of standard mechanisms.
- To understand the undesirable effects of unbalances resulting from prescribed motions in mechanism.
- To understand the effect of Dynamics of undesirable vibrations.
- To understand the principles in mechanisms used for speed control and stability control.

UNIT I FORCE ANALYSIS 9

Dynamic force analysis – Inertia force and Inertia torque– D Alembert's principle –Dynamic Analysis in reciprocating engines – Gas forces – Inertia effect of connecting rod– Bearing loads – Crank shaft torque – Turning moment diagrams –Fly Wheels – Flywheels of punching presses- Dynamics of Cam-follower mechanism.

UNIT II BALANCING 9

Static and dynamic balancing – Balancing of rotating masses – Balancing a single cylinder engine – Balancing of Multi-cylinder inline, V-engines – Partial balancing in engines – Balancing of linkages – Balancing machines-Field balancing of discs and rotors.

UNIT III SINGLE DEGREE FREE VIBRATION 9

Basic features of vibratory systems – Degrees of freedom – single degree of freedom – Free vibration – Equations of motion – Natural frequency – Types of Damping – Damped vibration– Torsional vibration of shaft – Critical speeds of shafts – Torsional vibration – Two and three rotor torsional systems.

UNIT IV FORCED VIBRATION 9

Response of one degree freedom systems to periodic forcing – Harmonic disturbances –Disturbance caused by unbalance – Support motion –transmissibility – Vibration isolation vibration measurement.

UNIT V MECHANISM FOR CONTROL 9

Governors – Types – Centrifugal governors – Gravity controlled and spring controlled centrifugal governors – Characteristics – Effect of friction – Controlling force curves. Gyroscopes –Gyroscopic forces and torques – Gyroscopic stabilization – Gyroscopic effects in Automobiles, ships and airplanes.

TOTAL : 45 PERIODS

OUTCOMES:

- Upon completion of this course, the Students can able to predict the force analysis in mechanical system and related vibration issues and can able to solve the problem

TEXT BOOK:

1. Uicker, J.J., Pennock G.R and Shigley, J.E., "Theory of Machines and Mechanisms" ,3rd Edition, Oxford University Press, 2009.
2. Rattan, S.S, "Theory of Machines", 3rd Edition, Tata McGraw-Hill, 2009

REFERENCES:

1. Thomas Bevan, "Theory of Machines", 3rd Edition, CBS Publishers and Distributors, 2005.
2. Cleghorn. W. L, "Mechanisms of Machines", Oxford University Press, 2005
3. Benson H. Tongue, "Principles of Vibrations", Oxford University Press, 2nd Edition, 2007
4. Robert L. Norton, "Kinematics and Dynamics of Machinery", Tata McGraw-Hill, 2009.
5. Allen S. Hall Jr., "Kinematics and Linkage Design", Prentice Hall, 1961

6. Ghosh. A and Mallick, A.K., “Theory of Mechanisms and Machines", Affiliated East-West Pvt. Ltd., New Delhi, 1988.
7. Rao.J.S. and Dukkipati.R.V. "Mechanisms and Machine Theory", Wiley-Eastern Ltd., New Delhi, 1992.
8. John Hannah and Stephens R.C., "Mechanics of Machines", Viva Low-Prices Student Edition, 1999.
9. Grover. G.T., “Mechanical Vibrations”, Nem Chand and Bros., 1996
10. William T. Thomson, Marie Dillon Dahleh, Chandramouli Padmanabhan, “Theory of Vibration with Application”, 5th edition, Pearson Education, 2011
11. V.Ramamurthi, "Mechanics of Machines", Narosa Publishing House, 2002.
12. Khurmi, R.S.,”Theory of Machines”, 14th Edition, S Chand Publications, 2005.

EC6405 CONTROL SYSTEM ENGINEERING L T P C
3 0 0 3

OBJECTIVES:

- To introduce the elements of control system and their modeling using various Techniques.
- To introduce methods for analyzing the time response, the frequency response and the stability of systems
- To introduce the state variable analysis method

UNIT I CONTROL SYSTEM MODELING 9

Basic Elements of Control System – Open loop and Closed loop systems - Differential equation - Transfer function, Modeling of Electric systems, Translational and rotational mechanical systems - Block diagram reduction Techniques - Signal flow graph

UNIT II TIME RESPONSE ANALYSIS 9

Time response analysis - First Order Systems - Impulse and Step Response analysis of second order systems - Steady state errors – P, PI, PD and PID Compensation, Analysis using MATLAB

UNIT III FREQUENCY RESPONSE ANALYSIS 9

Frequency Response - Bode Plot, Polar Plot, Nyquist Plot - Frequency Domain specifications from the plots - Constant M and N Circles - Nichol’s Chart - Use of Nichol’s Chart in Control System Analysis. Series, Parallel, series-parallel Compensators - Lead, Lag, and Lead Lag Compensators, Analysis using MATLAB.

UNIT IV STABILITY ANALYSIS 9

Stability, Routh-Hurwitz Criterion, Root Locus Technique, Construction of Root Locus, Stability, Dominant Poles, Application of Root Locus Diagram - Nyquist Stability Criterion - Relative Stability, Analysis using MATLAB

UNIT V STATE VARIABLE ANALYSIS 9

State space representation of Continuous Time systems – State equations – Transfer function from State Variable Representation – Solutions of the state equations - Concepts of Controllability and Observability – State space representation for Discrete time systems. Sampled Data control systems – Sampling Theorem – Sampler & Hold – Open loop & Closed loop sampled data systems.

TOTAL: 45 PERIODS

OUTCOMES:

Upon completion of the course, students will be able to:

- Perform time domain and frequency domain analysis of control systems required for stability analysis.
- Design the compensation technique that can be used to stabilize control systems.

TEXTBOOK:

1. J.Nagrath and M.Gopal, “Control System Engineering”, New Age International Publishers, 5th Edition, 2007.

REFERENCES:

1. Benjamin.C.Kuo, “Automatic control systems”, Prentice Hall of India, 7th Edition,1995.
2. M.Gopal, “Control System – Principles and Design”, Tata McGraw Hill, 2nd Edition, 2002.
3. Schaum’s Outline Series, “Feed back and Control Systems” Tata Mc Graw-Hill, 2007.
4. John J.D’Azzo & Constantine H.Houpis, “Linear Control System Analysis and Design’”, Tata Mc Graw-Hill, Inc., 1995.
5. Richard C. Dorf and Robert H. Bishop, “Modern Control Systems”, Addison – Wesley, 1999.

ME6352 MANUFACTURING TECHNOLOGY L T P C 3 0 0 3

OBJECTIVES:

- The automobile components such as piston, connecting rod, crankshaft, engine block, front axle, frame, body etc., are manufactured by various types of production processes involving casting, welding, machining, metal forming, power metallurgy etc. Hence B.E. Automobile Engineering students must study this course Production Technology.

UNIT I CASTING 8

Casting types, procedure to make sand mould, types of core making, moulding tools, machine moulding, special moulding processes – CO2 moulding; shell moulding, investment moulding, permanent mould casting, pressure die casting, centrifugal casting, continuous casting, casting defects.

UNIT II WELDING 8

Classification of welding processes. Principles of Oxy-acetylene gas welding. A.C metal arc welding, resistance welding, submerged arc welding, tungsten inert gas welding, metal inert gas welding, plasma arc welding, thermit welding, electron beam welding, laser beam welding, defects in welding, soldering and brazing.

UNIT III MACHINING 13

General principles (with schematic diagrams only) of working and commonly performed operations in the following machines: Lathe, Shaper, Planer, Horizontal milling machine, Universal drilling machine, Cylindrical grinding machine, Capstan and Turret lathe. Basics of CNC machines. General principles and applications of the following processes: Abrasive jet machining, Ultrasonic machining, Electric discharge machining, Electro chemical machining, Plasma arc machining, Electron beam machining and Laser beam machining.

UNIT IV FORMING AND SHAPING OF PLASTICS 7

Types of plastics - Characteristics of the forming and shaping processes – Moulding of Thermoplastics – Working principles and typical applications of - Injection moulding – Plunger and screw machines – Blow moulding – Rotational moulding – Film blowing – Extrusion - Typical industrial applications – Thermoforming – Processing of Thermosets – Working principles and typical applications - Compression moulding – Transfer moulding – Bonding of Thermoplastics – Fusion and solvent methods – Induction and Ultrasonic methods

UNIT V METAL FORMING AND POWDER METALLURGY 9

Principles and applications of the following processes: Forging, Rolling, Extrusion, Wire drawing and Spinning, Powder metallurgy – Principal steps involved advantages, disadvantages and limitations of powder metallurgy.

TOTAL: 45 PERIODS

OUTCOMES:

- The Students can able to use different manufacturing process and use this in industry for component production

TEXT BOOKS:

1. Hajra Choudhury, “Elements of Workshop Technology”, Vol. I and II, Media Promoters and Publishers Pvt., Ltd., Mumbai, 2005.
2. Nagendra Parashar B.S. and Mittal R.K., “Elements of Manufacturing Processes”, Prentice-Hall of India Private Limited, 2007.

REFERENCES:

1. Serope Kalpajian, Steven R.Schmid, “Manufacturing Processes for Engineering Materials”, 4th Edition, Pearson Education, Inc. 2007.
2. Jain. R.K. and S.C. Gupta, “Production Technology”, Khanna Publishers. 16th Edition, 2001.
3. “H.M.T. Production Technology – Handbook”, Tata McGraw-Hill, 2000.
4. Roy. A. Linberg, “Process and Materials of Manufacture”, PHI, 2000.
5. Adithan. M and A.B. Gupta, “Manufacturing Technology”, New Age, 2006.

ME6504 METROLOGY AND MEASUREMENTS L T P C
3 0 0 3

OBJETCTIVES:

- To provide knowledge on various Metrological equipments available to measure the dimension of the components.
- To provide knowledge on the correct procedure to be adopted to measure the dimension of the components.

UNIT I .BASICS OF METROLOGY 5

Introduction to Metrology – Need – Elements – Work piece, Instruments – Persons – Environment – their effect on Precision and Accuracy – Errors – Errors in Measurements – Types – Control – Types of standards.

UNIT II LINEAR AND ANGULAR MEASUREMENTS 10

Linear Measuring Instruments – Evolution – Types – Classification – Limit gauges – gauge design – terminology – procedure – concepts of interchange ability and selective assembly – Angular measuring instruments – Types – Bevel protractor clinometers angle gauges, spirit levels sine bar – Angle alignment telescope – Autocollimator – Applications.

UNIT III ADVANCES IN METROLOGY 12

Basic concept of lasers Advantages of lasers – laser Interferometers – types – DC and AC Lasers interferometer – Applications – Straightness – Alignment. Basic concept of CMM – Types of CMM – Constructional features – Probes – Accessories – Software – Applications – Basic concepts of Machine Vision System – Element – Applications.

UNIT IV FORM MEASUREMENT 10

Principles and Methods of straightness – Flatness measurement – Thread measurement, gear measurement, surface finish measurement, Roundness measurement – Applications.

UNIT V MEASUREMENT OF POWER, FLOW AND TEMPERATURE 8

Force, torque, power - mechanical , Pneumatic, Hydraulic and Electrical type. Flow measurement: Venturimeter, Orifice meter, rotameter, pitot tube – Temperature: bimetallic strip, thermocouples, electrical resistance thermometer – Reliability and Calibration – Readability and Reliability.

TOTAL : 45 PERIODS

OUTCOMES:

- Upon completion of this course, the Students can demonstrate different measurement technologies and use of them in Industrial Components

TEXT BOOKS:

1. Jain R.K. “Engineering Metrology”, Khanna Publishers, 2005.
2. Gupta. I.C., “Engineering Metrology”, Dhanpatrai Publications, 2005.

REFERENCES:

1. Shot bolt, “Metrology for Engineers”, McGraw Hill, 1990.
2. Backwith, Marangoni, Lienhard, “Mechanical Measurements”, Pearson Education , 2006.

ME6503 DESIGN OF MACHINE ELEMENTS L T P C
3 0 0 3

OBJECTIVES:

- To familiarize the various steps involved in the Design Process
- To understand the principles involved in evaluating the shape and dimensions of acomponent to satisfy functional and strength requirements.
- To learn to use standard practices and standard data
- To learn to use catalogues and standard machine components
  (Use of P S G Design Data Book is permitted)

UNIT I STEADY STRESSES AND VARIABLE STRESSES IN MACHINE MEMBERS 10

Introduction to the design process - factors influencing machine design, selection of materials based on mechanical properties - Preferred numbers, fits and tolerances – Direct, Bending and torsional stress equations – Impact and shock loading – calculation of principle stresses for various load combinations, eccentric loading – curved beams – crane hook and ‘C’ frame- Factor of safety - theories of failure – Design based on strength and stiffness – stress concentration – Design for variable loading.

UNIT II SHAFTS AND COUPLINGS 8

Design of solid and hollow shafts based on strength, rigidity and critical speed – Keys, keyways and splines – crankshafts - Rigid and flexible couplings

UNIT III TEMPORARY AND PERMANENT JOINTS 9

Threaded fastners - Bolted joints including eccentric loading, Knuckle joints, Cotter joints – Welded joints, riveted joints for structures - theory of bonded joints.

UNIT IV ENERGY STORING ELEMENTS AND ENGINE COMPONENTS 9

Various types of springs, optimization of helical springs - rubber springs - Flywheels considering stresses in rims and arms for engines and punching machines- Connecting Rods and crank shafts.

UNIT V BEARINGS 9

Sliding contact and rolling contact bearings - Hydrodynamic journal bearings, Sommerfeld Number, Raimondi and Boyd graphs, -- Selection of Rolling Contact bearings.

TOTAL: 45 PERIODS

OUTCOMES:

- Upon completion of this course, the students can able to successfully design engine components

TEXT BOOKS:

1. Bhandari V, “Design of Machine Elements”, 3rd Edition, Tata McGraw-Hill Book Co, 2010.
2. Joseph Shigley, Charles Mischke, Richard Budynas and Keith Nisbett “Mechanical Engineering Design”, 8th Edition, Tata McGraw-Hill, 2008.

REFERENCES:

1. Sundararajamoorthy T. V. Shanmugam .N, “Machine Design”, Anuradha Publications, Chennai, 2003.
2. Robert C. Juvinall and Kurt M. Marshek, “Fundamentals of Machine Design”,4thEdition,Wiley, 2005
3. Alfred Hall, Halowenko, A and Laughlin, H., “Machine Design”, Tata McGraw-Hill BookCo.(Schaum’s Outline), 2010
4. Bernard Hamrock,Steven Schmid,Bo Jacobson, “Fundamentals of Machine Elements”,2nd Edition, Tata McGraw-Hill Book Co., 2006.
5. Orthwein W, “Machine Component Design”, Jaico Publishing Co, 2003.
6. Ansel Ugural, “Mechanical Design – An Integral Approach", 1st Edition, Tata McGraw-HillBook Co, 2003.
7. Merhyle F. Spotts, Terry E. Shoup and Lee E. Hornberger, “Design of Machine Elements” 8th Edition, Prentice Hall, 2003.

MT6501 SENSORS AND SIGNAL PROCESSING L T P C
3 0 0 3

OBJECTIVES:

- Students will be exposed to basics of sensors and the methods of processing their signals.

UNIT I SCIENCE OF MEASUREMENT 9

Units and Standards – Calibration techniques –Errors in Measurements – Generalized Measurement System – Static and dynamic characteristics of transducers – Generalized Performance of Zero Order and First Order Systems - Response of transducers to different time varying inputs – Classification of transducers

UNIT II MECHANICAL MEASUREMENTS 9

Temperature: Filled thermometer – Bimetallic thermometer – monometers – elastic transducers – bourdon gauge – bellows – diaphragm. Vacuum: McLeod gauge, thermal conductivity gauge – Ionization gauge, flow measurement: orifice, venture, nozzle, pilot tube, turbine flow meter, hot wire anemometer.’

UNIT III ELECTRICAL MEASUREMENTS 9

Resistive transducers – Potentiometer– RTD – Thermistor – Thermocouple – Strain gauges – use in displacement, temperature, force measurement – Inductive transducer – LVDT – RVDT – use in displacement – Capacitive transducer – Piezo electric transducer – Digital displacement transducers.

UNIT IV SMART SENSORS 9

Radiation Sensors - Smart Sensors - Film sensor, MEMS & Nano Sensors – applications - Automobile, Aerospace, Home appliances, Manufacturing, Medical diagnostics, Environmental monitoring.

UNIT V SIGNAL CONDITIONING AND DATA ACQUISITION 9

Amplification – Filtering – Sample and Hold circuits –Data Acquisition: Single channel and multi channel data acquisition – Data logging.

TOTAL: 45 PERIODS

OUTCOMES:

- The students will be able to use Sensors, various electrical and mechanical instruments in industries.

TEXT BOOKS:

1. Doebelin. E. O., "Measurement Systems – Applications and Design", Tata McGraw Hill, 1992
2. Patranabis. D, “Sensors and Transducers”, 2nd Edition PHI, New Delhi, 2003.

REFERENCES:

1. Ian SinclaIr .R "Sensors and transducers", Newnes ,Elaiver Indian print 2011.
2. Beckwith, Marangoni and Lienhard, "Mechanical Measurements", Addison Wesley, 2000..
3. Venkatesan. S.P, "Mechanical Measurements", Ane Books Pvt Ltd, India 2008.

MT6601 MICROCONTROLLER AND PLC L T P C
3 0 0 3

OBJECTIVES:

- To introduce the basic features, programming methods and applications of Micro controllers .The design of systems using PLC is introduced in detail.

UNIT I INTRODUCTION TO MICROCONTROLLER 9

8051 Architecture:– Memory map - Addressing modes, I/O Ports –Counters and Timers – Serial data - I/O – Interrupts –Instruction set,, Data transfer instructions, Arithmetic and Logical Instructions, Jump and Call Instructions , Assembly Language Programming tools.

UNIT II MICROCONTROLLER PROGRAMMING 9

8051 Assembly Language Programming- Block transfer, arithmetic operations, Code conversion, Time delay generation, Interrupt programming, Lookup table techniques

UNIT III MICROCONTROLLER APPLICATIONS 8

Interfacing of Keyboards – Interfacing of Display Devices – Pulse measurement – Analog to Digital and Digital to Analog Converter – Interfacing Hardware Circuit – Serial Data Communication – Network Configuration.

UNIT IV PROGRAMMABLE LOGIC CONTROLLERS 9

Introduction — Principles of operation – PLC Architecture and specifications – PLC hardware components Analog & digital I/O modules , CPU & memory module – Programming devices – PLC ladder diagram, Converting simple relay ladder diagram in to PLC relay ladder diagram. PLC programming Simple instructions – Manually operated switches – Mechanically operated a Proximity switches - Latching relays,

UNIT V APPLICATIONS OF PROGRAMMABLE LOGIC CONTROLLERS. 9

Timer instructions - On delay, Off delay, Cyclic and Retentive timers, Up /Down Counters, control instructions – Data manipulating instructions, math instructions; Applications of PLC – Simple materials handling applications, Automatic control of warehouse door, Automatic lubrication of supplier Conveyor belt, motor control, Automatic car washing machine, Bottle label detection and process control application.

TOTAL : 45 PERIODS

OUTCOMES:

- The students will learn the theory, programming and application of microcontroller And design of systems using Programmable Logic Controllers

TEXT BOOKS:

1. Muhammad Ali Mazdi ,J.G.Mazdi & R.D.McKinlay “The 8051 Microcontroller& Embedded systems Using assembly & C “ 2nd Edition Pearson Education , Inc ,2006
2. Udayasankara.v & Mallikarjunaswamy .M.S ,’8051 Microcontroller, Hardware, Software & Applications ,Tata McGraw Hill Education Pvt Limited. New Delhi ,2009.
3. Gary Dunning , ‘Introduction to Programmable Logic Controllers‘’ Thomson Learning, 2001.

REFERENCES:

1. Singh. B.P., "Microprocessors and Microcontrollers", Galcotia Publications (P) Ltd, First edition, New Delhi, 1997.
2. Parr, "Programmable Controllers: An Engineers Guide", 3rd Edition, Elsevier, Indian Reprint, 2013
3. Valdes-Perez, Microcontrollers: Fundamentals and Applications with PIC, Taylor & Francis, Indian Reprint, 2013.
4. Bolton , "Programmable Logic Controllers” 5th Edition Newnes, ,2009

MT6602 APPLIED HYDRAULICS AND PNEUMATICS

L	T	P	C
3	0	0	3

OBJECTIVES:

- This course will give an appreciation of the fundamental principles, design and operation of hydraulic and pneumatic components and systems and their application in manufacturing and mechanical systems.

UNIT I FLUID POWER PRINCIPLES AND HYDRAULIC PUMPS 9

Introduction to Fluid power- Advantages and Applications- Fluid power systems – Types of fluids- Properties of fluids – Basics of Hydraulics – Pascal’s Law- Principles of flow – Friction loss- Work, Power and Torque. Problems Sources of Hydraulic power: Pumping Theory – Pump Classification- Construction, Working, Design, Advantages, Disadvantages, Performance, Selection criterion of Linear, Rotary- Fixed and Variable displacement pumps-Problems

UNIT II HYDRAULIC ACTUATORS AND VALVES 9

Hydraulic Actuators: Cylinders– Types and construction, Application, Hydraulic cushioning - Hydraulic motors Control Components: Direction control, Flow control and Pressure control valves- Types, Construction and Operation- Servo and Proportional valves - Applications – Types of actuation. Accessories: Reservoirs, Pressure Switches- Applications- Fluid Power ANSI Symbols - Problems

UNIT III HYDRAULIC SYSTEMS 9

Accumulators, Intensifiers, Industrial hydraulic circuits- Regenerative, Pump Unloading, Double-pump, Pressure Intensifier, Air-over oil, Sequence, Reciprocation, Synchronization, Fail-safe, Speed control, Hydrostatic transmission, Electro hydraulic circuits, Mechanical Hydraulic servo systems.

UNIT IV PNEUMATIC SYSTEMS 9

Properties of air– Perfect Gas Laws- Compressors- Filter, Regulator, Lubricator, Muffler, Air control Valves, Quick Exhaust valves, Pneumatic actuators, Design of pneumatic circuit cascade method- Electro pneumatic circuits, Introduction to Fluidics, Pneumatic logic circuits.

UNIT V TROUBLE SHOOTING AND APPLICATIONS 9

Installation, Selection, Maintenance, Trouble Shooting and Remedies in Hydraulic and Pneumatic systems. Design of hydraulic circuits for Drilling, Planning, Shaping, Surface grinding, Press and Forklift applications. Design of Pneumatic circuits for a Pick and Place application and tool handling in a CNC machine. - Low cost Automation – Hydraulic and Pneumatic power packs- case studies.

TOTAL: 45 PERIODS

OUTCOMES:

- The students will be able to operate and maintain various pneumatic and hydraulic systems in industrial environments.

TEXT BOOK:

1. Anthony Esposito, “Fluid Power with Applications”, Prentice Hall, 2009.

REFERENCES:

1. Shanmugasundaram.K, “Hydraulic and Pneumatic Controls”, Chand & Co, 2006.
2. Majumdar, S.R., “Oil Hydraulics Systems- Principles and Maintenance”, Tata McGraw Hill, 2001
3. Majumdar, S.R., “Pneumatic Systems – Principles and Maintenance”, Tata McGraw Hill, 2007.
4. Dudelyt, A Pease and John J Pippenger, “Basic Fluid Power”, Prentice Hall, 1987.
5. Srinivasan.R, “Hydraulic and Pneumatic Controls”, Vijay Nicole Imprints, 2008.
6. Joji.P, “Pneumatic Controls”, Wiley India, 2008

MT6603 DESIGN OF MECHATRONICS SYSTEM L T P C
3 0 0 3

OBJECTIVES:

- The students will be exposed to design mechatronics system in Labview & Vim –Sim Environments

UNIT I INTRODUCTION TO MECHATRONICS SYSTEM 9

Key elements – Mechatronics Design process –Design Parameters – Traditional and Mechatronics designs – Advanced approaches in Mechatronics - Industrial design and ergonomics, safety.

UNIT II SYSTEM MODELLING 9

Introduction-model categories-fields of application-model development-model verification-model validation-model simulation-design of mixed systems-electro mechanics design-model transformation-domain-independent description forms-simulator coupling.

UNIT III REAL TIME INTERFACING 9

Introduction-selection of interfacing standards Elements of Data Acquisition & control Systems- Over view of I/O process, General purpose I/O card and its installation, Data conversion process, Application Software- Lab view Environment and its applications, Vim-Sim Environment & its applications -Man machine interface.

UNIT IV CASE STUDIES ON MECHATRONIC SYSTEM 9

Introduction –Fuzzy based Washing machine – pH control system – Autofocus Camera, exposure control– Motion control using D.C.Motor& Solenoids – Engine management systems.– Controlling temperature of a hot/cold reservoir using PID- Control of pick and place robot – Part identification and tracking using RFID – Online surface measurement using image processing

UNIT V MICRO MECHATRONIC SYSTEM 9

Introduction- System principle - Component design – System design – Scaling laws – Micro actuation – Micro robot – Micro pump – Applications of micro mechatronic components.

TOTAL : 45 PERIODS

OUTCOMES:

- The students will be able to design systems in mechatronics approach using modern software packages.

TEXT BOOKS:

1. Devdas shetty, Richard A. Kolk, “Mechatronics System Design”, 2nd Edition ,Cengage Learning 2011.
2. Georg pelz, "Mechatronic Systems: Modeling and simulation" with HDL’s, John wiley and sons Ltd, 2003

REFERENCES:

1. Bishop, Robert H, "Mechatronics Hand book", CRC Press, 2002.
2. Bradley, D.Dawson, N.C. Burd and A.J. Loader, "Mechatronics: Electronics in Products and Processes", CRC Press 1991 , First Indian print 2010.
3. De Silva, "Mechatronics: A Foundation Course", Taylor & Francis, Indian Reprint, 2013

IE6011 PRODUCT DESIGN AND DEVELOPMENT L T P C 3 0 0 3

OBJECTIVES:

- The course aims at providing the basic concepts of product design, product features and its architecture so that student can have a basic knowledge in the common features a product has and how to incorporate them suitably in product.

UNIT I INTRODUCTION 5

Need for IPPD – Strategic importance of Product development – integration of customer, designer, material supplier and process planner, Competitor and customer – Behaviour analysis. Understanding customer – prompting customer understanding – involve customer in development and managing requirements – Organization – process management and improvement – Plan and establish product specifications.

UNIT II CONCEPT GENERATION AND SELECTION 5

Task – Structured approaches – clarification – search – externally and internally – explore systematically – reflect on the solutions and processes – concept selection – methodology – benefits.

UNIT III PRODUCT ARCHITECTURE 10

Implications – Product change – variety – component standardization – product performance – manufacturability – product development management – establishing the architecture – creation – clustering – geometric layout development – fundamental and incidental interactions – related system level design issues – secondary systems – architecture of the chunks – creating detailed interface specifications.

UNIT IV INDUSTRIAL DESIGN 10

Integrate process design – Managing costs – Robust design – Integrating CAE, CAD, CAM tools – Simulating product performance and manufacturing processes electronically – Need for industrial design – impact – design process – investigation of for industrial design – impact – design process – investigation of customer needs – conceptualization – refinement – management of the industrial design process – technology driven products – user – driven products – assessing the quality of industrial design.

UNIT V DESIGN FOR MANUFACTURING AND PRODUCT DEVELOPMENT 15

Definition – Estimation of Manufacturing cost – reducing the component costs and assembly costs – Minimize system complexity – Prototype basics – principles of prototyping – planning for prototypes – Economic Analysis – Understanding and representing tasks – baseline project planning – accelerating the project – project execution.

TOTAL: 45 PERIODS

OUTCOMES:

- The student will be able to design some products for the given set of applications; also the knowledge gained through prototyping technology will help the student to make a prototype of a problem and hence product design and development can be achieved.

TEXT BOOK:

1. Kari T.Ulrich and Steven D.Eppinger, ”Product Design and Development”, McGraw-Hill International Edns. 1999.

REFERENCES:

1. Kemnneth Crow, "Concurrent Engg./Integrated Product Development”, DRM Associates,26/3, Via Olivera, Palos Verdes, CA 90274(310) 377-569, Workshop Book.
2. Stephen Rosenthal,”Effective Product Design and Development”, Business One Orwin, Homewood, 1992, ISBN 1-55623-603-4.
3. Staurt Pugh, ”Tool Design –Integrated Methods for Successful Product Engineering”, Addison Wesley Publishing, New york, NY.

MT6703 ROBOTICS AND MACHINE VISION SYSTEM

L	T	P	C
3	0	0	3

OBJECTIVES:

- Students will learn about basics of robots , programming and Machine vision applications in robots

UNIT I BASICS OF ROBOTICS 9

Introduction- Basic components of robot-Laws of robotics- classification of robot-work space-accuracy-resolution –repeatability of robot. Power transmission system: Rotary to rotary motion, Rotary to linear motion, Harmonics drives

UNIT II ROBOT END EFFECTORS 9

Robot End effectors: Introduction- types of End effectors- Mechanical gripper- types of gripper mechanism- gripper force analysis- other types of gripper- special purpose grippers.

UNIT III ROBOT MECHANICS 10

Robot kinematics: Introduction- Matrix representation- rigid motion & homogeneous transformation-forward & inverse kinematics- trajectory planning. Robot Dynamics: Introduction - Manipulator dynamics – Lagrange - Euler formulation- Newton - Euler formulation

UNIT IV MACHINE VISION FUNDAMENTALS 9

Machine vision: image acquisition, digital images-sampling and quantization-levels of computation Feature extraction-windowing technique- segmentation- Thresholding- edge detection- binary morphology - grey morphology

UNIT V ROBOT PROGRAMMING 8

Robot programming: Robot Languages- Classification of robot language-Computer control and robot software-Val system and Languages- application of robots.

TOTAL: 45 PERIODS

OUTCOMES:

- Upon completion of this course, the students can able to apply the basic engineering knowledge for the design of robotics

TEXT BOOKS:

1. M.P.Groover, M.Weiss ,R.N. Nagal, N.G.Odrey, "Industrial Robotics - Technology, programming and Applications" Tata , McGraw-Hill Education Pvt Limited, 2008

REFERENCES:

1. Sathya Ranjan Deb, "Robotics Technology & flexible Automation" Sixth edition, Tata McGraw-Hill Publication, 2003.
2. K.S.Fu, R.C.Gonzalez, C.S.G.Lee, "Robotics: Sensing, Vision & Intelligence", Tata McGraw-Hill Publication, 1987.
3. John.J.Craig, "Introduction to Robotics: Mechanics & control", Second edition, 2002.
4. Jazar, "Theory of Applied Robotics: Kinematics, Dynamics and Control", Springer, Indian Reprint, 2010

ME6602 AUTOMOBILE ENGINEERING L T P C
3 0 0 3

OBJECTIVES:

- To understand the construction and working principle of various parts of an automobile.
- To have the practice for assembling and dismantling of engine parts and transmission system

UNIT I VEHICLE STRUCTURE AND ENGINES 9

Types of automobiles, vehicle construction and different layouts, chassis, frame and body, Vehicle aerodynamics (various resistances and moments involved), IC engines –components-functions and materials, variable valve timing (VVT).

UNIT II ENGINE AUXILIARY SYSTEMS 9

Electronically controlled gasoline injection system for SI engines, Electronically controlled diesel injection system (Unit injector system, Rotary distributor type and common rail direct injection system), Electronic ignition system (Transistorized coil ignition system, capacitive discharge ignition system), Turbo chargers (WGT, VGT), Engine emission control by three way catalytic converter system, Emission norms (Euro and BS).

UNIT III TRANSMISSION SYSTEMS 9

Clutch-types and construction, gear boxes- manual and automatic, gear shift mechanisms, Over drive, transfer box, fluid flywheel, torque converter, propeller shaft, slip joints, universal joints ,Differential and rear axle, Hotchkiss Drive and Torque Tube Drive.

UNIT IV STEERING, BRAKES AND SUSPENSION SYSTEMS 9

Steering geometry and types of steering gear box-Power Steering, Types of Front Axle, Types of Suspension Systems, Pneumatic and Hydraulic Braking Systems, Antilock Braking System (ABS), electronic brake force distribution (EBD) and Traction Control.

UNIT V ALTERNATIVE ENERGY SOURCES 9

Use of Natural Gas, Liquefied Petroleum Gas, Bio-diesel, Bio-ethanol, Gasohol and Hydrogen in Automobiles- Engine modifications required –Performance ,Combustion and Emission Characteristics of SI and CI engines with these alternate fuels - Electric and Hybrid Vehicles, Fuel Cell

Note: Practical Training in dismantling and assembling of Engine parts and Transmission Systems should be given to the students.

TOTAL: 45 PERIODS

OUTCOMES:

- Upon completion of this course, the students will be able to identify the different components in automobile engineering.

- Have clear understanding on different auxiliary and transmission systems usual.

TEXT BOOKS:

1. Kirpal Singh, “Automobile Engineering”, Vol 1 & 2, Standard Publishers, Seventh Edition, New Delhi, 1997.
2. Jain K.K. and Asthana .R.B, “Automobile Engineering” Tata McGraw Hill Publishers, New Delhi, 2002.

REFERENCES:

1. Newton ,Steeds and Garet, “Motor Vehicles”, Butterworth Publishers,1989.
2. Joseph Heitner, “Automotive Mechanics,” Second Edition, East-West Press, 1999.
3. Martin W, Stockel and Martin T Stockle , “Automotive Mechanics Fundamentals,” The Good heart –Will Cox Company Inc, USA ,1978.
4. Heinz Heisler , "Advanced Engine Technology,” SAE International Publications USA,1998.
5. Ganesan V. “Internal Combustion Engines”, Third Edition, Tata Mcgraw-Hill, 2007.

MT6801 AUTOMOTIVE ELECTRONICS L T P C
3 0 0 3

OBJECTIVES:

- Students will be exposed to application of electronics in automotives systems

UNIT I INTRODUCTION 8

Evolution of electronics in automobiles – emission laws – introduction to Euro I, Euro II, Euro III, Euro IV, Euro V standards – Equivalent Bharat Standards. Charging systems: Working and design of charging circuit diagram – Alternators – Requirements of starting system - Starter motors and starter circuits.

UNIT II IGNITION AND INJECTION. SYSTEMS 10

Ignition systems: Ignition fundamentals - Electronic ignition systems - Programmed Ignition – Distribution less ignition - Direct ignition – Spark Plugs. Electronic fuel Control: Basics of combustion – Engine fuelling and exhaust emissions – Electronic control of carburetion – Petrol fuel injection – Diesel fuel injection.

UNIT III SENSOR AND ACTUATORS 7

Working principle and characteristics of Airflow rate, Engine crankshaft angular position, Hall effect, Throttle angle, temperature, exhaust gas oxygen sensors – study of fuel injector, exhaust gas recirculation actuators, stepper motor actuator, vacuum operated actuator.

UNIT IV ENGINE CONTROL SYSTEMS 10

Control modes for fuel control-engine control subsystems – ignition control methodologies – different ECU’s used in the engine management – block diagram of the engine management system. In vehicle networks: CAN standard, format of CAN standard – diagnostics systems in modern automobiles.

UNIT V CHASSIS AND SAFETY SYSTEMS 10

Traction control system – Cruise control system – electronic control of automatic transmission – antilock braking system – electronic suspension system – working of airbag and role of MEMS in airbag systems – centralized door locking system – climate control of cars.

TOTAL : 45 PERIODS

OUTCOMES:

- The students will be able to use advanced sensors and actuators in the upgradation of automobiles.

TEXT BOOKS:

1. Ribbens, "Understanding Automotive Electronics", 7th Edition, Elsevier, Indian Reprint, 2013

REFERENCES:

1. Tom Denton, “Automobile Electrical and Electronics Systems”, Edward Arnold Publishers, 2000.
2. Barry Hollembeak, “Automotive Electricity, Electronics & Computer Controls”, Delmar Publishers, 2001.
3. Richard K. Dupuy “Fuel System and Emission controls”, Check Chart Publication, 2000.
4. Ronald. K. Jurgon, “Automotive Electronics Handbook”, McGraw-Hill, 1999.

BE8253 BASIC ELECTRICAL, ELECTRONICS AND INSTRUMENTATION ENGINEERING **L T P C**
3 0 0 3

OBJECTIVES:

To impart knowledge on

1. Electric circuit laws, single and three phase circuits and wiring
2. Working principles of Electrical Machines
3. Working principle of Various electronic devices and measuring instruments

UNIT I ELECTRICAL CIRCUITS 9

Basic circuit components -, Ohms Law - Kirchoff's Law – Instantaneous Power – Inductors - Capacitors – Independent and Dependent Sources - steady state solution of DC circuits - Nodal analysis, Mesh analysis- Thevinin's Theorem, Norton's Theorem, Maximum Power transfer theorem- Linearity and Superposition Theorem.

UNIT II AC CIRCUITS 9

Introduction to AC circuits – waveforms and RMS value – power and power factor, single phase and three-phase balanced circuits – Three phase loads - housing wiring, industrial wiring, materials of wiring

UNIT III ELECTRICAL MACHINES 9

Principles of operation and characteristics of ; DC machines, Transformers (single and three phase) ,Synchronous machines , three phase and single phase induction motors.

UNIT IV ELECTRONIC DEVICES & CIRCUITS 9

Types of Materials – Silicon & Germanium- N type and P type materials – PN Junction –Forward and Reverse Bias –Semiconductor Diodes –Bipolar Junction Transistor – Characteristics —Field Effect Transistors – Transistor Biasing –Introduction to operational Amplifier –Inverting Amplifier –Non Inverting Amplifier –DAC – ADC .

UNIT V MEASUREMENTS & INSTRUMENTATION 9

Introduction to transducers - Classification of Transducers: Resistive, Inductive, Capacitive, Thermoelectric, piezoelectric, photoelectric, Hall effect and Mechanical - ,Classification of instruments

1. Types of indicating Instruments - multimeters –Oscilloscopes- – three-phase power measurements– instrument transformers (CT and PT)

TOTAL : 45 PERIODS

OUTCOMES:

Ability to

1. Understand electric circuits and working principles of electrical machines
2. Understand the concepts of various electronic devices
3. Choose appropriate instruments for electrical measurement for a specific application

TEXT BOOKS

1. Leonard S Bobrow, " Foundations of Electrical Engineering", Oxford University Press, 2013
2. D P Kothari and I.J Nagarath, "Electrical Machines "Basic Electrical and Electronics Engineering", McGraw Hill Education(India) Private Limited, Third Reprint ,2016
3. Thereja .B.L., "Fundamentals of Electrical Engineering and Electronics", S. Chand & Co. Ltd., 2008

REFERENCES

- Del Toro, “Electrical Engineering Fundamentals”, Pearson Education, New Delhi, 2007
- John Bird, “Electrical Circuit Theory and Technology”, Elsevier, First Indian Edition, 2006
- Allan S Moris, “Measurement and Instrumentation Principles”, Elseveir, First Indian Edition, 2006
- Rajendra Prasad, “Fundamentals of Electrical Engineering”, Prentice Hall of India, 2006
- A.E.Fitzgerald, David E Higginbotham and Arvin Grabel, “Basic Electrical Engineering”, McGraw Hill Education(India) Private Limited, 2009
- N K De, Dipu Sarkar, “Basic Electrical Engineering”, Universities Press (India)Private Limited 2016

CE8395	STRENGTH OF MATERIALS FOR MECHANICAL ENGINEERS	L	T	P	C
		3	0	0	3

OBJECTIVES:

- To understand the concepts of stress, strain, principal stresses and principal planes.
- To study the concept of shearing force and bending moment due to external loads in determinate beams and their effect on stresses.
- To determine stresses and deformation in circular shafts and helical spring due to torsion.
- To compute slopes and deflections in determinate beams by various methods.
- To study the stresses and deformations induced in thin and thick shells.

UNIT I STRESS, STRAIN AND DEFORMATION OF SOLIDS 9

Rigid bodies and deformable solids – Tension, Compression and Shear Stresses – Deformation of simple and compound bars – Thermal stresses – Elastic constants – Volumetric strains –Stresses on inclined planes – principal stresses and principal planes – Mohr’s circle of stress.

UNIT II TRANSVERSE LOADING ON BEAMS AND STRESSES IN BEAM 9

Beams – types transverse loading on beams – Shear force and bending moment in beams – Cantilevers – Simply supported beams and over – hanging beams. Theory of simple bending– bending stress distribution – Load carrying capacity – Proportioning of sections – Flitched beams – Shear stress distribution.

UNIT III TORSION 9

Torsion formulation stresses and deformation in circular and hollows shafts – Stepped shafts– Deflection in shafts fixed at the both ends – Stresses in helical springs – Deflection of helical springs, carriage springs.

UNIT IV DEFLECTION OF BEAMS 9

Double Integration method – Macaulay’s method – Area moment method for computation of slopes and deflections in beams - Conjugate beam and strain energy – Maxwell’s reciprocal theorems.

UNIT V THIN CYLINDERS, SPHERES AND THICK CYLINDERS 9

Stresses in thin cylindrical shell due to internal pressure circumferential and longitudinal stresses and deformation in thin and thick cylinders – spherical shells subjected to internal pressure – Deformation in spherical shells – Lame’s theorem.

TOTAL: 45 PERIODS

OUTCOMES:

Students will be able to

- Understand the concepts of stress and strain in simple and compound bars, the importance of principal stresses and principal planes.
- Understand the load transferring mechanism in beams and stress distribution due to shearing force and bending moment.
- Apply basic equation of simple torsion in designing of shafts and helical spring
- Calculate the slope and deflection in beams using different methods.
- Analyze and design thin and thick shells for the applied internal and external pressures.

TEXT BOOKS:

1. Bansal, R.K., "Strength of Materials", Laxmi Publications (P) Ltd., 2016
2. Jindal U.C., "Strength of Materials", Asian Books Pvt. Ltd., New Delhi, 2009

REFERENCES:

1. Egor. P.Popov “Engineering Mechanics of Solids” Prentice Hall of India, New Delhi, 2002
2. Ferdinand P. Been, Russell Johnson, J.r. and John J. Dewole "Mechanics of Materials", Tata McGraw Hill Publishing ‘co. Ltd., New Delhi, 2005.
3. Hibbeler, R.C., "Mechanics of Materials", Pearson Education, Low Price Edition, 2013
4. Subramanian R., "Strength of Materials", Oxford University Press, Oxford Higher Education Series, 2010.

EC8392 DIGITAL ELECTRONICS

L	T	P	C
3	0	0	3

OBJECTIVES:

- To present the Digital fundamentals, Boolean algebra and its applications in digital systems
- To familiarize with the design of various combinational digital circuits using logic gates
- To introduce the analysis and design procedures for synchronous and asynchronous sequential circuits
- To explain the various semiconductor memories and related technology
- To introduce the electronic circuits involved in the making of logic gates

UNIT I DIGITAL FUNDAMENTALS 9

Number Systems – Decimal, Binary, Octal, Hexadecimal, 1‘s and 2‘s complements, Codes – Binary, BCD, Excess 3, Gray, Alphanumeric codes, Boolean theorems, Logic gates, Universal gates, Sum of products and product of sums, Minterms and Maxterms, Karnaugh map Minimization and Quine-McCluskey method of minimization.

UNIT II COMBINATIONAL CIRCUIT DESIGN 9

Design of Half and Full Adders, Half and Full Subtractors, Binary Parallel Adder – Carry look ahead Adder, BCD Adder, Multiplexer, Demultiplexer, Magnitude Comparator, Decoder, Encoder, Priority Encoder.

UNIT III SYNCHRONOUS SEQUENTIAL CIRCUITS 9

Flip flops – SR, JK, T, D, Master/Slave FF – operation and excitation tables, Triggering of FF, Analysis and design of clocked sequential circuits – Design - Moore/Mealy models, state minimization, state assignment, circuit implementation – Design of Counters- Ripple Counters, Ring Counters, Shift registers, Universal Shift Register.

UNIT IV ASYNCHRONOUS SEQUENTIAL CIRCUITS 9

Stable and Unstable states, output specifications, cycles and races, state reduction, race free assignments, Hazards, Essential Hazards, Pulse mode sequential circuits, Design of Hazard free circuits.

UNIT V MEMORY DEVICES AND DIGITAL INTEGRATED CIRCUITS 9

Basic memory structure – ROM -PROM – EPROM – EEPROM –EAPROM, RAM – Static and dynamic RAM - Programmable Logic Devices – Programmable Logic Array (PLA) - Programmable Array Logic (PAL) – Field Programmable Gate Arrays (FPGA) - Implementation of combinational logic circuits using PLA, PAL.

Digital integrated circuits: Logic levels, propagation delay, power dissipation, fan-out and fan-in, noise margin, logic families and their characteristics-RTL, TTL, ECL, CMOS

TOTAL: 45 PERIODS

OUTCOMES:
At the end of the course:

- Use digital electronics in the present contemporary world
- Design various combinational digital circuits using logic gates
- Do the analysis and design procedures for synchronous and asynchronous sequential circuits
- Use the semiconductor memories and related technology
- Use electronic circuits involved in the design of logic gates

TEXT BOOK:

1. M. Morris Mano and Michael D. Ciletti, “Digital Design”, 5th Edition, Pearson, 2014.

REFERENCES

1. Charles H.Roth. “Fundamentals of Logic Design”, 6th Edition, Thomson Learning, 2013.
2. Thomas L. Floyd, “Digital Fundamentals”, 10th Edition, Pearson Education Inc, 2011
3. S.Salivahanan and S.Arivazhagan“Digital Electronics”, Ist Edition, Vikas Publishing House pvt Ltd, 2012.
4. Anil K.Maini “Digital Electronics”, Wiley, 2014.
5. A.Anand Kumar “Fundamentals of Digital Circuits”, 4th Edition, PHI Learning Private Limited, 2016.
6. Soumitra Kumar Mandal “ Digital Electronics”, McGraw Hill Education Private Limited, 2016.

MT8302	ANALOG DEVICES AND CIRCUITS	L	T	P	C
		3	0	0	3

OBJECTIVES:

- To understand the basic principle of switching devices
- To study various types of amplifiers.
- To understand the various functionalities of ICs and Waveform generators.
- To study the characteristics of various electronic devices.

UNIT I ANALOG ELECTRONICS 9

Switching Devices: SCR, TRIAC, JFET, MOSFET - Rectifiers and Filters - Regulated Power Supply – Switching Power Supplies, Thermal Considerations - Feedback and power amplifiers - Oscillators: Colpitts oscillator, Hartley oscillator and Wien bridge oscillator

UNIT II OPERATIONAL AMPLIFIERS AND APPLICATIONS 9

Operational amplifiers – Principles, Specifications, characteristics and ,applications-. Arithmetic Operations, Integrator, Differentiator, Comparator, Schmitt Trigger, Instrumentation Amplifier, A/D & D/A converters

UNIT III WAVEFORM GENERATORS AND ICs 9

Triangular, Saw tooth and Sine wave generators - Multivibrators - Function generator ICs – Timer ICs – Voltage regulator ICs: fixed, Adjustable and General purpose - V/F and F/V convertors – Optocouplers

UNIT IV TEST AND MEASURING INSTRUMENTS 9

Measurement of voltage, current ,frequency and power using Multi meters , oscilloscopes, recorders, data loggers, signal sources, counters, analyzers and printers.

UNIT V DISPLAY DEVICES 9

Introduction, Photo Luminescence, Cathode Luminescence, Electro Luminescence, Injection Luminescence, LED, Plasma Display, Liquid Crystal Displays, Numeric Displays, Photo transistor, Solar cell, CCD

TOTAL : 45 PERIODS

OUTCOMES:

Upon Completion of the course, the students will be able to:

CO1: Apply the various switching devices in electronic circuits.
CO2: Work with various applications of amplifiers
CO3: Design various circuits using ICs.
CO4: Test and measure different parameters available in electronic circuits.
CO5: Explain the principles of various display devices.

TEXT BOOKS:

1. Donald A Neaman, "Semiconductor Physics and Devices", Fourth Edition, Tata Mc Graw Hill Inc. 2012.
2. Roy Chowdhury D. and Jain Shail B., Linear Integrated Circuits, New Age Int. Pub., 5th edition, 2018.
3. Salivahanan S., Suresh kumar N. and Vallavaraj A., Electronic Devices and Circuits, Tata Mc Graw Hill publishing company, New Delhi, 3rd edition, 2012

REFERENCES

1. Albert Malvino and Bates J., Electronic Principles, Tata McGraw- Hill Pub. Company Ltd., 7th edition, 2013.
2. Millman J., Halkias C.C. and Satyabrata Jit, Electronic Devices and Circuits, Tata McGraw Hill, New Delhi, 3rd edition, 2010.
3. Thomas L. Floyd, Electronic Devices, Pearson Education Asia, 9th edition, 2010.

ME8392 MANUFACTURING TECHNOLOGY L T P C
3 0 0 3

OBJECTIVE:

- The automobile components such as piston, connecting rod, crankshaft, engine block, front axle, frame, body etc., are manufactured by various types of production processes involving casting, welding, machining, metal forming, power metallurgy etc.

UNIT I CASTING 8

Casting types, procedure to make sand mould, types of core making, moulding tools, machine moulding, special moulding processes – CO2 moulding; shell moulding, investment mounding, permanent mould casting, pressure die casting, centrifugal casting, continuous casting, casting defects.

UNIT II WELDING 8

Classification of welding processes. Principles of Oxy-acetylene gas welding. A.C metal arc welding, resistance welding, submerged arc welding, tungsten inert gas welding, metal inert gas welding, plasma arc welding, thermit welding, electron beam welding, laser beam welding, defects in welding, soldering and brazing.

UNIT III MACHINING 13

General principles (with schematic diagrams only) of working and commonly performed operations in the following machines: Lathe, Shaper, Planer, Horizontal milling machine, Universal drilling machine, Cylindrical grinding machine, Capstan and Turret lathe. Basics of CNC machines. General principles and applications of the following processes: Abrasive jet machining, Ultrasonic machining, Electric discharge machining, Electro chemical machining, Plasma arc machining, Electron beam machining and Laser beam machining.

UNIT IV FORMING AND SHAPING OF PLASTICS 7

Types of plastics - Characteristics of the forming and shaping processes – Moulding of Thermoplastics – Working principles and typical applications of - Injection moulding – Plunger and screw machines – Blow moulding – Rotational moulding – Film blowing – Extrusion - Typical industrial applications – Thermoforming – Processing of Thermosets – Working principles and typical applications - Compression moulding – Transfer moulding – Bonding of Thermoplastics – Fusion and solvent methods – Induction and Ultrasonic methods

UNIT V METAL FORMING AND POWDER METALLURGY 9

Principles and applications of the following processes: Forging, Rolling, Extrusion, Wire drawing and Spinning, Powder metallurgy – Principal steps involved advantages, disadvantages and limitations of powder metallurgy.

TOTAL: 45 PERIODS

OUTCOME:

- The Students can able to use different manufacturing process and use this in industry for component production

TEXT BOOKS

1. Hajra Choudhury, “Elements of Workshop Technology”, Vol. I and II, Media Promoters and Publishers Pvt., Ltd., Mumbai, 2005.
2. Nagendra Parashar B.S. and Mittal R.K., “Elements of Manufacturing Processes”, Prentice-Hall of India Private Limited, 2007.

REFERENCES

1. Adithan. M and Gupta. A.B., “Manufacturing Technology”, New Age, 2006.
2. “H.M.T. Production Technology – Handbook”, Tata McGraw-Hill, 2000.
3. Jain. R.K. and S.C. Gupta, “Production Technology”, Khanna Publishers. 16th Edition,2001.
4. Roy. A. Linberg, “Process and Materials of Manufacture”, PHI, 2000.
5. Serope Kalpajian, Steven R.Schmid, “Manufacturing Processes for Engineering Materials”, Fourth Edition, Pearson Education, Inc. 2007.

MT8491	MICROPROCESSORS AND MICROCONTROLLERS	L	T	P	C
		3	0	0	3

OBJECTIVES:

Through the use of assembly language, by the end of the course students will become thoroughly familiar with the elements of microprocessor and microcontroller software and hardware. They will be able to:

- Understand fundamental operating concepts behind microprocessors and microcontrollers.
- Emphasis on the hardware features of Microprocessor 8085, 8086 and Microcontroller 8051 with their functions
- Understand commonly used peripheral / interfacing

UNIT I 8085 PROCESSOR 9

Hardware Architecture, pin diagram – Functional Building Blocks of Processor – Memory organization – I/O ports and data transfer concepts– Timing Diagram – Interrupts.

UNIT II PROGRAMMING OF 8085 PROCESSOR 9

Instruction - format and addressing modes – Assembly language format – Data transfer, data manipulation& control instructions – Programming: Loop structure with counting & Indexing – Look up table - Subroutine instructions - stack.

UNIT III 8051 MICRO CONTROLLER 9

Hardware Architecture, pin diagram – Functional Building Blocks of Processor – Memory organization – I/O ports and data transfer concepts– Serial Communication – Interrupts-Introduction to Arduino.

UNIT IV PERIPHERAL INTERFACING 9

Introduction on Architecture, configuration and interfacing, with ICs: 8255 , 8259 , 8254,8237,8251, 8279 ,- A/D and D/A converters.

UNIT V MICRO CONTROLLER PROGRAMMING & APPLICATIONS 9

Data Transfer, Manipulation, Control Algorithms& I/O instructions – Simple programming exercises-key board and display interface – Closed loop control of servo motor- stepper motor control – Washing Machine Control.

TOTAL :45 PERIODS

OUTCOMES:

On the successful completion of the course, students will be able to

CO1: Distinguish the feature of the 8085 microprocessor, Hardware Architecture and PIN diagram.

CO2: Demonstrate programming proficiency using the various addressing modes and data transfer instructions of 8085 microprocessor

CO3: Acquaint the knowledge on architecture and programming of Microcontroller 8051.

CO4: Illustrate the interrupts handling and demonstrate peripherals applications in different IC and Know about A/D and D/A converters.

CO5**:**Apply the programming concepts to interface the hardware units with microprocessor and Microcontroller

TEXT BOOKS:

1. Krishna Kant, “Microprocessor and Microcontrollers”, Eastern Company Edition, Prentice Hall of India, New Delhi, 2007.
2. Muhammad Ali Mazidi & Janice Gilli Mazidi, R.D.Kinely ‘The 8051 Micro Controller and Embedded Systems’, PHI Pearson Education, 5th Indian reprint, 2003.
3. R.S. Gaonkar, ‘Microprocessor Architecture Programming and Application’, with 8085, Wiley Eastern Ltd., New Delhi, 2013

REFERENCES:

1. N.Senthil Kumar, M.Saravanan, S.Jeevananthan, ‘Microprocessors and Microcontrollers’, Oxford, 2013.
2. Soumitra Kumar Mandal, Microprocessor & Microcontroller Architecture, Programming & Interfacing using 8085,8086,8051,McGraw Hill Edu,2013.
3. Valder – Perez, “Microcontroller – Fundamentals and Applications with Pic,” Yeesdee Publishers, Tayler & Francis, 2013.

MT8591 SENSORS AND INSTRUMENTATION

L	T	P	C
3	0	0	3

OBJECTIVES:

- To understand the concepts of measurement technology.
- To learn the various sensors used to measure various physical parameters.
- To learn the fundamentals of signal conditioning, data acquisition and communication systems used in mechatronics system development.

UNIT I INTRODUCTION 9

Basics of Measurement – Classification of errors – Error analysis – Static and dynamic characteristics of transducers – Performance measures of sensors – Classification of sensors – Sensor calibration techniques – Sensor Output Signal Types.

UNIT II MOTION, PROXIMITY AND RANGING SENSORS 9

Motion Sensors – Potentiometers, Resolver, Encoders – Optical, Magnetic, Inductive, Capacitive, LVDT – RVDT – Synchro – Microsyn, Accelerometer – GPS, Bluetooth, Range Sensors – RF beacons, Ultrasonic Ranging, Reflective beacons, Laser Range Sensor (LIDAR).

UNIT III FORCE, MAGNETIC AND HEADING SENSORS 7

Strain Gage, Load Cell, Magnetic Sensors –types, principle, requirement and advantages: Magneto resistive – Hall Effect – Current sensor Heading Sensors – Compass, Gyroscope, Inclinometers.

UNIT IV OPTICAL, PRESSURE AND TEMPERATURE SENSORS 11

Photo conductive cell, photo voltaic, Photo resistive, LDR – Fiber optic sensors – Pressure – Diaphragm, Bellows, Piezoelectric – Tactile sensors, Temperature – IC, Thermistor, RTD, Thermocouple. Acoustic Sensors – flow and level measurement, Radiation Sensors - Smart Sensors - Film sensor, MEMS & Nano Sensors, LASER sensors.

UNIT V SIGNAL CONDITIONING AND DAQ SYSTEMS 9

Amplification – Filtering – Sample and Hold circuits – Data Acquisition: Single channel and multi channel data acquisition – Data logging - applications - Automobile, Aerospace, Home appliances, Manufacturing, Environmental monitoring.

TOTAL : 45 PERIODS

OUTCOMES:

Upon Completion of the course the students will be able to

CO1: Familiar with various calibration techniques and signal types for sensors.
CO2: Apply the various sensors in the Automotive and Mechatronics applications
CO3: Describe the working principle and characteristics of force, magnetic and heading sensors.
CO4: Understand the basic principles of various pressure and temperature, smart sensors.
CO5**:** Ability to implement the DAQ systems with different sensors for real time applications.

TEXT BOOKS:

1. Ernest O Doebelin, “Measurement Systems – Applications and Design”, Tata McGraw-Hill, 2009
2. Sawney A K and Puneet Sawney, “A Course in Mechanical Measurements and Instrumentation and Control”, 12th edition, Dhanpat Rai & Co, New Delhi, 2013.

REFERENCES

1. C. Sujatha ... Dyer, S.A., Survey of Instrumentation and Measurement, John Wiley & Sons, Canada, 2001
2. Hans Kurt Tönshoff (Editor), Ichiro, “Sensors in Manufacturing” Volume 1, Wiley-VCH April 2001.
3. John Turner and Martyn Hill, “Instrumentation for Engineers and Scientists”, Oxford Science Publications, 1999.
4. Patranabis D, “Sensors and Transducers”, 2nd Edition, PHI, New Delhi, 2011.

5. Richard Zurawski, “Industrial Communication Technology Handbook” 2nd edition, CRC Press, 2015

ME8591 APPLIED HYDRAULICS AND PNEUMATICS L T P C
3 0 0 3

OBJECTIVE:

- This course will give an appreciation of the fundamental principles, design and operation of hydraulic and pneumatic components and systems and their application in manufacturing and mechanical systems.

UNIT I FLUID POWER PRINCIPLES AND HYDRAULIC PUMPS 9

Introduction to Fluid power- Advantages and Applications- Fluid power systems – Types of fluids- Properties of fluids – Basics of Hydraulics – Pascal’s Law- Principles of flow – Friction loss- Work, Power and Torque. Problems Sources of Hydraulic power: Pumping Theory – Pump Classification- Construction, Working, Design, Advantages, Disadvantages, Performance, Selection criterion of Linear, Rotary- Fixed and Variable displacement pumps-Problems

UNIT II HYDRAULIC ACTUATORS AND VALVES 9

Hydraulic Actuators: Cylinders– Types and construction, Application, Hydraulic cushioning - Hydraulic motors Control Components: Direction control, Flow control and Pressure control valves-Types, Construction and Operation- Servo and Proportional valves - Applications – Types of actuation. Accessories: Reservoirs, Pressure Switches- Applications- Fluid Power ANSI Symbols - Problems

UNIT III HYDRAULIC SYSTEMS 9

Accumulators, Intensifiers, Industrial hydraulic circuits- Regenerative, Pump Unloading, Double-pump, Pressure Intensifier, Air-over oil, Sequence, Reciprocation, Synchronization, Fail-safe, Speed control, Hydrostatic transmission, Electro hydraulic circuits, Mechanical Hydraulic servo systems.

UNIT IV PNEUMATIC SYSTEMS 9

Properties of air– Perfect Gas Laws - Compressors- Filter, Regulator, Lubricator, Muffler, Air control Valves, Quick Exhaust valves, Pneumatic actuators, Design of pneumatic circuit cascade method- Electro pneumatic circuits, Introduction to Fluidics, Pneumatic logic circuits.

UNIT V TROUBLE SHOOTING AND APPLICATIONS 9

Installation, Selection, Maintenance, Trouble Shooting and Remedies in Hydraulic and Pneumatic systems. Design of hydraulic circuits for Drilling, Planning, Shaping, Surface grinding, Press and Forklift applications. Design of Pneumatic circuits for a Pick and Place application and tool handling in a CNC machine. - Low cost Automation – Hydraulic and Pneumatic power packs- case studies.

TOTAL: 45 PERIODS

OUTCOMES:

- Understanding operating principles and constructional features of hydraulic and pneumatic systems.
- Knowledge with selection of hydraulic / pneumatic components
- understanding of designing and layout of Hydraulic Power package and trouble shooting.

TEXT BOOK:

1. Anthony Esposito, “Fluid Power with Applications”, Prentice Hall, 2009.

REFERENCES:

1. Shanmugasundaram.K, “Hydraulic and Pneumatic Controls”, Chand & Co, 2006.
2. Majumdar, S.R., “Oil Hydraulics Systems- Principles and Maintenance”, Tata Mc Graw Hill, 2001
3. Majumdar, S.R., “Pneumatic Systems – Principles and Maintenance”, Tata Mc Graw Hill, 2007.
4. Dudelyt, A Pease and John J Pippenger, “Basic Fluid Power”, Prentice Hall, 1987.
5. Srinivasan.R, “Hydraulic and Pneumatic Controls”, Vijay Nicole Imprints, 2008.
6. Joji.P, “Pneumatic Controls”, John Wiley & Sons India, 2008

MT8601	DESIGN OF MECHATRONICS SYSTEM	L	T	P	C
		3	0	0	3

OBJECTIVES:

- Mechatronics system design and simulation, ergonomics and safety
- Theoretical and practical aspects of computer interfacing, real time data acquisition and control
- Design of motion control, motion converter and temperature control.

UNIT I INTRODUCTION TO DESIGN OF MECHATRONICS SYSTEM 9

Key elements – Mechatronics design process – design parameters – mechatronics and traditional design – Advanced approaches in mechatronics design – Introduction to industrial design, modelling, simulation and analysis – Ergonomics and safety.

UNIT II BASIC SYSTEM MODELLING 9

Introduction – model catagories – model development – Simulation using softwares – verification and validation – Mathematical modelling : Basic system modelling – mechanical electrical, fluid and thermal.

UNIT III MECHATRONIC SYSTEM MODELLING 7

Engineering systems: Rotational – translational, electro-mechanical, pneumatic-mechanical, hydraulic-mechanical, micro electro mechanical system – Dynamic responses of system: first order, second order system – Performance measures

UNIT IV REAL TIME INTERFACING 11

Introduction – Selection of interfacing standards- elements of data acquisition and control systems – Overview of I/O process – general purpose I/O cards and its installation – Data conversion process – Application softwares – Man machine interface

UNIT V CASE STUDIES ON DESIGN OF MECHATRONICS SYSTEM 9

Motion control using DC Motor, AC Motor and Servomotor - Temperature control of hot/cold reservoir – Pick and place robot – Car parking barriers – Motion and temperature control of washing machine – Auto focus camera, exposure control

TOTAL : 45 PERIODS

OUTCOMES

Students will be able to understand the mechatronics design

CO1: Understand the basics and key elements of Mechatronics design process
CO2: Familiar with basic system modelling
CO3: Understand the concepts of engineering system and dynamic response of the system
CO4: Realize the concepts of real time interfacing and data acquisition
CO5: Understanding the concepts of design of Mechatronics system through case studies

TEXT BOOKS:

1. Devdas shetty, Richard A. Kolk, “Mechatronics System Design”, 2nd Edition,Cengage Learning 2011.
2. Georg pelz, "Mechatronic Systems: Modeling and simulation" with HDL’s, John wiley and sons Ltd, 2003.

REFERENCES

1. Bishop, Robert H, "Mechatronics Hand book", CRC Press, 2002.
2. Bradley, D.Dawson, N.C. Burd and A.J. Loader, "Mechatronics: Electronics in Products and Processes", CRC Press 1991 , First Indian print 2010.
3. De Silva, "Mechatronics: A Foundation Course", Taylor & Francis, Indian Reprint, 2013.

ME8593	DESIGN OF MACHINE ELEMENTS	L	T	P	C
		3	0	0	3

OBJECTIVES

- To familiarize the various steps involved in the Design Process
- To understand the principles involved in evaluating the shape and dimensions of a component to satisfy functional and strength requirements.
- To learn to use standard practices and standard data
- To learn to use catalogues and standard machine components

(Use of P S G Design Data Book is permitted)

UNIT I STEADY STRESSES AND VARIABLE STRESSES IN MACHINE MEMBERS 9

Introduction to the design process - factors influencing machine design, selection of materials based on mechanical properties - Preferred numbers, fits and tolerances – Direct, Bending and torsional stress equations – Impact and shock loading – calculation of principle stresses for various load combinations, eccentric loading – curved beams – crane hook and 'C' frame- Factor of safety - theories of failure – Design based on strength and stiffness – stress concentration – Design for variable loading.

UNIT II SHAFTS AND COUPLINGS 9

Design of solid and hollow shafts based on strength, rigidity and critical speed – Keys, keyways and splines - Rigid and flexible couplings.

UNIT III TEMPORARY AND PERMANENT JOINTS 9

Threaded fastners - Bolted joints including eccentric loading, Knuckle joints, Cotter joints – Welded joints, riveted joints for structures - theory of bonded joints.

UNIT IV ENERGY STORING ELEMENTS AND ENGINE COMPONENTS 9

Various types of springs, optimization of helical springs - rubber springs - Flywheels considering stresses in rims and arms for engines and punching machines- Connecting Rods and crank shafts.

UNIT V BEARINGS 9

Sliding contact and rolling contact bearings - Hydrodynamic journal bearings, Sommerfeld Number, Raimondi and Boyd graphs, -- Selection of Rolling Contact bearings.

TOTAL: 45 PERIODS

OUTCOMES:

Upon the completion of this course the students will be able to

CO1 Explain the influence of steady and variable stresses in machine component design.
CO2 Apply the concepts of design to shafts, keys and couplings.
CO3 Apply the concepts of design to temporary and permanent joints.
CO4 Apply the concepts of design to energy absorbing members, bearings and connecting rod.
CO5 Apply the concepts of design to bearings.

TEXT BOOKS:

1. Bhandari V, "Design of Machine Elements", 4th Edition, Tata McGraw-Hill Book Co, 2016.
2. Joseph Shigley, Charles Mischke, Richard Budynas and Keith Nisbett "Mechanical Engineering Design", 9th Edition, Tata McGraw-Hill, 2011.

REFERENCES:

1. Alfred Hall, Halowenko, A and Laughlin, H., “Machine Design”, Tata McGraw-Hill BookCo.(Schaum’s Outline), 2010
2. Ansel Ugural, “Mechanical Design – An Integral Approach", 1st Edition, Tata McGraw-Hill Book Co, 2003.
3. P.C. Gope, “Machine Design – Fundamental and Application”, PHI learning private ltd, New Delhi, 2012.
4. R.B. Patel, “Design of Machine Elements”, MacMillan Publishers India P Ltd., Tech-Max Educational resources, 2011.
5. Robert C. Juvinall and Kurt M . Marshek, “Fundamentals of Machine Design”, 4th Edition, Wiley, 2005
6. Sundararajamoorthy T. V. Shanmugam .N, “Machine Design”, Anuradha Publications, Chennai, 2015.

MT8602	INDUSTRIAL AUTOMATION	L	T	P	C
		3	0	0	3

OBJECTIVES:

- To understand the construction, operation and installation of PLCs.
- To provide the knowledge on interfacing the PLCs and field devices with communication protocols.
- To understand the concepts of DCS and SCADA systems.

UNIT I PROGRAMMABLE LOGIC CONTROLLER 9

Introduction –– Principles of operation – PLC Architecture and specifications – PLC hardware components Analog & digital I/O modules, CPU & memory module – Programming devices – PLC ladder diagram, Converting simple relay ladder diagram into ladder diagram. PLC programming- Simple instructions – Manually operated switches – Mechanically operated switches - Latching relays.

UNIT II APPLICATIONS OF PLC 9

Timer instructions - On delay, Off delay, Cyclic and Retentive timers, Up /Down Counters, control instructions – Data manipulating instructions, math instructions; Applications of PLC – Motor start and stop, Simple materials handling applications, Automatic water level controller, Automatic lubrication of supplier Conveyor belt, Automatic car washing machine, Bottle label detection and process control application.

UNIT III SCADA SYSTEM & ARCHITECTURE 9

Data acquisition systems, Evolution of SCADA, Communication technologies, Monitoring and supervisory functions, SCADA applications in Utility Automation, Industries - SCADA System Components: Schemes- Remote Terminal Unit (RTU), Intelligent Electronic Devices (IED), Communication Network, SCADA Server, SCADA/HMI Systems Various SCADA architectures, advantages and disadvantages of each system

UNIT IV DISTRIBUTED CONTROL SYSTEM 9

Introduction to DCS – Various Architectures – Comparison – Local control unit – Process interfacing issues – Communication facilities Operator interfaces - Low level and high level operator interfaces – Displays - Engineering interfaces – Low level and high level engineering interfaces – Factors to be considered in selecting DCS – Case studies – Sugar industry and Power plant

UNIT V INDUSTRIAL PROCESS CONTROL 9

Study of Advanced Process control blocks: Statistical Process Control, Model Predictive Control, Fuzzy Logic Based Control, Neural-Network Based Control, PID Control

TOTAL : 45 PERIODS

OUTCOMES:

On the successful completion of the course, students will be able to

CO1: Choose appropriate PLC and explain the architecture, installation procedures and trouble shooting.

CO2: Develop PLC programs using various functions of PLCs for a given application.

CO3: Explain the application development procedures in SCADA and manage data, alarm and storage.

CO4: Distinguish DCS, SCADA and PLC and explain the architecture of DCS

CO5**:** Describe the controller elements and program methods.

TEXT BOOKS:

1. Gary Dunning, "Introduction to Programmable Logic Controllers",3rd India edition, Cengage Learning, 2007
2. John Webb, "Programmable Logic Controllers: Principles and Applications",5th edition Prentice Hall of India, 2012.
3. Krishna Kant "Computer Based Process Control", Prentice Hall of India, 2004.
4. Michael P. Lukas, Distributed Control Systems: Their Evaluation and Design, Van Nostrand Reinhold Co., 1986

REFERENCES

1. B. G. Liptak "Instrument Engineer's Handbook – Process Software and Digital Network", 3rd edition, CRC Press,2002.
2. Jose A. Romagnoli, Ahmet Palazoglu, "Introduction to Process control", CRC Taylor and Francisgroup, 2005.
3. Richard Cox, "Programmable Controllers", Delmer Thomson learning, 2001.
4. Richard Zurawski, "Industrial Communication Technology Handbook" 2nd edition, CRC Press, 2015.
5. William T. Shaw, Cybersecurity for SCADA systems, Penn Well Books, 2006

MG8591	**PRINCIPLES OF MANAGEMENT**	**L**	**T**	**P**	**C**
		3	**0**	**0**	**3**

OBJECTIVE:

- To enable the students to study the evolution of Management, to study the functions and principles of management and to learn the application of the principles in an organization

UNIT I INTRODUCTION TO MANAGEMENT AND ORGANIZATIONS 9

Definition of Management – Science or Art – Manager Vs Entrepreneur - types of managers - managerial roles and skills – Evolution of Management – Scientific, human relations , system and contingency approaches – Types of Business organization - Sole proprietorship, partnership, company-public and private sector enterprises - Organization culture and Environment – Current trends and issues in Management.

UNIT II PLANNING 9

Nature and purpose of planning – planning process – types of planning – objectives – setting objectives – policies – Planning premises – Strategic Management – Planning Tools and Techniques – Decision making steps and process.

UNIT III ORGANISING 9

Nature and purpose – Formal and informal organization – organization chart – organization structure – types – Line and staff authority – departmentalization – delegation of authority – centralization and decentralization – Job Design - Human Resource Management – HR Planning, Recruitment, selection, Training and Development, Performance Management , Career planning and management.

UNIT IV DIRECTING 9

Foundations of individual and group behaviour – motivation – motivation theories – motivational techniques – job satisfaction – job enrichment – leadership – types and theories of leadership – communication – process of communication – barrier in communication – effective communication – communication and IT.

UNIT V CONTROLLING 9

System and process of controlling – budgetary and non-budgetary control techniques – use of computers and IT in Management control – Productivity problems and management – control and performance – direct and preventive control – reporting.

TOTAL: 45 PERIODS

OUTCOME:

- Upon completion of the course, students will be able to have clear understanding of managerial functions like planning, organizing, staffing, leading & controlling and have same basic knowledge on international aspect of management

TEXT BOOKS:

1. JAF Stoner, Freeman R.E and Daniel R Gilbert "Management", 6th Edition, Pearson Education, 2004.
2. Stephen P. Robbins & Mary Coulter, "Management", Prentice Hall (India)Pvt. Ltd., 10th Edition, 2009.

REFERENCES:

1. Harold Koontz & Heinz Weihrich, "Essentials of Management", Tata McGraw Hill, 1998.
2. Robert Kreitner & Mamata Mohapatra, "Management", Biztantra, 2008.
3. Stephen A. Robbins & David A. Decenzo & Mary Coulter, "Fundamentals of Management", 7th Edition, Pearson Education, 2011.
4. Tripathy PC & Reddy PN, "Principles of Management", Tata Mcgraw Hill, 1999

ME8691 COMPUTER AIDED DESIGN AND MANUFACTURING

L	T	P	C
3	0	0	3

OBJECTIVES:

- To provide an overview of how computers are being used in mechanical component design
- To understand the application of computers in various aspects of Manufacturing viz., Design, Proper planning, Manufacturing cost, Layout & Material Handling system.

UNIT I INTRODUCTION 9

Product cycle- Design process- sequential and concurrent engineering- Computer aided design – CAD system architecture- Computer graphics – co-ordinate systems- 2D and 3D transformations- homogeneous coordinates - Line drawing -Clipping- viewing transformation-Brief introduction to CAD and CAM – Manufacturing Planning, Manufacturing control- Introduction to CAD/CAM –CAD/CAM concepts ––Types of production - Manufacturing models and Metrics – Mathematical models of Production Performance

UNIT II GEOMETRIC MODELING 9

Representation of curves- Hermite curve- Bezier curve- B-spline curves-rational curves-Techniques for surface modeling – surface patch- Coons and bicubic patches- Bezier and B-spline surfaces. Solid modeling techniques- CSG andB-rep

UNIT III CAD STANDARDS 9

Standards for computer graphics- **Graphical Kernel System** (GKS) - standards for exchange images- **Open G**raphics Library **(OpenGL)** - Data exchange standards - IGES, STEP, CALS etc. - communication standards.

UNIT IV FUNDAMENTAL OF CNC AND PART PROGRAMMING 9

Introduction to NC systems and CNC - Machine axis and Co-ordinate system- CNC machine tools- Principle of operation CNC- Construction features including structure- Drives and CNC controllers- 2D and 3D machining on CNC- Introduction of Part Programming, types - Detailed Manual part programming (FANUC) on Lathe & Milling machines using G codes and M codes- Cutting Cycles, Loops, Sub program and Macros- Introduction of CAM package.

UNIT V CELLULAR MANUFACTURING AND FLEXIBLE MANUFACTURING SYSTEM (FMS) 9

Group Technology(GT),Part Families–Parts Classification and coding–Simple Problems in Opitz Part Coding system–Production flow Analysis–Cellular Manufacturing–Composite part concept–Types of Flexibility - FMS – FMS Components – FMS Application & Benefits – FMS Planning and Control– Quantitative analysis in FMS

TOTAL : 45 PERIODS

OUTCOMES:

Upon the completion of this course the students will be able to

CO1 Explain the 2D and 3D transformations, clipping algorithm, Manufacturing models and Metrics

CO2 Explain the fundamentals of parametric curves, surfaces and Solids

CO3 Summarize the different types of Standard systems used in CAD

CO4 Apply NC & CNC programming concepts to develop part programme for Lathe & Milling Machines

CO5 Summarize the different types of techniques used in Cellular Manufacturing and FMS

TEXT BOOKS:

1. Ibrahim Zeid “Mastering CAD CAM” Tata McGraw-Hill PublishingCo.2007
2. Mikell.P.Groover “Automation, Production Systems and Computer Integrated Manufacturing”, Prentice Hall of India, 2008.
3. Radhakrishnan P, SubramanyanS.andRaju V., “CAD/CAM/CIM”, 2nd Edition, New Age International (P) Ltd, New Delhi,2000.

REFERENCES:

1. Chris McMahon and Jimmie Browne “CAD/CAM Principles", "Practice and Manufacturing management “ Second Edition, Pearson Education, 1999.
2. Donald Hearn and M. Pauline Baker “Computer Graphics”’. Prentice Hall, Inc,1992.
3. Foley, Wan Dam, Feiner and Hughes - "Computer graphics principles & practice" Pearson Education -2003
4. William M Neumann and Robert F.Sproul “Principles of Computer Graphics”, McGraw Hill Book Co. Singapore, 1989.

MT8701 ROBOTICS AND MACHINE VISION SYSTEM

L	T	P	C
3	0	0	3

OBJECTIVE:

Students will learn about basics of robots, programming and machine vision applications in robots

UNIT I BASICS OF ROBOTICS 9

Introduction- Basic components of robot-Laws of robotics- classification of robot-work space-accuracy-resolution –repeatability of robot. Power transmission system: Rotary to rotary motion, Rotary to linear motion, Harmonics drives – gear system - belt drives.

UNIT II ROBOT END EFFECTORS 9

Robot End effectors: Introduction- types of End effectors- Mechanical gripper- types of gripper mechanism- gripper force analysis- other types of gripper- special purpose grippers.

UNIT III ROBOT MECHANICS 10

Robot kinematics: Introduction- Matrix representation- rigid motion & homogeneous transformation-forward & inverse kinematics- trajectory planning. Robot Dynamics: Introduction - Manipulator dynamics – Lagrange - Euler formulation- Newton - Euler formulation

UNIT IV ROBOT PROGRAMMING 8

Robot programming: Robot Languages- Classification of robot language-Computer control and robot software-Val system and Languages- application of robots.

UNIT V MACHINE VISION FUNDAMENTALS 9

Machine vision: image acquisition, digital images-sampling and quantization-levels of computation Feature extraction-windowing technique- segmentation- Thresholding- edge detection- binary morphology - grey morphology

TOTAL :45 PERIODS

OUTCOMES:

Upon completion of this course, the students can able to

CO1: Express the basic concepts, laws, components and parameters of robots
CO2: Explain the types of grippers and its functions.
CO3: Evaluate the kinematic calculations and apply Lagrangian and Newton-Euler methods to analyze dynamic characteristics of robots
CO4: Describing the various programming techniques used in industrial robots
CO5: Basis of machine vision and apply the concept of image processing

TEXT BOOK:

1. M.P.Groover, M.Weiss ,R.N. Nagal, N.G.Odrey, "Industrial Robotics - Technology, programming and Applications" Tata , McGraw-Hill Education Pvt Limited 2nd Edition, 2012

REFERENCES:

1. John.J.Craig, " Introduction to Robotics: Mechanics & control"Pearson Publication, Fourth edition, 2018.
2. Jazar, "Theory of Applied Robotics: Kinematics, Dynamics and Control", Springer, 2nd Edition, 2010
3. K.S.Fu, R.C.Gonzalez, C.S.G.Lee, "Robotics: Sensing, Vision & Intelligence", Tata McGraw-Hill Publication, First Edition, 1987.
4. Sathya Ranjan Deb, "Robotics Technology & flexible Automation" Second edition, Tata McGraw-Hill Publication, 2009.

MT8791 **EMBEDDED SYSTEM DESIGN** **L T P C**
2 0 2 3

OBJECTIVES:

- To provide the overview of embedded system design principles
- To understand the concepts of real time operating systems
- To provide exposure to embedded system development tools with hands on experience in using basic programming techniques.

UNIT I INTRODUCTION TO EMBEDDED SYSTEMS 7

Overview of embedded systems, embedded system design process, challenges - common design metrics and optimizing them. Hardware - Software codesign embedded product development.

UNIT II REAL TIME OPERATING SYSTEM 7

Real time operating systems Architecture - Tasks and Task states - Tasks and Data - Semaphone and shared data - Message queues, mail boxes and pipes - Encapsulating semaphores and queues - interrupt routines in an RTOS Environment. Introduction to Vx works, R_T Linux.

UNIT III PIC MICROCONTROLLER 9

Architecture - Instruction set - Addressing modes - Timers - Interrupt logic - CCP modules - ADC.

UNIT IV EMBEDDED NETWORKING 7

Introduction - CAN BUS - I^2C **-** GSM - GPRS - Zig bee.

UNIT V EMBEDDED PROGRAMMING LABORATORY : LIST OF EXPERIMENTS 30

I/O Programming
Interrupts and Timer application
Interfacing Keypad
Interfacing LCD
Interfacing ADC/DAC

TOTAL : 60 PERIODS

OUTCOMES:

CO1. Explain the need of embedded systems and their development procedures.
CO2. Summaries the concepts involved in Real time operating systems.
CO3. Use various tools for developing embedded applications.
CO4. Explain the construction, addressing modes and instructions sets of PIC micro controller.
CO5. Conduct experiments with I/O systems used in embedded systems.

TEXT BOOKS:

1. Frank Vahid, Tony John Givargis, Embedded System Design: A Unified Hardware/ Software Introduction - Wiley & Sons, Inc.2002 .
2. Rajkamal, ‘Embedded System – Architecture, Programming, Design’, Tata Mc Graw Hill, 2011
3. John B. Peatman, “Design with PIC Microcontrollers” Prentice Hall, 2003.

REFERENCES

1. Steve Heath, ‘Embedded System Design’, II edition, Elsevier, 2003.
2. David E. Simon, “An embedded software primer”, Addison – Wesley, Indian Edition Reprint (2009).
3. Robert Foludi “Building Wireless Sensor Networks”, O’Reilly, 2011.

MT8801	AUTOMOTIVE ELECTRONICS	L	T	P	C
		3	0	0	3

OBJECTIVES:

- The intention and purpose of this course is to study the basics of electronics, emission controls and its Importance in automobiles.
- To study the various sensors and actuators used in automobiles for improving fuel economy and emission control.
- To study the various blocks of control units used for control of fuel, ignition and exhaust systems.

UNIT I INTRODUCTION 8

Evolution of electronics in automobiles – emission laws – introduction to Euro I, Euro II, Euro III, Euro IV, Euro V standards – Equivalent Bharat Standards. Charging systems: Working and design of charging circuit diagram – Alternators – Requirements of starting system - Starter motors and starter circuits.

UNIT II IGNITION AND INJECTION SYSTEMS 10

Ignition systems: Ignition fundamentals - Electronic ignition systems - Programmed Ignition – Distribution less ignition - Direct ignition – Spark Plugs. Electronic fuel Control: Basics of combustion – Engine fuelling and exhaust emissions – Electronic control of carburetion – Petrol fuel injection – Diesel fuel injection.

UNIT III SENSOR AND ACTUATORS IN AUTOMOTIVES 7

Working principle and characteristics of Airflow rate, Engine crankshaft angular position, Hall effect, Throttle angle, temperature, exhaust gas oxygen sensors – study of fuel injector, exhaust gas recirculation actuators, stepper motor actuator, vacuum operated actuator.

UNIT IV ENGINE CONTROL SYSTEMS 10

Control modes for fuel control-engine control subsystems – ignition control methodologies – different ECU's used in the engine management – block diagram of the engine management system. In vehicle networks: CAN standard, format of CAN standard – diagnostics systems in modern automobiles.

UNIT V CHASSIS AND SAFETY SYSTEMS 10

Traction control system – Cruise control system – electronic control of automatic transmission – antilock braking system – electronic suspension system – working of airbag and role of MEMS in airbag systems – centralized door locking system – climate control of cars.

TOTAL : 45 PERIODS

OUTCOMES:

After successful completion of this course, the students should be able to

CO1: Know the importance of emission standards in automobiles.
CO2: Understand the electronic fuel injection/ignition components and their function.
CO3: Choose and use sensors and equipment for measuring mechanical quantities, temperature and appropriate actuators.
CO4: Diagnose electronic engine control systems problems with appropriate diagnostic tools.
CO5: Analyses the chassis and vehicle safety system.

TEXT BOOK:

1. Ribbens, "Understanding Automotive Electronics", 8th Edition, Elsevier, Indian Reprint, 2013

REFERENCES

1. Barry Hollembeak, "Automotive Electricity, Electronics & Computer Controls", Delmar Publishers, 2001.
2. Richard K. Dupuy "Fuel System and Emission controls", Check Chart Publication, 2000.
3. Ronald. K. Jurgon, "Automotive Electronics Handbook", McGraw-Hill, 1999.
4. Tom Denton, "Automobile Electrical and Electronics Systems", Edward Arnold Publishers, 2000.

MG8892 **MARKETING MANAGEMENT** **L T P C**
3 0 0 3

OBJECTIVE:

- To enable students to deal with newer concepts of marketing concepts like strategic marketing segmentation, pricing, advertisement and strategic formulation. The course will enable a student to take up marketing as a professional career.

UNIT I MARKETING PROCESS 9

Definition, Marketing process, dynamics, needs, wants and demands, marketing concepts, environment, mix, types. Philosophies, selling versus marketing, organizations, industrial versus consumer marketing, consumer goods, industrial goods, product hierarchy.

UNIT II BUYING BEHAVIOUR AND MARKET SEGMENTATION 9

Cultural, demographic factors, motives, types, buying decisions, segmentation factors - demographic - Psycho graphic and geographic segmentation, process, patterns.

UNIT III PRODUCT PRICING AND MARKETING RESEARCH 9

Objectives, pricing, decisions and pricing methods, pricing management. Introduction, uses, process of marketing research.

UNIT IV MARKETING PLANNING AND STRATEGY FORMULATION 9

Components of marketing plan-strategy formulations and the marketing process, implementations, portfolio analysis, BCG, GEC grids.

UNIT V ADVERTISING, SALES PROMOTION AND DISTRIBUTION 9

Characteristics, impact, goals, types, and sales promotions - point of purchase - unique selling proposition. Characteristics, wholesaling, retailing, channel design, logistics, and modern trends in retailing, Modern Trends, e-Marketing.

TOTAL: 45 PERIODS

OUTCOME:

- The learning skills of Marketing will enhance the knowledge about Marketer's Practices and create insights on Advertising, Branding, Retailing and Marketing Research.

TEXTBOOKS:

1. Philip Kolter & Keller, "Marketing Management", 14th Edition, Prentice Hall of India, 2012.
2. Chandrasekar, K.S., "Marketing Management Text and Cases", 1st Edition, Tata McGraw Hill
   – Vijaynicole 2010.

REFERENCES:

1. Adrain palmer, " Introduction to Marketing Theory and practice", Oxford university press IE 2004.
2. Czinkota & Kotabe, "Marketing Management", Thomson learning, Indian edition 2007
3. Donald S. Tull and Hawkins, "Marketing Research", Prentice Hall of India-1997.
4. Graeme Drummond and John Ensor, "Introduction to marketing concepts", Elsevier, Indian Reprint, 2007.
5. Philip Kotler and Gary Armstrong "Principles of Marketing" Prentice Hall of India, 2000.
6. Ramasamy and Nama kumari, "Marketing Environment: Planning, implementation and control the Indian context", 1990.
7. Steven J.Skinner, "Marketing", All India Publishers and Distributes Ltd. 1998.

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2019-20

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
M.E. COMPUTER SCIENCE AND ENGINEERING
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM
CURRICULA AND SYLLABI

SEMESTER I

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA5160	Applied Probability and Statistics	FC	4	4	0	0	4
2.	CP5151	Advanced Data Structures and Algorithms	PC	4	4	0	0	4
3.	CP5152	Advanced Computer Architecture	PC	3	3	0	0	3
4.	CP5153	Operating System Internals	PC	3	3	0	0	3
5.	CP5154	Advanced Software Engineering	PC	3	3	0	0	3
6.	CP5191	Machine Learning Techniques	PC	3	3	0	0	3
PRACTICALS								
7.	CP5161	Data Structures Laboratory	PC	4	0	0	4	2
			TOTAL	24	20	0	4	22

SEMESTER II

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	CP5201	Network Design and Technologies	PC	3	3	0	0	3
2.	CP5291	Security Practices	PC	3	3	0	0	3
3.	CP5292	Internet of Things	PC	3	3	0	0	3
4.	CP5293	Big Data Analytics	PC	3	3	0	0	3
5.		Professional Elective –I	PE	3	3	0	0	3
6.		Professional Elective –II	PE	3	3	0	0	3
PRACTICALS								
7.	CP5261	Data Analytics Laboratory	PC	4	0	0	4	2
8.	CP5281	Term Paper Writing and Seminar	EEC	2	0	0	2	1
			TOTAL	24	18	0	6	21

SEMESTER III

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.		Professional Elective –III	PE	3	3	0	0	3
2.		Professional Elective –IV	PE	3	3	0	0	3
3.		Professional Elective –V	PE	3	3	0	0	3
PRACTICALS								
4.	CP5311	Project Work Phase – I	EEC	12	0	0	12	6
			TOTAL	21	9	0	12	15

SEMESTER IV

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
PRACTICALS								
1.	CP5411	Project Work Phase – II	EEC	24	0	0	24	12
			TOTAL	24	0	0	24	12

TOTAL NO. OF CREDITS:70

ANNA UNIVERSITY, CHENNAI
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SEMESTER I

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA5151	Advanced Mathematical Methods	FC	4	4	0	0	4
2.	ST5101	Advanced Concrete Structures	PC	3	3	0	0	3
3.	ST5102	Dynamics of Structures	PC	3	3	0	0	3
4.	ST5103	Theory of Elasticity and Plasticity	PC	3	3	0	0	3
5.		Professional Elective I	PE	3	3	0	0	3
6.		Professional Elective II	PE	3	3	0	0	3
			TOTAL	**19**	**19**	**0**	**0**	**19**

SEMESTER II

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	ST5201	Advanced Steel Structures	PC	3	3	0	0	3
2.	ST5202	Stability of Structures	PC	3	3	0	0	3
3.	ST5203	Experimental Techniques	PC	3	3	0	0	3
4.	ST5204	Finite Element Analysis of Structures	PC	3	3	0	0	3
5.		Professional Elective III	PE	3	3	0	0	3
6.		Professional Elective IV	PE	3	3	0	0	3
PRACTICAL								
7.	ST5211	Advanced Structural Engineering Laboratory	PC	4	0	0	4	2
8.	ST5212	Practical Training I (2 weeks)	EEC	0	0	0	0	1
			TOTAL	**22**	**18**	**0**	**4**	**21**

SEMESTER III

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	ST5301	Earthquake Analysis and Design of Structures	PC	3	3	0	0	3
2.		Professional Elective V	PE	3	3	0	0	3
3.		Professional Elective VI	PE	3	3	0	0	3
PRACTICAL								
4.	ST5311	Practical Training II (2 weeks)	EEC	0	0	0	0	1
5.	ST5312	Seminar	EEC	2	0	0	2	1
6.	ST5313	Project Work (Phase I)	EEC	12	0	0	12	6
			TOTAL	**23**	**9**	**0**	**14**	**17**

SEMESTER IV

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
PRACTICAL								
1.	ST5411	Practical Training III (2 weeks)	EEC	0	0	0	0	1
2.	ST5412	Project Work (Phase II)	EEC	24	0	0	24	12
			TOTAL	**24**	**0**	**0**	**24**	**13**

TOTAL NO. OF CREDITS: 70

ANNA UNIVERSITY :: CHENNAI - 600025.
OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of April / May Examination,2020 [R-2017].

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 02** **DATE OF PUBLICATION :15-08-2020**

Branch : 413-M.E. Structural Engineering

	Subject Code - >	ST5008	ST5009	ST5201	ST5202	ST5203	ST5204	ST5211	ST5212
Reg. Number	**Stud. Name**	**Grade**	**Grade**	**Grade**	**Grade**	**Grade**	**Grade**	**Grade**	**Grade**
312819413001	ABARNA M	O	O	A+	A+	A+	A+	O	O
312819413002	DIVYA N	O	O	A+	A+	A+	A+	O	O
312819413003	JANAKIRAMAN R	O	O	A	A	A	A	O	O
312819413004	MAHENDIRAN T	O	O	A+	A+	A+	A+	O	O
312819413005	MATHIVANAN K	O	O	A+	A+	A+	A+	O	O
312819413006	MOHAMED USAMA MAHIR S H	O	O	A+	A+	A+	A+	O	O
312819413007	NAVIN KUMAR L	A+	A+	B+	B+	B+	B+	O	O
312819413008	PRABHU G	A	B+	B	B	B	B	O	O
312819413009	RAHUL G	A+	A+	B+	A	A	A	O	O
312819413010	SIVAKUMAR K	O	O	A	A	A	A	O	O

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

ANNA UNIVERSITY :: CHENNAI - 600025.
OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of April / May Examination,2020 [R-2017].

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 02** **DATE OF PUBLICATION :15-08-2020**

Branch : 415-M.E. Power Electronics and Drives

	Subject Code - >	PS5071	PX5003	PX5201	PX5202	PX5211	PX5212	PX5251	PX5252
Reg. Number	**Stud. Name**	**Grade**	**Grade**	**Grade**	**Grade**	**Grade**	**Grade**	**Grade**	**Grade**
312819415001	GANESAMURTHY S	O	O	A	A	O	O	A	A
312819415002	MADHUMATHY S	O	O	A+	A+	O	O	A+	A+
312819415003	MAHESH BABU M	O	O	A	A	O	O	A	B+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

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OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of Nov. / Dec. Examination, 2019 [R-2017].

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 02** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 405-M.E. Computer Science and Engineering

	Subject Code - >	CP5071
Reg. Number	**Stud. Name**	**Grade**
312818405001	SOWMYA P	B+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : NA** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 405-M.E. Computer Science and Engineering

	Subject Code - >	CP5007	CP5191	MA5160
Reg. Number	Stud. Name	Grade	Grade	Grade
19244191176	SHINY		A	A
19244997246	JETLIN	A	A+	
19244997271	REVATHI	A	A+	

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Provisional Results of Nov. / Dec. Examination, 2019 [R-2017].

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 01** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 413-M.E. Structural Engineering

	Subject Code - >	MA5151	ST5001	ST5002	ST5101	ST5102	ST5103
Reg. Number	**Stud. Name**	**Grade**	**Grade**	**Grade**	**Grade**	**Grade**	**Grade**
312817413901	SUREKA D					B+	
312818413001	CHARLES J	U	B+	U	UA	U	B+
312818413003	DHAKSHAN KHANNA D	U			B+		UA
312818413007	SANKAR GURU S	U					
312818413008	VENKATESH K	U					

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 03** **DATE OF PUBLICATION :DD-MM-YYYY**

Branch : 413-M.E. Structural Engineering

	Subject Code - >	ST5012	ST5014	ST5015	ST5301	ST5311	ST5312	ST5313
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312817413003	HARI KUMAR J		B	B+				
312817413004	PRAKASH G			B+				
312817413005	PRASANNA K			U				
312818413001	CHARLES J	U	B		U	O	O	A+
312818413002	DELBIN DHAYA M K	U	B		B	O	O	A+
312818413003	DHAKSHAN KHANNA D	U	B		U	O	O	O
312818413004	DINUSHA ST	B+	B		UA	O	O	O
312818413005	GIRIJA G	B	B+		B+	O	O	O
312818413006	NEELAMBARI T	B+	A		A	O	O	O
312818413007	SANKAR GURU S	B	B+		U	O	O	A+
312818413008	VENKATESH K	B	B+		U	O	O	O

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

ANNA UNIVERSITY :: CHENNAI - 600025.
OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of April / May Examination,2020 [R-2017].

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 02** **DATE OF PUBLICATION :15-08-2020**

Branch : 403-M.E. Communication Systems

	Subject Code - >	CP5281	CU5094	CU5201	CU5211	CU5291	CU5292	DS5291	NC5251
Reg. Number	**Stud. Name**	**Grade**	**Grade**	**Grade**	**Grade**	**Grade**	**Grade**	**Grade**	**Grade**
312819403001	AMIRA THASNEEM K M	O	O	A+	O	A+	A+	O	O
312819403002	DEVADHARSHINI S L	O	O	A+	O	A+	A+	O	O
312819403003	KAVIYARASI V	O	O	A+	O	A+	A+	O	O
312819403005	REKA R	O	O	O	O	O	A+	O	O

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

ANNA UNIVERSITY :: CHENNAI - 600025.
OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of April / May Examination,2020 [R-2017].

Inst.Code/Name : 3128 - AGNI COLLEGE OF TECHNOLOGY **Semester No. : 02** **DATE OF PUBLICATION :15-08-2020**

Branch : 405-M.E. Computer Science and Engineering

	Subject Code - >	CP5071	CP5094	CP5201	CP5261	CP5281	CP5291	CP5292	CP5293
Reg. Number	Stud. Name	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
312819405001	PRIYA R	O	O	A+	O	O	A+	A+	A+

W - Withdrawal **I - Inadequate Attendance**

WH1 - Withheld for Suspected Malpractice **WH(others) - Withheld for want of Clarification,approval,etc.**

24-08-2020

Anna University - COE

ASHOK LEYLAND

27-Nov-19

TO WHOMSOEVER IT MAY CONCERN

This is to certify that

Mr.RAVICHANDRAN K

B.E (Mech) Student of

Agni College of Technology

has undergone Internship Training at Ashok Leyland,Hosur-I from 25/11/2019 to 27/11/2019

During the above period he has evinced keen interest in the training and we found his conduct to be good.

G. Ramesh
Senior Manager – HR

ASHOK LEYLAND LIMITED
175, Sipcot Industrial Complex, Hosur - 635 126. India.
t : +91 4344 276631 f : +91 4344 276067
e : reachus@ashokleyland.com
Regd. Office: No. 1, Sardar Patel Road, Guindy, Chennai - 600 032. India.
t : +91 44 2220 6000 f : +91 44 2220 6001
CIN : L34101TN1948PLC000105
www.ashokleyland.com

HINDUJA GROUP

BUTTERFLY GANDHIMATHI APPLIANCES LIMITED

BGMAL/HR/PROJ/19/55

Nov 22, 2019

To
M/s. AGNI COLLEGE OF TECHNOLOGY
OMR, THALAMBUR
CHENNAI - 600 130.

Sub: Grant of Permission for Internship – Reg:-

Dear Sir / Madam,

This is to certify that Mr. M. Ramakrishnan, along with Mr. R. Ayyappan , Mr. B. Febi Devi, Mr. R. Kesavan, Mr. A. Kishore and Mr. S. Sunilkumar second year B.E Student of M/s. Agni College of Technology.

Above the students are permitted to take up a Internship in our organization.

Thanking you,

Yours faithfully,

FOR BUTTERFLY GANDHIMATHI APPLIANCES LTD.,

N. SUKUMAR
ASST MANAGER – H.R

Regd. office: 143, Pudupakkam Village, Vandalur - Kelambakkam Road, Kelambakkam - Pin 603 103, Kancheepuram District, Phone +91-44-47415500
E- mail gmal@butterflyindia.com web www.butterflyindia.com /butterflygandhimathiappliances.com
Corporate Office: E-34 II Floor, Rajiv Gandhi Salai, Egattur Village, Navalur - 600 103, Kancheepuram District
Phone 044 - 49005100/5120 E- mail butterflyho@butterflyindia.com/ butterflyco@butterflyindia.com
CIN no is L29931TN1985PLC12728

appin
Technology Lab

Date: 02/12/2019

INTERNSHIP CERTIFICATE

This is to inform that **Mr. DILIPKISHNAA K,** 2nd year B.E., Mechanical Engineering student of **AGNI COLLEGE OF TECHNOLOGY,** Chennai, has attended Internship training in our organization from November 26th 2019 to December 02nd 2019.

During this Internship training, he has learned the overview concepts of **MACHINE LEARNING.**

Thanking You.

For APPIN TECHNOLOGY LAB,

Authorised Signatory

144, Sengupta Street, Near Hotel City Towers,
Ram Nagar, Coimbatore - 641009.

T : 0422 450 2000 • M : +91 - 77080 40308
www.appincoimbatore.com • E: info@appincoimbatore.com

appin
Technology Lab

Date: 03/12/2019

WORKSHOP CERTIFICATE

This is to inform that **Mr. DILIPKISHNAA K,** 2nd year B.E., Mechanical Engineering student of **AGNI COLLEGE OF TECHNOLOGY,** Chennai, has attended One Day Workshop in our organization on December 03rd 2019.

Title: MACHINE LEARNING.

Thanking You.

For APPIN TECHNOLOGY LAB,

Authorised Signatory.

144, Sengupta Street, Near Hotel City Towers,
Ram Nagar, Coimbatore - 641009.

T : 0422 450 2000 • M : +91 - 77080 40308
www.appincoimbatore.com • E: info@appincoimbatore.com

In Association with NPTEL NASSCOM USDLA

Date: 20-12-2019

TO WHOM IT MAY CONCERN

This is to certify that Mr. F. Sabeel Ahmed (312818114035) student of B.E (Mechanical Engineering), Agni college of Technology, has successfully completed (From 16th November, 2019 to 16th December, 2019) internship program at JMB Motor world LLP (Chennai). During the period of his internship program with us he was found punctual, hardworking and inquisitive.

Regards,

Vignesh.K

Human resources

JMB Group

JMB MOTORWORLD.LLP
JMB JAWA No M-78/6, 3rd Avenue, Anna Nagar East, Chennai - 600-102.
E : annanagar.jawamotorcycles@gmail.com M : +91 89395 81000

सवारी डिब्बा कारखाना, चेन्नै - 600038

रेल मंत्रालय की एक उत्पादन इकाई

INTEGRAL COACH FACTORY, CHENNAI - 600 038

A Production Unit Under Ministry of Railways

(AN ISO: 9001, ISO:14001 AND BS : 18001 CERTIFIED PRODUCTION UNIT)

Sl.No. : M/440/2019

Date : 24.06.19

सत्यमेव जयते

Certificate

This is to certify that Mr./~~Ms.~~ P. AJITH

Regn.No 312817114003 Course BE

Branch MECHANICAL, III Year, Student of

AGNI COLLEGE OF TECHNOLOGY,

has undergone Inplant Training from 17.06.19 to 24.06.19

at Integral Coach Factory.

Principal

Technical Training Centre

ICF, Chennai-38

सवारी डिब्बा कारखाना, चेन्नै - 600 038

रेल मंत्रालय की एक उत्पादन इकाई

INTEGRAL COACH FACTORY, CHENNAI - 600 038

A Production Unit Under Ministry of Railways

(AN ISO: 9001, ISO:14001 AND BS : 18001 CERTIFIED PRODUCTION UNIT)

Sl.No. : M/441/2019

Date : 24.06.19

Certificate

This is to certify that Mr./~~Ms.~~ N. AJAY DEEPAK

Regn.No 312817114002 Course BE

Branch MECHANICAL, III Year, Student of

AGNI COLLEGE OF TECHNOLOGY,

has undergone Inplant Training from 17.06.2019 to 24.06.2019

at Integral Coach Factory.

Principal

Technical Training Centre

ICF, Chennai-38

सवारी डिब्बा कारखाना, चेन्नै - 600038

रेल मंत्रालय की एक उत्पादन इकाई

INTEGRAL COACH FACTORY, CHENNAI - 600 038

A Production Unit Under Ministry of Railways

(AN ISO: 9001, ISO:14001 AND BS : 18001 CERTIFIED PRODUCTION UNIT)

Sl.No. : M/442/2019

Date : 24.06.19

Certificate

This is to certify that Mr./~~Ms.~~ KUMARAPPAN : MR : M

Regn.No 312817114040 Course BE

Branch MECHANICAL, III Year, Student of

AGNI COLLEGE OF TECHNOLOGY,

has undergone Inplant Training from 17:06:19 to 24:06:19

at Integral Coach Factory.

Principal

Technical Training Centre

ICF, Chennai-38

सवारी डिब्बा कारखाना, चेन्नै - 600 038

रेल मंत्रालय की एक उत्पादन इकाई

INTEGRAL COACH FACTORY, CHENNAI - 600 038

A Production Unit Under Ministry of Railways

(AN ISO: 9001, ISO:14001 AND BS : 18001 CERTIFIED PRODUCTION UNIT)

Sl.No. : M/443/2019

Date : 24.06.19

Certificate

This is to certify that Mr./~~Ms.~~ J. MANORANJAN

Regn.No 312817114044 Course BE

Branch MECHANICAL, III Year, Student of

AGNI COLLEGE OF TECHNOLOGY,

has undergone Inplant Training from 17.06.19 to 24.06.19

at Integral Coach Factory.

Principal
Technical Training Centre
ICF, Chennai-38

सवारी डिब्बा कारखाना, चेन्नै - 600 038

रेल मंत्रालय की एक उत्पादन इकाई

INTEGRAL COACH FACTORY, CHENNAI - 600 038

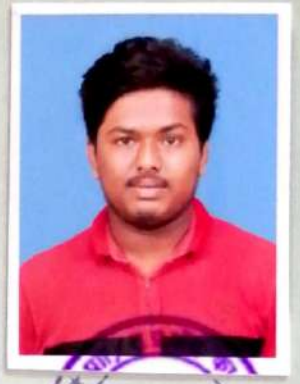
A Production Unit Under Ministry of Railways

(AN ISO: 9001, ISO:14001 AND BS : 18001 CERTIFIED PRODUCTION UNIT)

Sl.No. : M/444/2019

Date : 24.06.19

Certificate



This is to certify that Mr./~~Ms.~~ C. KARTHICK

Regn.No 312817114033 Course B.E

Branch MECHANICAL, III Year, Student of

AGNI COLLEGE OF TECHNOLOGY,

has undergone Inplant Training from 17.06.19 to 24.06.19

at Integral Coach Factory.

Principal

Technical Training Centre

ICF, Chennai-38

सवारी डिब्बा कारखाना, चेन्नै - 600 038

रेल मंत्रालय की एक उत्पादन इकाई

INTEGRAL COACH FACTORY, CHENNAI - 600 038

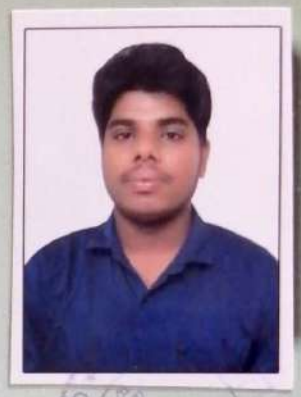
A Production Unit Under Ministry of Railways

(AN ISO: 9001, ISO:14001 AND BS : 18001 CERTIFIED PRODUCTION UNIT)

Sl.No. : M/445/2019

Date : 24.06.19

Certificate



This is to certify that Mr./~~Ms.~~ S. AYYAPPAN

Regn.No 312817114016 Course BE

Branch MECHANICAL, III Year, Student of

AGNI COLLEGE OF TECHNOLOGY,

has undergone Inplant Training from 17.06.19 to 24.06.19

at Integral Coach Factory.

Principal

Technical Training Centre

ICF, Chennai-38

Date: Nov.05,2019

TO WHOM SO EVER IT MAY CONCERN

This is to inform that Mr.Balaji.S (Reg No.: 312816114019) B.E Mechanical Engineering, Final year student , college of Agni college of technology , is granted permission to carry out the internship program in R&D – Engineering design using software UGNX at Nexteer Automotive India private Limited , Mahindra city, Chennai , Plant 84 from Dec.04,2019 to Dec.24,2019.

During these period, the above candidate is expected to maintain a strict confidentiality about the matters related to our organization. No stipend will be paid to them during this program.

For Nexteer Automotive India Pvt Ltd

E. Srikanth

AUTHORIZED SIGNATORY

NEXTEER AUTOMOTIVE INDIA PRIVATE LIMITED Mahindra World City Chengalpattu

Regd. Office & Plant 81 at:
Nexteer Automotive India Private Limited
CIN: U35990KA2008PTC045490
Plot No. 98A, Phase II, KIADB Industrial Area, Jigani, Anekal Taluk, Bangalore-560105, INDIA
Tel: [91] [80] 71721100, Fax: [91] [80] 27825462 / 27826290 www.nexteer.com

Plant 84 at:
Nexteer Automotive India Private Limited
Plot No 6, Mahindra World City, Phase – V,
Chengalpattu –603004,Tamilnadu,India
Tel: 04467468200

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi S. BHARKAVI

III YR. B.TECH., CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

NESAPAKKAM STP ON 22.11.19

Dy.DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi A. KEERTHANA

III YR. B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

NESAPAKKAM STP ON 22.11.19

Dy.DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi K. YUVALAKSHMI

III YR. B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

NESAPAKKAM STP ON 22.11.19

Dy.DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi R. RUPALISHA

III YR. B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

NESAPAKKAM STP ON 22.11.19

Dy. DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi R. JEYASURYA RAJ

III YR. B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

NESAPAKKAM STP ON 22.11.19

Dy.DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi R. ATCHAYA

III YR. B.TECH CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

KOYAMBEDU STP ON 22.11.19

Dy.DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi S. OOVIYA

III YEAR B. TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

KOYAMBEDU STP ON 22.11.19

Dy. DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi A. MANIARASAN

III YR. B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

KOYAMBEDU STP ON 22.11.19

Dy.DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi K. RAJKUMAR
III YR. B.TECH CHEMICAL ENGG.
AGNI COLLEGE OF TECHNOLOGY

has
Undergone Inplant Training at

KOYAMBEDU STP ON 22.11.19

Dy.DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi R. DEEPIKA

III YR. B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

KOYAMBEDU STP ON 25.11.19

Dy.DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi G. GOWRI
III YR. B.TECH. CHEMICAL ENGG.
AGNI COLLEGE OF TECHNOLOGY

has
Undergone Inplant Training at

KOYAMBEDU STP ON 25.11.19

Dy.DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi S. KARTHIKEYAN

III YR. B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

KOYAMBEDU STP ON 25.11.19

Dy.DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi S. ANANTHA KUMAR

III YR. B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

KOYAMBEDU STP ON 25.11.19

Dy.DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi M. KAVIN

II YEAR B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

KOYAMBEDU STP ON 04.12.2019

Dy.DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi I. SRIPRAKASH

II YEAR B.TECH CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

KOYAMBEDU STP ON 02.12.2019

Dy.DIRECTOR
(TRAINING CENTRE)

J-TECH INSTRUMENTS

CERTIFICATE OF INTERNSHIP

This is to certify that Mr. / ~~Ms.~~ .....M. LENIN..... student of ..Agni...College...of... .....Technology.....Studying ..B.E...Mechanical...and...Automation...Engineering (2017-21). has successfully completed the internship program in the field of Basic...Mechanical and..Electrical for ..6... days from 21/11/2019. to .27/11/2019.

During the period of his / ~~her~~ internship program with us, performance and attitude was good.

Manager - HR

DATE : 27/11/2019

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi R. BAVEN HRITHICK

II YEAR B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

KOYAMBEDU STP ON 21.11.2019

Dy. DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi D. SANKAR

II YEAR B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

KOYAMBEDU STP ON 21.11.2019

Dy. DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi M. RAGURAMAN

II YEAR B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

KOYAMBEDU STP ON 02.12.2019

Dy.DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi R. NARAYANAN

II YEAR B.TECH CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

KOYAMBEDU STP ON 03.12.2019

Dy.DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi S. PUGAZHENDHI

II YEAR B.TECH CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

KOYAMBEDU STP ON 03.12.2019

Dy.DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi K. BRINDHA

II YEAR B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

KOYAMBEDU STP ON 03.12.2019

Dy. DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi M. KARTHIK

II YEAR B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

KOYAMBEDU STP ON 06.12.2019

Dy. DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi M. KISHORE SINGH

II YEAR B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

KOYAMBEDU STP ON 06.12.2019

Dy. DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi S. SHAFIYA

II YEAR B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

KOYAMBEDU STP ON 06.12.2019

Dy. DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi P. SOUNDARYA

II YEAR B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

KOYAMBEDU STP ON 06.12.2019

Dy. DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi D. JEEVITHA

II YEAR B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

KOYAMBEDU STP ON 06.12.2019

Dy. DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi S. DEEPIKA

II YEAR B.TECH CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

KOYAMBEDU STP ON 03.12.2019

Dy. DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi N. BALAJI

II YEAR B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

PERUNGUDI STP ON 21.11.2019

Dy. DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi M. MOHAMED NIYASUDEEN

II YEAR B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

PERUNGUDI STP ON 21.11.2019

Dy.DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi R. ARUNACHALAM

II YEAR B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

PERUNGUDI STP ON 21.11.2019

Dy. DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi M. ANANTHARAJ

II YEAR B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

PERONGUDI STP ON 21.11.2019

Dy. DIRECTOR

(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi M. MANIMARAN

II YEAR B.TECH. CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

PERUNGUDI STP ON 21. 11. 2019

Dy. DIRECTOR
(TRAINING CENTRE)

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

This is to certify that

Th/Tmt/Selvi A. DEEBIGA

II YEAR B.TECH CHEMICAL ENGG.

AGNI COLLEGE OF TECHNOLOGY

has

Undergone Inplant Training at

PERUNGUDI STP ON 04.12.2019

Dy. DIRECTOR
(TRAINING CENTRE)

aavin
TAMILNADU CO-OPERATIVE MILK PRODUCERS' FEDERATION LIMITED,
Joint Managing Directors' Office
29 & 30 Industrial Estate, Ambattur, Chennai - 600 098.

Date:27.01.2020

Ref.No.2075/HRD/2016

CERTIFICATE

This is to certify that Ms.K.Yuvalakshmi, III year (Chemical Engineering) Agni College of Technology, Chennai-600 130 had Undergone In-plant Training in Tamil Nadu Co-operative Milk Producer's Federation Limited at Sholinganallur Dairy for the period 26.11.2019 to 28.11.2019 and completed the same satisfactorily.

Manager(HRD&QMS)

Direct : Phone No. 23464534 & 23464535, Pbx No.13, Phone No.23464528 to 533 Fax : 044-23464536 Grams : "AAVINAMBA"
Website : www.aavin.com E-mail : aavingm@bsnl.in

TAMILNADU CO-OPERATIVE MILK PRODUCERS' FEDERATION LIMITED,
Joint Managing Directors' Office
29 & 30 Industrial Estate, Ambattur, Chennai - 600 098.

Ref.No.2075/HRD/2016

Date:27.01.2020

CERTIFICATE

This is to certify that Ms.D.Harini, III year (Chemical Engineering) Agni College of Technology, Chennai-600 130 had Undergone In-plant Training in Tamil Nadu Co-operative Milk Producer's Federation Limited at Sholinganallur Dairy for the period 26.11.2019 to 28.11.2019 and completed the same satisfactorily.

Manager(HRD&QMS)

Direct : Phone No. 23464534 & 23464535, Pbx No.13, Phone No.23464528 to 533 Fax : 044-23464536 Grams : "AAVINAMBA"
Website : www.aavin.com E-mail : aavingm@bsnl.in

TAMILNADU CO-OPERATIVE MILK PRODUCERS' FEDERATION LIMITED,
Joint Managing Directors' Office
29 & 30 Industrial Estate, Ambattur, Chennai - 600 098.

Ref.No.2075/HRD/2016 Date:31.01.2020

CERTIFICATE

This is to certify that Ms.A.Keerthana, III year Bio.Tech (Chemical Engineering) Agni College of Technology, OMR, Thalambur, Chennai-600 130 had Undergone In-plant Training in Tamil Nadu Co-operative Milk Producer's Federation Limited at Sholinganallur Dairy for the period 02.12.2019 to 04.12.2019 and completed the same satisfactorily.

Manager(HRD&QMS)

Direct : Phone No. 23464534 & 23464535, Pbx No.13, Phone No.23464528 to 533 Fax : 044-23464536 Grams : "AAVINAMBA"
Website : www.aavin.com E-mail : aavingm@bsnl.in

TAMILNADU CO-OPERATIVE MILK PRODUCERS' FEDERATION LIMITED,
Joint Managing Directors' Office
29 & 30 Industrial Estate, Ambattur, Chennai - 600 098.

Ref.No.2075/HRD/2016

Date:31.01.2020

CERTIFICATE

This is to certify that Ms.M.Menaga, III year Bio.Tech (Chemical Engineering) Agni College of Technology, OMR, Thalambur, Chennai-600 130 had Undergone In-plant Training in Tamil Nadu Co-operative Milk Producer's Federation Limited at Sholinganallur Dairy for the period 02.12.2019 to 04.12.2019 and completed the same satisfactorily.

Manager(HRD&QMS)

Direct : Phone No. 23464534 & 23464535, Pbx No.13, Phone No.23464528 to 533 Fax : 044-23464536 Grams : "AAVINAMBA"
Website : www.aavin.com E-mail : aavingm@bsnl.in

99435-15027

SRUTHI CHEMICALS PVT. LTD.,

Next to Distillery Unit, M/s. Kothari Sugars & Chemicals Ltd., Kattur, Lalgudi Tk., TRICHY - 621 706. ✆ : 0431-6532878

Ref. :

Date : 25.11.2019

CERTIFICATE

This is to certify that Mr. R.Anbu selvan, III year Chemical Engineering student of Agni College of Technology, Chennai has attended in- plant training in our plant from 22-11-2019 to 23-11-2019.

During this period his conduct was good and satisfactory.

For Sruthi Chemicals Pvt. Ltd.

R. Ba

Authorized Signatory

Regd. Off. : 119, Sandaipet Main Road, (Behind Sandaipettai), Shevapet, SALEM - 636 002. ✆ 2319935

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Next to Distillery Unit, M/s. Kothari Sugars & Chemicals Ltd., Kattur, Lalgudi Tk., TRICHY - 621 706. ✆ : 0431-6532878

Ref. :

Date :

25.11.2019

CERTIFICATE

This is to certify that Mr. S.Dinesh Kumar, III year Chemical Engineering student of Agni College of Technology, Chennai has attended in-plant training in our plant from 22-11-2019 to 23-11-2019.

During this period his conduct was good and satisfactory.

For Sruthi Chemicals Pvt. Ltd.

Authorized Signatory

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SRUTHI CHEMICALS PVT. LTD.,

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Ref. :

Date :

25.11.2019

CERTIFICATE

This is to certify that Mr. B. Vengatesh, III year Chemical Engineering student of Agni College of Technology, Chennai has attended in- plant training in our plant from 22-11-2019 to 23-11-2019.

During this period his conduct was good and satisfactory.

For Sruthi Chemicals Pvt. Ltd.

Authorized Signatory

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Next to Distillery Unit, M/s. Kothari Sugars & Chemicals Ltd., Kattur, Lalgudi Tk., TRICHY - 621 706. ✆ : 0431-6532878

Ref. :

Date :

25.11.2019

CERTIFICATE

This is to certify that Mr. M. Kapil, III year Chemical Engineering student of Agni College of Technology, Chennai has attended in- plant training in our plant from 22-11-2019 to 23-11-2019.

During this period his conduct was good and satisfactory.

For Sruthi Chemicals Pvt. Ltd.

Authorized Signatory

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Ref. :

Date :

25.11.2019

CERTIFICATE

This is to certify that Mr. M. Praveen Kumar, III year Chemical Engineering student of Agni College of Technology, Chennai has attended in-plant training in our plant from 22-11-2019 to 23-11-2019.

During this period his conduct was good and satisfactory.

For Sruthi Chemicals Pvt. Ltd.

Authorized Signatory

Regd. Off. : 119, Sandaipet Main Road, (Behind Sandaipettai), Shevapet, SALEM - 636 002. ✆ 2319935

Date: 06th Dec 2019

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Ref. :

Date :

25.11.2019

CERTIFICATE

This is to certify that Mr. K.Hari Haran, III year Chemical Engineering student of Agni College of Technology, Chennai has attended in- plant training in our plant from 22-11-2019 to 23-11-2019.

During this period his conduct was good and satisfactory.

For Sruthi Chemicals Pvt. Ltd.

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Ref. :

Date :

25.11.2019

CERTIFICATE

This is to certify that Mr. S. Bharath, III year Chemical Engineering student of Agni College of Technology, Chennai has attended in- plant training in our plant from 22-11-2019 to 23-11-2019.

During this period his conduct was good and satisfactory.

For Sruthi Chemicals Pvt. Ltd.

Authorized Signatory

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Date: 06th Dec 2019

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Ref. :

Date :

25.11.2019

CERTIFICATE

This is to certify that Mr. R. Deva Raj, III year Chemical Engineering student of Agni College of Technology, Chennai has attended in- plant training in our plant from 22-11-2019 to 23-11-2019.

During this period his conduct was good and satisfactory.

For Sruthi Chemicals Pvt. Ltd.

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Ref. :

Date :

25.11.2019

CERTIFICATE

This is to certify that Mr. B. Sakthivel, III year Chemical Engineering student of Agni College of Technology, Chennai has attended in- plant training in our plant from 22-11-2019 to 23-11-2019.

During this period his conduct was good and satisfactory.

For Sruthi Chemicals Pvt. Ltd.

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Ref. :

Date :

25.11.2019

CERTIFICATE

This is to certify that Mr. V.Asai Thambi, III year Chemical Engineering student of Agni College of Technology, Chennai has attended in- plant training in our plant from 22-11-2019 to 23-11-2019.

During this period his conduct was good and satisfactory.

For Sruthi Chemicals Pvt. Ltd.

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Ref. :

Date :

25.11.2019

CERTIFICATE

This is to certify that Mr. T. Sugumar, III year Chemical Engineering student of Agni College of Technology, Chennai has attended in- plant training in our plant from 22-11-2019 to 23-11-2019.

During this period his conduct was good and satisfactory.

For Sruthi Chemicals Pvt. Ltd.

Authorized Signatory

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Ref. :

Date :

25.11.2019

CERTIFICATE

This is to certify that Mr. J. Jayaraj, III year Chemical Engineering student of Agni College of Technology, Chennai has attended in- plant training in our plant from 22-11-2019 to 23-11-2019.

During this period his conduct was good and satisfactory.

For Sruthi Chemicals Pvt. Ltd.

Authorized Signatory

Regd. Off. : 119, Sandaipet Main Road, (Behind Sandaipettai), Shevapet, SALEM - 636 002. ✆ 2319935

SPIC

Date: 06th Dec 2019

CERTIFICATE

This is to certify that Mr. J.Jayapravin Third Year, B.Tech - Chemical Engineering student of Agni College of Technology at Chennai has undergone In-plant Training in "M/s - Southern Petrochemical Industries Corporation Limited" SPIC Nagar, Tuticorin.

Internship Training details are as furnished below:

1) Type of Training Imparted	:	IN-PLANT TRAINING
2) Period of Institutional Training	:	25th Nov 2019 to 06th Dec 2019
3) Allotment of Department	:	ALF3
4) Conduct & Character	:	GOOD
5) Performance during Training	:	GOOD
6) Attendance during Training	:	REGULAR

6/12/2019

SPIC TRAINING CENTRE TUTICORIN 628 005 SPIC NAGAR

T. Saravanan
Sr. Manager – Training & Development

Southern Petrochemical Industries Corporation Limited
(CIN: L11101TN1969PLC005778)
Factory: SPIC Nagar, Muthiahpuram Post, Tuticorin 628 005 Tamilnadu, India
Phone : +91 (0461) 2355401 | Fax: +91 (461) 2355588 | Email: spiccorp@spic.co.in | www.spic.in

SPIC

Date: 06th Dec 2019

CERTIFICATE

This is to certify that **Mr. B.Jai Vignesh** Third Year, **B.Tech - Chemical Engineering** student of Agni College of Technology at Chennai has undergone In-plant Training in "**M/s - Southern Petrochemical Industries Corporation Limited**" SPIC Nagar, Tuticorin.

Internship Training details are as furnished below:

1) Type of Training Imparted	:	**IN-PLANT TRAINING**
2) Period of Institutional Training	:	**25th Nov 2019 to 06th Dec 2019**
3) Allotment of Department	:	**ALF3**
4) Conduct & Character	:	**GOOD**
5) Performance during Training	:	**GOOD**
6) Attendance during Training	:	**REGULAR**

SPIC TRAINING CENTRE TUTICORIN 628 005 SPIC NAGAR

6/12/2019

T. Saravanan

Sr. Manager – Training & Development

Southern Petrochemical Industries Corporation Limited
(CIN: L11101TN1969PLC005778)
Factory: SPIC Nagar, Muthiahpuram Post, Tuticorin 628 005 Tamilnadu, India
Phone : +91 (0461) 2355401 | Fax: +91 (461) 2355588 | Email: spiccorp@spic.co.in | www.spic.in

SPIC

Date: 06th Dec 2019

CERTIFICATE

This is to certify that **Mr. Akshay C V** Third Year, **B.Tech - Chemical Engineering** student of Agni College of Technology at Chennai has undergone In-plant Training in **"M/s - Southern Petrochemical Industries Corporation Limited"** SPIC Nagar, Tuticorin.

Internship Training details are as furnished below:

1) Type of Training Imparted	:	**IN-PLANT TRAINING**
2) Period of Institutional Training	:	**25th Nov 2019 to 06th Dec 2019**
3) Allotment of Department	:	**ALF3**
4) Conduct & Character	:	**GOOD**
5) Performance during Training	:	**GOOD**
6) Attendance during Training	:	**REGULAR**

SPIC TRAINING CENTRE TUTICORIN 628 005 SPIC NAGAR

6/12/2019

T. Saravanan
Sr. Manager – Training & Development

Southern Petrochemical Industries Corporation Limited
(CIN: L11101TN1969PLC005778)
Factory: SPIC Nagar, Muthiahpuram Post, Tuticorin 628 005 Tamilnadu, India
Phone : +91 (0461) 2355401 | Fax: +91 (461) 2355588 | Email: spiccorp@spic.co.in | www.spic.in

SNB

SNB AQUA

61/3-C, Chrompet salai, Nanmangalam
Chennai -600129
E-Mail -srinavaneethanaqua8556@gmail.com

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr.S.ANANTHAKUMAR, Third year B.Tech chemical engineering student of Agni College of Technology,OMR,Thalambur,Chennai -600130 has undergone inplant Training from 2nd DECEMBER 2019 to 3rd DECEMBER 2019 in our company.

During this period he has shown keep interest in understanding the process.

For SNB AQUA (PVT LTD)

S.Boominathan
Manager

For SRI NAVANEETHAM AQUA

Proprietor

SNB AQUA

SNB

61/3-C, Chrompet salai, Nanmangalam
Chennai -600129
E-Mail –srinavaneethanaqua8556@gmail.com

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr.V.PRASATH,** Third year B.Tech chemical engineering student of Agni College of Technology,OMR,Thalambur,Chennai -600130 has undergone inplant Training from 2nd DECEMBER 2019 to 3rd DECEMBER 2019 in our company.

During this period he has shown keep interest in understanding the process.

For SNB AQUA (PVT LTD)

S.Boominathan

For SRI NAVANEETHAM AQUA

Proprietor

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BIONEEMTEC INDIA PRIVATE LIMITED, CHENNAI

GOLDEN JUBILEE BIOTECH PARK FOR WOMEN SOCIETY, CHENNAI
Promoted by MS SWAMINATHAN RESEARCH FOUNDATION and DEPARTMENT OF BIOTECHNOLOGY, NEW DELHI.

TO WHOM SOEVER IT MAY CONCERN

This is to certify that Mr/Ms K. YUVALAKSHMI III yr B.Tech chemical Engg from ALGNC COLLEGE OF TECHNOLOGY has under gone GAS CHROMATOGRAPHY from 5.12.2019 to 7.12.2019 in our research facility center .

We wish all the success

Regards

Dr.M.Menaga , Director .

Bioneemtec India Private Ltd.,
Golden Jubilee Womens Biotech Park
Inside SIPCOT IT PARK,
Siruseri, Navalur, Chennai-603 103.
Kanchipuram Dist.

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TO WHOM SOEVER IT MAY CONCERN

This is to certify that Mr/Ms A. KEERTHANA III yr B.Tech chemical Engg. from ADHI COLLEGE OF TECHNOLOGY has under gone GAS CHROMATOGRAPHY from 5.12.2019 to 7.12.2019 in our research facility center .

We wish all the success

Regards

Dr.M.Menaga , Director .

Bioneemtec India Private Ltd,
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Inside SIPCOT IT PARK,
Siruseri, Navalur, Chennai-603 103.
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TO WHOM SOEVER IT MAY CONCERN

This is to certify that Mr/Ms R. KEERTHANA, III yr B.Tech chemical Engg from AGNI COLLEGE OF TECHNOLOGY has under gone GAS CHROMATOGRAPHY from 5.12.2019 to 7.12.2019 in our research facility center .

We wish all the success

Regards

Dr.M.Menaga, Director .

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Golden Jubilee Womens Biotech Park
Inside SIPCOT IT PARK,
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TO WHOM SOEVER IT MAY CONCERN

This is to certify that Mr/Ms D. HARINI IIIyr B.Tech chemical Engg from AGNI COLLEGE OF TECHNOLOGY has under gone GAS CHROMATOGRAPHY from 5.12.2019 to 7.12.2019 in our research facility center .

We wish all the success

Regards

Dr.M.Menaga , Director .

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TO WHOM SOEVER IT MAY CONCERN

This is to certify that Mr/Ms N. SIVAKUMAR, III yr B.Tech chemical Engg from AUTNT COLLEGE OF TECHNOLOGY has under gone NATURAL PRODUCT CHEMISTRY from 5.12.2019 to 7.12.2019 in our research facility center.

We wish all the success

Regards,

Dr.M.Menaga , Director .

Bioneemtec India Private Ltd.,
Golden Jubilee Womens Biotech Park
Inside SIPCOT IT PARK,
Siruseri, Navalur, Chennai-603 103.
Kanchipuram Dist
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TO WHOM SOEVER IT MAY CONCERN

This is to certify that Mr/Ms E. BHARATH III yr B.Tech chemical Engg from AGNI COLLEGE OF TECHNOLOGY has under gone NATURAL PRODOT CHEMISTRY from 5.12.2019 to 7.12.2019 in our research facility center .

We wish all the success

Regards

Dr.M.Menaga , Director .

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Kanchipuram Dist.

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TO WHOM SOEVER IT MAY CONCERN

This is to certify that Mr/Ms S. PUOTAZHENTHI IIyr B-Tech chemical Engg from ABINI COLLEGE OF TECHNOLOGY has under gone GAS CHROMATOGRAPHY from 5.12.2019 to 7.12.2019 in our research facility center .

We wish all the success

Regards

Dr.M.Menaga Director .

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TO WHOM SOEVER IT MAY CONCERN

This is to certify that Mr/Ms M.V. MADHURI DEVI, B.Tech IIyr chemical Engg from ALGNS COLLEGE OF TECHNOLOGY has under gone GAS CHROMATOGRAPHY from 5.12.2019 to 7.12.2019 in our research facility center .

We wish all the success

Regards

Dr.M.Meraga , Director .

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TO WHOM SOEVER IT MAY CONCERN

This is to certify that Mr/Ms K. BRINDHA Ilyr B.Tech chemical Engg from ACTNC COLLEGE OF TECHNOLOGY has under gone GAS CHROMATOGRAPHY from 5.12.2019 to 7.12.2019 in our research facility center .

We wish all the success

Regards

Dr.M.Menaga, Director .

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mobile :09600097329

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TO WHOM SOEVER IT MAY CONCERN

This is to certify that Mr/Ms C. VALLARASU, IIyr B.Tech chemical Engg from AUTNI COLLEGE OF TECHNOLOGY has under gone GAS CHROMATOGRAPHY from 5.12.2019 to 7.12.2019 in our research facility center .

We wish all the success

Regards

Dr.M.Menaga , Director .

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TO WHOM SOEVER IT MAY CONCERN

This is to certify that Mr/Ms I. SREEPRAKASH, III yr B.Tech chemial Engg from AVINI COLLEGE OF TECHNOLOGY has under gone GAS CHRONATOGRAPAY from 5.12.2019 to 7.12.2019 in our research facility center .

We wish all the success

Regards

Dr.M.Menaga , Director .

Bioneemtec India Private Ltd.,
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TO WHOM SOEVER IT MAY CONCERN

This is to certify that Mr/Ms M. RAGURAMAN, II yr B.Tech chemical Engg from ACTNE COLLEGE OF TECHNOLOGY has under gone GAS CHROMATOGRAPHY from 5.12.2019 to 7.12.2019 in our research facility center .

We wish all the success

Regards

Dr.M.Menaga , Director .

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TO WHOM SOEVER IT MAY CONCERN

This is to certify that Mr/Ms J. KANARAJ, IIyr B.Tech chemical Engg from AGNI COLLEGE OF TECHNOLOGY has under gone NATURAL PRODUCT CHEMISTRY from 5.12.2019 to 7.12.2019 in our research facility center.

We wish all the success

Regards

Dr.M.Menaga, Director.

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TO WHOM SOEVER IT MAY CONCERN

This is to certify that Mr/Ms CHANDRA SAKAR, B.Tech Pyrchemical Engg from AVINR COLLEGE OF TECHNOLOGY has under gone NATURAL PRODUCT CHEMISTRY from 5.12.2019 to 7.12.2019 in our research facility center .

We wish all the success

Regards

Dr.M.Menaga , Director .

Bioneemtec India Private Ltd
Golden Jubilee Womens Biotech Park
Inside SIPCOT IT PARK,
Siruseri, Navalur, Chennai-603 103.
Kanchipuram
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TO WHOM SOEVER IT MAY CONCERN

This is to certify that Mr/Ms T. NAVEENKUMAR, II yr B.Tech chemical Engg from AGNI COLLEGE OF TECHNOLOGY has under gone ENZYMOLOGY from 5-12-2019 to 7.12.2019 in our research facility center .

We wish all the success

Regards

Dr.M.Menaga , Director .

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Kanchipuram Dist.
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TO WHOM SOEVER IT MAY CONCERN

This is to certify that Mr/Ms E. INDIAN , II yr B.Tech chemical Engg from ANNA COLLEGE OF TECHNOLOGY has under gone ENZYMOLOGY from 5.12.2019 to 7.12.2019 in our research facility center .

We wish all the success

Regards

Dr.M.Menaga , Director .

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Golden Jubilee Womens Biotech Park
Inside SIPCOT IT PARK,
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Kanchipuram Dist.
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TO WHOM SOEVER IT MAY CONCERN

This is to certify that Mr/Ms M. KAVIN, II yr B.Tech chemical Engg from ACTAC COLLEGE OF TECHNOLOGY has under gone ENZYMOLOGY from 5.12.2019 to 7.12.2019 in our research facility center .

We wish all the success

Regards

Dr.M.Meraga , Director .

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mobile :09600097329

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TO WHOM SOEVER IT MAY CONCERN

This is to certify that Mr/Ms R. ANANTHA RAMAN, II yr B.Tech chemical Engg from ALANC COLLEGE OF TECHNOLOGY has under gone ENZYMOLOGY from 5-12-2019 to 7-12-2019 in our research facility center .

We wish all the success

Regards

Dr.M.Menaga , Director .

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Inside SIPCOT IT PARK,
Siruseri, Navalur, Chennai-603 103.
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TO WHOM SOEVER IT MAY CONCERN

This is to certify that Mr/Ms A. DEEBIGA, B.Tech II yr chemical Engg from ALTNP COLLEGE OF TECHNOLOGY has under gone MICROBIOLOGY from 5.12.2019 to 7.12.2019 in our research facility center .

We wish all the success

Regards

Dr.M.Menaga , Director .

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TO WHOM SOEVER IT MAY CONCERN

This is to certify that Mr/Ms M. BOOBALAN, IIyr B.Tech chemical Engg from AUTNC COLLEGE OF TECHNOLOGY has under gone MICROBIOLOGY from 5.12.2019 to 7.12.2019 in our research facility center .

We wish all the success

Regards

Dr.M.Menaga , Director .

Bioneemtec India Private Ltd, ...ioneemtec.com ; mail to :dr.bnt@rediffmail.com;magendran6@rediffmail.com;
Golden Jubilee Womens Biotech Park mobile :09600097329
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Promoted by MS SWAMINATHAN RESEARCH FOUNDATION and DEPARTMENT OF BIOTECHNOLOGY, NEW DELHI.

TO WHOM SOEVER IT MAY CONCERN

This is to certify that Mr/Ms D. SANKAR, B.Tech IIyr chemical Engg from AUTAR COLLEGE OF TECHNOLOGY has under gone MICROBIOLOGY from 5.12.2019 to 7.12.2019 in our research facility center .

We wish all the success

Regards

Dr.M.Menaga , Director .

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mobile :09600097329

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr/Ms. SYED HAMEED ANWARSAHIB.V IIIyr ch. Eng from AGNI COLLEGE OF TECHNOLOGY has successfullycompleted INTERNSHIP in BIO MOLECULES from 16.05.19 to 18.05.19 in our Research facility center .

We wish all the success!!!

Dr.M.Menaga , Director ,Bioneemtec India Private limited .

Bioneemtec India Private Ltd
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TO WHOMSOEVER IT MAY CONCERN

This is to certify that ~~Mr~~/Ms. G. MONISHA, III yr chemical. Eng from AGNI COLLEGE OF TECHNOLOGY has successfullycompleted INTERNSHIP in BIO MOLECULES from 16.05.19 to 18.05.19 in our Research facility center .

We wish all the success!!!

Dr.M.Menaga , Director ,Bioneemtec India Private limited .

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr/Ms. S. SOWNDARI , III yr chemical Eng from AGNI COLLEGE OF TECHNOLOGY has successfullycompleted INTERNSHIP in BIO MOLECULES from 16.05.19 to 18.05.19 in our Research facility center .

We wish all the success!!!

Dr.M.Menaga , Director ,Bioneemtec India Private limited .

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Kancheepuram Dist

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr/Ms. S. MOHAMED THALIF, III yr chemical. Eng from AGNI COLLEGE OF TECHNOLOGY has successfullycompleted INTERNSHIP in BIO MOLECULES from 16.05.19 to 18.05.19 in our Research facility center .

We wish all the success!!!

Dr.M.Menaga , Director ,Bioneemtec India Private limited .

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Kanchipuram Dist.

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr/Ms. E. ANAND III yr chemical Engg. from AGNI COLLEGE OF TECHNOLOGY has successfullycompleted INTERNSHIP in BIO MOLECULES from 16.05.19 to 18.05.19 in our Research facility center .

We wish all the success!!!

Dr.M.Menaga , Director ,Bioneemtec India Private limited .

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr/~~Ms.~~ S. AJAY , III yr chemical Eng. from AGNI COLLEGE OF TECHNOLOGY has successfullycompleted INTERNSHIP in BIO MOLECULES from 16.05.19 to 18.05.19 in our Research facility center .

We wish all the success!!!

Dr.M.Menaga , Director ,Bioneemtec India Private limited .

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr/Ms. K. DINESH KUMAR, IIIyr chemical. Eng from AGNI COLLEGE OF TECHNOLOGY has successfullycompleted INTERNSHIP in BIO MOLECULES from 16.05.19 to 18.05.19 in our Research facility center .

We wish all the success!!!

Dr.M.Menaga , Director ,Bioneemtec India Private limited .

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr/Ms. R. DEEPIKA, II yr B.Tech ch. Eng from AGNI COLLEGE OF TECHNOLOGY has successfullycompleted INTERNSHIP in BIO MOLECULES from 29.05.19 to 31.05.19 in our Research facility center .

We wish all the success!!!

Dr.M.Menaga , Director ,Bioneemtec India Private limited .

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr/Ms. G. GOWRI, I Yr B.Tech ch. Eng from AGNI COLLEGE OF TECHNOLOGY has successfullycompleted INTERNSHIP in BIO MOLECULES from 29.05.19 to 31.05.19 in our Research facility center.

We wish all the success!!!

Dr.M.Menaga, Director ,Bioneemtec India Private limited.

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr/Ms. S. KARTHICKEYAN, II yr B.Tech ch.Engg from AGNI COLLEGE OF TECHNOLOGY has successfullycompleted INTERSHIP in BIO MOLECULES from 29.05.19 to 31.05.19 in our Research facility center .

We wish all the success!!!

Dr.M.Menaga , Director ,Bioneemtec India Private limited .

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Thiruvidandai (P.O.), Kelambakkam
Kanchipuram Dist.

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(Supported by MS Swaminathan Research foundation, Chennai and Department of Biotechnology, New Delhi.)

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr/Ms. S. ANANTHAKUMAR, II yr B.Tech ch. Eng from AGNI COLLEGE OF TECHNOLOGY has successfullycompleted INTERNSHIP in BIO MOLECULES from 29.05.19 to 31.05.19 in our Research facility center .

We wish all the success!!!

Dr.M.Menaga , Director ,Bioneemtec India Private limited

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Kanchipuram Dist.
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Quantum
Drugs & Chemicals
25, Bharathi Ula Road, Race Course, Madurai-625 002. (T.N.) India.
Tel: ++91 (452) 4345116 Fax: 91 (452) 2568580 e-mail:quantumdrugs@gmail.com

Date: 01.01.2020
Place: Manamadurai

INTERNSHIP/ IN PLANT TRAINING CERTIFICATE

This is to certify that **Ms.K.GAYATHRI** (Reg.No.312817203017) pursuing her **B.Tech (Chemical Engineering) 3rd year at Agni College of Technology, Chennai** during the Academic year **2019-2020.** She has successfully completed In-plant Training at our premises Quantum Drugs & Chemicals, located at C-21, SIPCOT Industrial Complex, Manamadurai – 630606 from **02.12.2019 to 04.12.2019**. During this period of **three days** Training program, she had undergone training in various departments like Warehouse, Material handling & distribution, Production & Packing, Maintenance, Utilities Operations, Effluent Treatment Plant, Quality Control Lab and Quality Assurance department.

We found her sincere, technically sound and result oriented. We take this opportunity to thank and wish her all the best for her future.

Thanking you,
Yours faithfully,

For QUANTUM DRUGS & CHEMICALS
For QUANTUM DRUGS & CHEMICALS

VIJAY BABU
GENERAL MANAGER

M.B. VIJAY BABU
General Manager

QUANTUM DRUGS & CHEMICALS C-21, SIPCOT INDUSTRIAL COMPLEX MANAMADURAI-630606

Manufacturing Site: C-21, Sipcot Industrial Complex, Manamadurai-630606.India.
Phone No: +91-4574-258349,258331.

Quantum
Drugs & Chemicals
25, Bharathi Ula Road, Race Course, Madurai-625 002. (T.N.) India.
Tel: ++91 (452) 4345116 Fax: 91 (452) 2568580 e-mail:quantumdrugs@gmail.com

Date: 01.01.2020
Place: Manamadurai

INTERNSHIP/ IN PLANT TRAINING CERTIFICATE

This is to certify that **Mr.S.DINESH KUMAR** (Reg.No.312817203016), pursuing his **B.Tech (Chemical Engineering) 3rd year at Agni College of Technology, Chennai** during the Academic year **2019-2020.** He has successfully completed In-plant Training at our premises Quantum Drugs & Chemicals, located at C-21, SIPCOT Industrial Complex, Manamadurai – 630606 from **02.12.2019 to 04.12.2019**. During this period of **three days** Training program, he had undergone training in various departments like Warehouse, Material handling & distribution, Production & Packing, Maintenance, Utilities Operations, Effluent Treatment Plant, Quality Control Lab and Quality Assurance department.

We found him sincere, technically sound and result oriented. We take this opportunity to thank and wish him all the best for his future.

Thanking you,
Yours faithfully,

For QUANTUM DRUGS & CHEMICALS
For QUANTUM DRUGS & CHEMICALS

VIJAY BABU
GENERAL MANAGER

M.B. VIJAY BABU
General Manager

QUANTUM DRUGS & CHEMICALS C-21, SIPCOT INDUSTRIAL COMPLEX MANAMADURAI-630606

Manufacturing Site: C-21, Sipcot Industrial Complex, Manamadurai-630606.India.
Phone No: +91-4574-258349,258331.

Quantum
Drugs & Chemicals
25, Bharathi Ula Road, Race Course, Madurai-625 002. (T.N.) India.
Tel: ++91 (452) 4345116 Fax: 91 (452) 2568580 e-mail:quantumdrugs@gmail.com

Date: 01.01.2020
Place: Manamadurai

INTERNSHIP/ IN PLANT TRAINING CERTIFICATE

This is to certify that **Ms.S.BHARKAVI** (Reg.No.312817203013) pursuing her **B.Tech (Chemical Engineering) 3rd year at Agni College of Technology, Chennai** during the Academic year **2019-2020.** She has successfully completed In-plant Training at our premises Quantum Drugs & Chemicals, located at C-21, SIPCOT Industrial Complex, Manamadurai – 630606 from **02.12.2019 to 04.12.2019**. During this period of **three days** Training program, she had undergone training in various departments like Warehouse, Material handling & distribution, Production & Packing, Maintenance, Utilities Operations, Effluent Treatment Plant, Quality Control Lab and Quality Assurance department.

We found her sincere, technically sound and result oriented. We take this opportunity to thank and wish her all the best for her future.

Thanking you,
Yours faithfully,

For QUANTUM DRUGS & CHEMICALS

For QUANTUM DRUGS & CHEMICALS

VIJAY BABU
GENERAL MANAGER

M.B. VIJAY BABU
General Manager

QUANTUM DRUGS & CHEMICALS C-21, SIPCOT INDUSTRIAL COMPLEX MANAMADURAI-630606

Manufacturing Site: C-21, Sipcot Industrial Complex, Manamadurai-630606.India.
Phone No: +91-4574-258349,258331.

S.V. CHEM
Intermediates Private Limited

INPLANT TRAINING- CERTIFICATE

SVC/AD/2019-20/03

Date: 03/12/2019

To:

Mr.E.INIYAN

AGNI COLLEGE OF TECHNOLOGY

THALAMBUR,

CHENNAI-130.

SUB: Certificate for In Plant Training

Dear Sir,

This is to Certify that Mr.E.INIYAN Reg No:-312818203013 , II B.Tech Chem.Engg of your College has done "IN PLANT TRAINING "in our Organization during the period of 02th Dec 2019 – 03th Dec 2019. His Overall performance including his Conduct and Character during above mentioned period was Good.

We wish our very best for his new endeavor

For S.V. Chem Intermedites Pvt. Ltd.

VSkumar
03/12/19

Authorized Signatory

No 52, SIDCO Industrial Estate, Alathur, Thirupporor - 603 110 Kanchipuram Dist. Tamilnadu, India. ✆: 044-27444449 / 9840145111
e-mail:svccomm@svchempeptide.com / svcadmin@svchempeptide.com
CIN No . U24231 TN 2005 PTC055220 GSTIN / UIN : 33AAJCS1885R1ZK

S.V. CHEM
Intermediates Private Limited

INPLANT TRAINING- CERTIFICATE

SVC/AD/2019-20/03

Date: 03/12/2019

To:
Ms.S.SHAFIYA
AGNI COLLEGE OF TECHNOLOGY
THALAMBUR,
CHENNAI-130.

SUB: Certificate for In Plant Training

Dear Sir,

This is to Certify that **Ms.S.SHAFIYA** **Reg No:-312818203034** , II B.Tech Chem.Engg of your College has done "IN PLANT TRAINING "in our Organization during the period of 02th Dec 2019 – 03th Dec 2019. His Overall performance including his Conduct and Character during above mentioned period was Good.

We wish our very best for his new endeavor

For S.V. Chem Intermedites Pvt. Ltd.

V Skumar
03/12/19

Authorized Signatory

o.52, SIDCO Industrial Estate, Alathur, Thiruppotur - 603 110. Kanchipuram Dist. Tamilnadu, India. ☎ : 044-27444449 / 9940145110
e-mail:svccomm@svchempeptide.com / svcadmin@svchempeptide.com
CIN No : U24231 TN 2005 PTC055220 GSTIN / UIN : 33AAJCS1885R1ZK

S.V. CHEM
Intermediates Private Limited

INPLANT TRAINING- CERTIFICATE

SVC/AD/2019-20/07

Date: 05/12/2019

To:
Ms. R. DEEPIKA

AGNI COLLEGE OF TECHNOLOGY

THALAMBUR,

CHENNAI-130.

SUB: Certificate for In Plant Training

Dear Sir,

This is to Certify that **Ms.R.DEEPIKA** Reg No:-**312817203014** , III B.Tech Chem.Engg of your College has done "IN PLANT TRAINING "in our Organization during the period of 04th Dec 2019 – 05th Dec 2019. His Overall performance including his Conduct and Character during above mentioned period was Good.

We wish our very best for his new endeavor

For S.V. Chem Intermedites Pvt. Ltd.

V Skumar
05/12/19

Authorized Signatory

S.V. CHEM INTERMEDIATES (P) LTD THIRUPORUR 603 110

No.52, SIDCO Industrial Estate, Alathur, Thirupporur - 603 110. Kanchipuram Dist. Tamilnadu, India. ✆: 044-27444449 / 9940
e-mail:svccomm@svchempeptide.com / svcadmin@svchempeptide.com
CIN No : U24231 TN 2005 PTC055220 GSTIN / UIN : 33AAJCS1885R1ZK

S.V. CHEM
Intermediates Private Limited

INPLANT TRAINING- CERTIFICATE

SVC/AD/2019-20/08

Date: 05/12/2019

To:

Ms. G.GOWRI

AGNI COLLEGE OF TECHNOLOGY

THALAMBUR,

CHENNAI-130.

SUB: Certificate for In Plant Training

Dear Sir,

This is to Certify that **Ms.G.GOWRI** Reg No:-**312817203018** , III B.Tech Chem.Engg of your College has done "IN PLANT TRAINING "in our Organization during the period of 04th Dec 2019 – 05th Dec 2019. His Overall performance including his Conduct and Character during above mentioned period was Good.

We wish our very best for his new endeavor

For S.V. Chem Intermedites Pvt. Ltd.

V Skumar 05/12/19

Authorized Signatory

S.V. CHEM INTERMEDIATES (P) LTD. THIRUPORUR 603 110

No.52, SIDCO Industrial Estate, Alathur, Thirupporur - 603 110. Kanchipuram Dist. Tamilnadu, India. ✆: 044-27444449 / 9940145118
e-mail:svccomm@svchempeptide.com / svcadmin@svchempeptide.com
CIN No : U24231 TN 2005 PTC055220 GSTIN / UIN : 33AAJCS1885R1ZK

S.V. CHEM
Intermediates Private Limited

INPLANT TRAINING- CERTIFICATE

SVC/AD/2019-20/09

Date: 05/12/2019

To:

Mr. S.KARTHICKEYAN

AGNI COLLEGE OF TECHNOLOGY

THALAMBUR,

CHENNAI-130.

SUB: Certificate for In Plant Training

Dear Sir,

This is to Certify that **Ms.S.KARTHICKEYAN** Reg No:-**312817203027** , III B.Tech Chem.Engg of your College has done "IN PLANT TRAINING "in our Organization during the period of 04th Dec 2019 – 05th Dec 2019. His Overall performance including his Conduct and Character during above mentioned period was Good.

We wish our very best for his new endeavor

For S.V. Chem Intermedites Pvt. Ltd.

VSkumar 05/12/19

Authorized Signatory

S.V. CHEM INTERMEDIATES (P) LTD THIRUPORUR 603 110

No.52, SIDCO Industrial Estate, Alathur, Thirupporur - 603 110. Kanchipuram Dist. Tamilnadu, India. ✆: 044-27444449 / 9940
e-mail:svccomm@svchempeptide.com / svcadmin@svchempeptide.com
CIN No : U24231 TN 2005 PTC055220 GSTIN / UIN : 33AAJCS1885R1ZK

S.V. CHEM
Intermediates Private Limited

INPLANT TRAINING- CERTIFICATE

SVC/AD/2019-20/10

Date: 05/12/2019

To:

Mr. S.ANANTHAKUMAR

AGNI COLLEGE OF TECHNOLOGY

THALAMBUR,

CHENNAI-130.

SUB: Certificate for In Plant Training

Dear Sir,

This is to Certify that **Ms.S.ANANTHAKUMAR** Reg No:-**312817203006** , III B.Tech Chem.Engg of your College has done "IN PLANT TRAINING "in our Organization during the period of 04th Dec 2019 – 05th Dec 2019. His Overall performance including his Conduct and Character during above mentioned period was Good.

We wish our very best for his new endeavor

For S.V. Chem Intermedites Pvt. Ltd.

V Skumar
05/12/19

Authorized Signatory

S.V. CHEM INTERMEDIATES (P) LTD
THIRUPORUR
603 110

No.52, SIDCO Industrial Estate, Alathur, Thirupporur - 603 110. Kanchipuram Dist. Tamilnadu, India. ✆: 044-27444449 / 994014511
e-mail:svccomm@svchempeptide.com / svcadmin@svchempeptide.com
CIN No : U24231 TN 2005 PTC055220 GSTIN / UIN : 33AAJCS1885R1ZK

TANGEDCO

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Selvi. S. SANTHIYA Studying B.TECH IIIrd year in (Chemical) at AGNI COLLEGE OF TECHNOLOGY, THALAMBUR, CHENNAI. has undergone In-plant Training at Thirumakkottai (Kovilkalappal) 107 MW Combined Cycle Gas Turbine Power Station of TAMIL NADU GENERATION AND DISTRIBUTION CORPORATION LIMITED (a subsidiary of TAMIL NADU ELECTRICITY BOARD LIMITED), from 29.11.2019 to 04.12.2019 and she has successfully completed the Training programme.

7-12-2019

SUPERINTENDING ENGINEER/O&M,
T(K)GTPS / THIRUMAKKOTTAI

TAMILNADU CO-OPERATIVE MILK PRODUCERS' FEDERATION LIMITED,
Joint Managing Directors' Office
29 & 30 Industrial Estate, Ambattur, Chennai - 600 098.

Ref.No. 2075 /HRD/2016 Date:06.01.2020

CERTIFICATE

This is to certify that Ms. K. Gayathri B.Tech., (Chemical Engineering) student of Agni College of Technology, Talambure, Chennai 600 130 undergone internship training in Tamil Nadu Cooperative Milk Producers Federation Limited at Sholinganallur Dairy, Chennai 119 for the period 05.12.2019 to 07.12.2019 and completed the same satisfactorily.

Manager (HRD&QMS)

TAMILNADU CO-OPERATIVE MILK PRODUCERS' FEDERATION LIMITED,
Joint Managing Directors' Office
29 & 30 Industrial Estate, Ambattur, Chennai - 600 098.

Ref.No. 2075 /HRD/2016 Date:06.01.2020

CERTIFICATE

This is to certify that Ms. K. Sathana B.Tech., (Chemical Engineering) student of Agni College of Technology, Talambure, Chennai 600 130 undergone internship training in Tamil Nadu Cooperative Milk Producers Federation Limited at Sholinganallur Dairy, Chennai 119 for the period 05.12.2019 to 07.12.2019 and completed the same satisfactorily.

Manager (HRD&QMS)

Direct : Phone No. 23464534 & 23464535, Pbx No.13, Phone No.23464528 to 533 Fax : 044-23464536 Grams : "AAVINAMBA"
Website : www.aavin.com E-mail : aavingm@bsnl.in

TAMILNADU CO-OPERATIVE MILK PRODUCERS' FEDERATION LIMITED,
Joint Managing Directors' Office
29 & 30 Industrial Estate, Ambattur, Chennai - 600 098.

Ref.No. 2075 /HRD/2016 Date:04.01.2020

CERTIFICATE

This is to certify that Ms. J. Suji B.Tech (Chemical Engineering) student of Agni College of Technology, OMR, Talambur, Chennai 600 130 undergone internship training in Tamil Nadu Cooperative Milk Producers Federation Limited at Sholinganallur Dairy, Chennai 119 for the period 09.12.2019 to 13.12.2019 and completed the same satisfactorily.

Manager (HRD&QMS)

Direct : Phone No. 23464534 & 23464535, Pbx No.13, Phone No.23464528 to 533 Fax : 044-23464536 Grams : "AAVINAMBA"
Website : www.aavin.com E-mail : aavingm@bsnl.in

TAMILNADU CO-OPERATIVE MILK PRODUCERS' FEDERATION LIMITED,
Joint Managing Directors' Office
29 & 30 Industrial Estate, Ambattur, Chennai - 600 098.

Ref.No. 2075 /HRD/2016 Date:04.01.2020

CERTIFICATE

This is to certify that Ms. M. V. Madhuri Devi B.Tech (Chemical Engineering) student of Agni College of Technology, OMR, Talambur, Chennai 600 130 undergone internship training in Tamil Nadu Cooperative Milk Producers Federation Limited at Sholinganallur Dairy, Chennai 119 for the period 09.12.2019 to 13.12.2019 and completed the same satisfactorily.

Manager (HRD&QMS)

Direct : Phone No. 23464534 & 23464535, Pbx No.13, Phone No.23464528 to 533 Fax : 044-23464536 Grams : "AAVINAMBA"
Website : www.aavin.com E-mail : aavingm@bsnl.in

BESTCARE FORMULATION (P) LTD

Plot No. B-15 & B-16, Pipdic Electronic Industrial Estate, Thirubhuvanai,
Puducherry - 605 107. M. : 99429 05705

TO WHOM SOEVER IT MAY CONCERN

Ref :

Date :

We here certify that **Miss.E.YAMUNA B.Tech(Chemical) D/O R.ELANGO..** is trainee as a QUALITY CONTROL DEPARTMENT in our organisation from 25.11.2019 to 28.11.2019.

During her work she handle various sophisticated instruments like UV Spectrophotometer, HPLC, IR and Dissolution Apparatus.

He conduct and character are good.

We wish he all success.

FOR BESTCARE FORMULATION PVT LTD.,

BESTCARE FORMULATION (P) LTD. Puducherry 605 107.

(GENERAL MANAGER)

INDIAN INSTITUTE OF CHEMICAL ENGINEERS
CHENNAI REGIONAL CENTRE

SUMMER INTERNSHIP 2019

CERTIFICATE OF PARTICIPATION

Certified that Dr/Mr/Ms **Varsha V** IV Year Chemical Engineering from Agni College of Technology Chennai participated in the "IICHE-CRC SUMMER INTERNSHIP 2019" during 1st June 2019 - 9th June 2019 at Chennai, organized by the Indian Institute of Chemical Engineers, Chennai Regional Centre.

09/06/19

Dr N BALASUBRAMANIAN
Hon Secretary
IICHE -CRC

Mr D GOKUL
Treasurer &
Internship Coordinator
IICHE -CRC

INDIAN INSTITUTE OF CHEMICAL ENGINEERS
CHENNAI REGIONAL CENTRE

SUMMER INTERNSHIP 2019

CERTIFICATE OF PARTICIPATION

Certified that Dr/Mr/Ms **Muthu Umayal KT KA** III Year Chemical Engineering from Agni College of Technology Chennai participated in the "IICHE-CRC SUMMER INTERNSHIP 2019" during 1st June 2019 - 9th June 2019 at Chennai, organized by the Indian Institute of Chemical Engineers, Chennai Regional Centre.

09/06/19

Dr N BALASUBRAMANIAN
Hon Secretary
IICHE -CRC

Mr D GOKUL
Treasurer &
Internship Coordinator
IICHE -CRC

Department of Chemical Engineering
A.C. Tech Campus, Anna University
Chennai-600 025

DR N BALASUBRAMANIAN
Professor

+91 44 2235 9190
nbsbala@annauniv.edu

24.06. 2019

CERTIFICATE OF INTERNSHIP

This is to certify that **Ms. MONISHA G (312816203012)**, B. Tech Chemical Engineering, Agni College of Technology, Chennai – 600 130, has undergone internship under my guidance in the Electrochemical Engineering Lab, Department of Chemical Engineering, A. C. Tech, Anna University, Chennai – 600025 during the period starting from 21-05-2019 to 01-06-2019. Her performance during the tenure of the internship was commendable.

I wish her all the best for her future endeavour.

24/6/19

(BALASUBRAMANIAN N)

Department of Chemical Engineering
A.C. Tech Campus, Anna University
Chennai-600 025

DR N BALASUBRAMANIAN
Professor

+91 44 2235 9190
nbsbala@annauniv.edu

24.06.2019

CERTIFICATE OF INTERNSHIP

This is to certify that **Ms. SOWNDARI S (312816203026)**, B. Tech Chemical Engineering, Agni College of Technology, Chennai – 600 130, has undergone internship under my guidance in the Electrochemical Engineering Lab, Department of Chemical Engineering, A. C. Tech, Anna University, Chennai – 600025 during the period starting from 21-05-2019 to 01-06-2019. Her performance during the tenure of the internship was commendable.

I wish her all the best for her future endeavour.

24/6/19

(BALASUBRAMANIAN N)

Department of Chemical Engineering
A.C. Tech Campus, Anna University
Chennai-600 025

DR N BALASUBRAMANIAN
Professor

+91 44 2235 9190
nbsbala@annauniv.edu

24.06.2019

CERTIFICATE OF INTERNSHIP

This is to certify that **Ms. VARSHA V (312816203031)**, B. Tech Chemical Engineering, Agni College of Technology, Chennai – 600 130, has undergone internship under my guidance in the Electrochemical Engineering Lab, Department of Chemical Engineering, A. C. Tech, Anna University, Chennai – 600025 during the period starting from 21-05-2019 to 01-06-2019. Her performance during the tenure of the internship was commendable.

I wish her all the best for her future endeavour.

24/6/19

(BALASUBRAMANIAN N)

Department of Chemical Engineering
A.C. Tech Campus, Anna University
Chennai-600 025

DR N BALASUBRAMANIAN
Professor

+91 44 2235 9190
nbsbala@annauniv.edu

24.06. 2019

CERTIFICATE OF INTERNSHIP

This is to certify that **Ms. PREETHI R (312816203019)**, B. Tech Chemical Engineering, Agni College of Technology, Chennai – 600 130, has undergone internship under my guidance in the Electrochemical Engineering Lab, Department of Chemical Engineering, A. C. Tech, Anna University, Chennai – 600025 during the period starting from 21-05-2019 to 01-06-2019. Her performance during the tenure of the internship was commendable.

I wish her all the best for her future endeavour.

24/6/19

(BALASUBRAMANIAN N)

SOLARA
Active Pharma Sciences

Communication Address :
Solara Active Pharma Sciences Limited
A1/B SIPCOT Industrial Complex,
Kudikadu Village,
Cuddalore - 607 005
Tamil Nadu, India
Tel : +91 4142 285400

SOLARA/TRG/2018/092 **Date: 28.02.2019**

To:

The Head of the Department,
Department of Chemical Engineering,
Agni College of Technology,
Chennai – 600 130

CERTIFICATE

This is to certify that **Mr. Vaithiyanathan.G,** Department of Chemical Engineering, Agni College of Technology, Chennai. Has under gone internship training in our organization from 04/02/2019 to 14/02/2019.

During his association with us, his Character and Conduct were found good.

We wish his all success.

for Solara Active Pharma Sciences Limited,

Ragubady.K
Dy. General Manager – HR

SOLARA
Active Pharma Sciences

Communication Address :
Solara Active Pharma Sciences Limited
A1/B SIPCOT Industrial Complex,
Kudikadu Village,
Cuddalore - 607 005
Tamil Nadu, India
Tel : +91 4142 285400

SOLARA/TRG/2019/239 **Date: 04.06.2019**

To:

The Head of the Department,
Department of Chemical Engineering,
Agni college of Tecnology,
Chennai– 605108

CERTIFICATE

This is to certify that **Mr. J. Praveen,** Department of Chemical Engineering, **Agni college of Technology**, Chennai. Has under gone Internship in our organization from 23/05/2019 to 30/05/2019.

During his association with us, His Character and Conduct were found good.

We wish his all success.

for Solara Active Pharma Sciences Limited,

Ragubady.K
Dy. General Manager – HR

SOLARA
Active Pharma Sciences

Communication Address :
Solara Active Pharma Sciences Limited
A1/B SIPCOT Industrial Complex.
Kudikadu Village.
Cuddalore - 607 005
Tamil Nadu, India
Tel : +91 4142 285400

SOLARA/TRG/2019/238

Date: 04.06.2019

To:

The Head of the Department,
Department of Chemical Engineering,
Agni college of Tecnology,
Chennai– 605108

CERTIFICATE

This is to certify that **Mr. S. Mahendran,** Department of Chemical Engineering, **Agni college of Technology**, Chennai. Has under gone Internship in our organization from 23/05/2019 to 30/05/2019.

During his association with us, His Character and Conduct were found good.

We wish his all success.

for Solara Active Pharma Sciences Limited,

Ragubady.K
Dy. General Manager – HR

SOLARA
Active Pharma Sciences

Communication Address :
Solara Active Pharma Sciences Limited
A1/B SIPCOT Industrial Complex.
Kudikadu Village.
Cuddalore - 607 005
Tamil Nadu, India
Tel : +91 4142 285400

SOLARA/TRG/2019/237

Date: 04.06.2019

To:

The Head of the Department,
Department of Chemical Engineering,
Agni college of Tecnology,
Chennai– 605108

CERTIFICATE

This is to certify that **Mr. M. Sathish Kumar,** Department of Chemical Engineering, **Agni college of Technology**, Chennai. Has under gone Internship in our organization from 23/05/2019 to 30/05/2019.

During his association with us, His Character and Conduct were found good.

We wish his all success.

for Solara Active Pharma Sciences Limited,

Ragubady.K
Dy. General Manager – HR

SOLARA
Active Pharma Sciences

Communication Address :
Solara Active Pharma Sciences Limited
A1/B SIPCOT Industrial Complex.
Kudikadu Village.
Cuddalore - 607 005
Tamil Nadu, India
Tel : +91 4142 285400

SOLARA/TRG/2019/236 **Date: 04.06.2019**

To:

The Head of the Department,
Department of Chemical Engineering,
Agni college of Tecnology,
Chennai– 605108

CERTIFICATE

This is to certify that **Mr. D. Raja Ganapathy,** Department of Chemical Engineering, **Agni college of Technology**, Chennai. Has under gone Internship in our organization from 23/05/2019 to 30/05/2019.

During his association with us, His Character and Conduct were found good.

We wish his all success.

for Solara Active Pharma Sciences Limited,

Ragubady.K
Dy. General Manager – HR

SOLARA
Active Pharma Sciences

Communication Address :
Solara Active Pharma Sciences Limited
A1/B SIPCOT Industrial Complex,
Kudikadu Village,
Cuddalore - 607 005
Tamil Nadu, India
Tel : +91 4142 285400

SOLARA/TRG/2019/241

Date: 04.06.2019

To:

The Head of the Department,
Department of Chemical Engineering,
Agni college of Tecnology,
Chennai– 605108

CERTIFICATE

This is to certify that **Mr. S. Sudharsan,** Department of Chemical Engineering, **Agni college of Technology**, Chennai. Has under gone Internship in our organization from 23/05/2019 to 30/05/2019.

During his association with us, His Character and Conduct were found good.

We wish his all success.

for Solara Active Pharma Sciences Limited,

Ragubady.K
Dy. General Manager – HR

SOLARA
Active Pharma Sciences

Communication Address :
Solara Active Pharma Sciences Limited
R.S.No. 33 & 34,
Mathur Road, Periyakalapet
Puducherry - 605 014, India
Tel: +91 413 2654100, Fax: +91 413 2655154

08.12.2018

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. Sathana K,** B.Tech (Chemical Engineering) from Agni College of Engineering, Anna University has successfully completed her Internship from 26.11.2018 to 08.12.2018 in our company.

During her Internship, the trainee was punctual and sincere in the activities assigned to her.

We wish her a successful journey for her future endeavors.

For Solara Active Pharma Sciences Limited

08/12/2018

N. SELVAKUMAR
Head -HR

SOLARA
Active Pharma Sciences

Communication Address :
Solara Active Pharma Sciences Limited
R.S.No. 33 & 34,
Mathur Road, Periyakalapet
Puducherry - 605 014, India
Tel: +91 413 2654100, Fax: +91 413 2655154

08.12.2018

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. Keerthana A,** B.Tech (Chemical Engineering) from Agni College of Engineering, Anna University has successfully completed her Internship from 26.11.2018 to 08.12.2018 in our company.

During her Internship, the trainee was punctual and sincere in the activities assigned to her.

We wish her a successful journey for her future endeavors.

For Solara Active Pharma Sciences Limited

08/12/2018

N. SELVAKUMAR
Head -HR

PRARA LEATHERS PRIVATE LIMITED

GOLD RATED

TO WHOMSOEVER IT MAY CONCERN

This is to Certify that **Miss.R.RUPAALISHA, B.Tech., Chemical Engineering** Student of Agni College of Technology, Chennai. She has done the Internship Training in our factory for her education purpose.

Wish him/her all the best.

Thanking you,

For **PRARA LEATHERS PVT LTD.,**

5/6/19

Authorized Signature.

Date :05.06.2019
Place :Ranipet.

Prara Leathers Private Limited Ranipet-4. 31/2A/2, Ammoor Rd

Corporate Office : AP-864/29, H Block, 12th Main Road, Anna Nagar, Chennai - 600 040. Tamilnadu, India. Tel : 044-26160191
Factory: No:192,Sideo Industrial Estate, Sipcot, Ranipet - 632403. Tel: 04172 - 275699 / 275799
Factory : 31/2A/2, Ammoor Road, Manthangal Village, Ranipet - 632 402. Vellore Dist, Tamilnadu, India.
Website : www.praraleathers.in Email : info@praraleathers.in
GSTIN: 33AAFCS2146D1ZT PAN Number: AAFCS2146D
Incorporate No : U18209TN1997PTCO38785

Phone : 97877-09688, 97877-08688

The Cool People

TRIPACK INSULATIONS

S.F. No. 484, Thudiyalur Idigarai Main Road,
Backside of Kumar Polycot Mills, Idigarai, Coimbatore - 641 022.
E-mail : tripackinsulations@gmail.com

Ref. :

Date :

11.06.19

TO WHOM SO EVER IT MAY CONCERN

This is certify that MISS S.OOVIYA ROLL NO 312817203034, Agni collage of technology,

Thalambur, chnnai. As completed his internship at our concern for the period, from 03.06.19 to 07.06.19.

He underwent training on production about **expandable polysterene**, under the guidance of mrs k.prema,head production.

During his intership he carried out his responsibilities , diligently and met the managements, expectations quit statisfactorily

We wish her all the best in his future endeavors.

TRIPACK INSULATIONS COIMBATORE-11

For TRIPACK INSULATIONS

Authorised Signatory

BABU & Co

B&C

Civil & Electro Mechanical Engineering

Ref. No: BC/IC/2091-105

Date: 03rd June 2019

INTERNSHIP COMPLETION CERTIFICATE

We are glad to inform you that **Mr AVINASH.S** , S/o K Sivakumar, a student of B.E Civil Engineering from **Agni college of Technology, Anna university, Chennai**, has successfully completed his internship with us from **02nd May 2019** to **31st may 2019**.

During his internship, he was exposed to various activities in Design, Planning, and Project Execution Division.

We found him extremely inquisitive and hard working. He was very much interested to learn the functions of our core division and also willing to put his best efforts and get in to the depth of the subject to understand it better.

His association with us was very fruitful and we wish him all the best in his future endeavors.

For Babu & Co.,

BABU & CO CHENNAI

Authorized Signatory.

Agaram Main Road, Thiruvancherry, Chennai
600126.Ph: 8072987112

HIGHWAYS DEPARTMENT

CERTIFICATE

This is to certify that **Selvan M. Selvakumar** Final Year B.E. Civil Engineering Student **Roll No. 312816103023** of AGNI COLLEGE OF TECHNOLOGY, Chennai – 600 130 has undergone In Plant Training From 03.09.2019 to 07.09.2019 in the work of "Construction of Grade Separator at the Intersection of Taramani Road, Tambaram – Velachery Road and Velachery Bypass Road at Velachery Vijayanagaram Junction"

Divisional Engineer (H),
CMDP, Division – II,
Saidapet, Chennai-15.

HIGHWAYS DEPARTMENT

CERTIFICATE

This is to certify that **Selvan S. Avinash** Final Year B.E. Civil Engineering Student **Roll No. 312816103006** of AGNI COLLEGE OF TECHNOLOGY, Chennai – 600 130 has undergone In Plant Training From 03.09.2019 to 07.09.2019 in the work of "Construction of Grade Separator at the Intersection of Taramani Road, Tambaram – Velachery Road and Velachery Bypass Road at Velachery Vijayanagaram Junction"

20/9/19

Divisional Engineer (H),
CMDP, Division – II,
Saidapet, Chennai-15.

20/9/19

CH.P.T. Item Code No. C-81804355
500 Pads 27-11-2018

SAGARMALA

AEO
भारतीय सीमा शुल्क
INDIAN CUSTOMS

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ISO 9001 : 2015 Certified

Port
Par - Excellence
चेन्नै पोर्ट ट्रस्ट

CHENNAI PORT TRUST

Fax :+91-44-25361228
Phone :+91-44-25312000
:+91-44-25362201

प्रशासनिक कार्यालय
ADMINISTRATIVE OFFICE
राजाजी साले, चेन्नै- 600 001.
Rajaji Salai, Chennai-600 001.
Website : www.chennaiport.gov.in

No. JDR/610/2018/E 30.01.2020

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr.Avinash.S,** final year B.E (Civil Engineering) student of Agni College of Technology, Chennai has undergone in-plant training in Civil Engineering Department from **16.12.2019 to 20.12.2019**. During this period, the student was briefed about the principles and design of Marine structures and provided first-hand information on Hydrographic Survey procedures. The student was also given an opportunity to visit sites of Major ongoing projects and inspect marine structures. The student has satisfactorily completed his training. I wish him all success in his future endeavours.

30/1/2020

for CHIEF ENGINEER

CH.P.T. Item Code No. C-81804355
500 Pads 27-11-2018

SAGARMALA

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चेन्नै पोर्ट ट्रस्ट

Fax :+91-44-25361228
Phone :+91-44-25312000
:+91-44-25362201

प्रशासनिक कार्यालय
ADMINISTRATIVE OFFICE
राजाजी साले, चेन्नै- 600 001.
Rajaji Salai, Chennai-600 001.
Website : www.chennaiport.gov.in

CHENNAI PORT TRUST

No. JDR/610/2018/E

30.01.2020

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr.Resun Richard.J**, final year B.E (Civil Engineering) student of Agni College of Technology, Chennai has undergone in-plant training in Civil Engineering Department from **16.12.2019 to 20.12.2019**. During this period, the student was briefed about the principles and design of Marine structures and provided first-hand information on Hydrographic Survey procedures. The student was also given an opportunity to visit sites of Major ongoing projects and inspect marine structures. The student has satisfactorily completed his training. I wish him all success in his future endeavours.

for CHIEF ENGINEER

CHPT Item Code No. C-81804355
500 Pads 27-11-2018

SAGARMALA

AEO
ISPS Code Compliant
ISO 9001 : 2015 Certified

Port
Par - Excellence
चेन्नै पोर्ट ट्रस्ट

Fax :+91-44-25361228
Phone :+91-44-25312000
:+91-44-25362201

प्रशासनिक कार्यालय
ADMINISTRATIVE OFFICE
राजाजी साले, चेन्नै-600 001.
Rajaji Salai, Chennai-600 001.
Website : www.chennaiport.gov.in

CHENNAI PORT TRUST

No. JDR/610/2018/E

30.01.2020

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr.Roopendran.G**, final year B.E (Civil Engineering) student of Agni College of Technology, Chennai has undergone in-plant training in Civil Engineering Department from **16.12.2019 to 20.12.2019**. During this period, the student was briefed about the principles and design of Marine structures and provided first-hand information on Hydrographic Survey procedures. The student was also given an opportunity to visit sites of Major ongoing projects and inspect marine structures. The student has satisfactorily completed his training. I wish him all success in his future endeavours.

30/1/2020

for CHIEF ENGINEER

CH.P.T. Item Code No. C-81804355
500 Pads 27-11-2018

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Rajaji Salai, Chennai-600 001.
Website : www.chennaiport.gov.in

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No. JDR/610/2018/E

30.01.2020

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr.Selvakumar.M**, final year B.E (Civil Engineering) student of Agni College of Technology, Chennai has undergone in-plant training in Civil Engineering Department from **16.12.2019 to 20.12.2019**. During this period, the student was briefed about the principles and design of Marine structures and provided first-hand information on Hydrographic Survey procedures. The student was also given an opportunity to visit sites of Major ongoing projects and inspect marine structures. The student has satisfactorily completed his training. I wish him all success in his future endeavours.

30.1.2020

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30 .01.2020

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr.Sappa Venkatesh**, final year B.E (Civil Engineering) student of Agni College of Technology, Chennai has undergone in-plant training in Civil Engineering Department from **16.12.2019 to 20.12.2019**. During this period, the student was briefed about the principles and design of Marine structures and provided first-hand information on Hydrographic Survey procedures. The student was also given an opportunity to visit sites of Major ongoing projects and inspect marine structures. The student has satisfactorily completed his training. I wish him all success in his future endeavours.

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30.01.2020

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr.Bharath Kumar.P.S**, final year B.E (Civil Engineering) student of Agni College of Technology, Chennai has undergone in-plant training in Civil Engineering Department from **16.12.2019 to 20.12.2019**. During this period, the student was briefed about the principles and design of Marine structures and provided first-hand information on Hydrographic Survey procedures. The student was also given an opportunity to visit sites of Major ongoing projects and inspect marine structures. The student has satisfactorily completed his training. I wish him all success in his future endeavours.

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Rajaji Salai, Chennai-600 001.
Website : www.chennaiport.gov.in

No. JDR/610/2018/E

30.01.2020

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr.Dakshin.B**, final year B.E (Civil Engineering) student of Agni College of Technology, Chennai has undergone in-plant training in Civil Engineering Department from **16.12.2019 to 20.12.2019**. During this period, the student was briefed about the principles and design of Marine structures and provided first-hand information on Hydrographic Survey procedures. The student was also given an opportunity to visit sites of Major ongoing projects and inspect marine structures. The student has satisfactorily completed his training. I wish him all success in his future endeavours.

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr.Dinesh.K**, final year B.E (Civil Engineering) student of Agni College of Technology, Chennai has undergone in-plant training in Civil Engineering Department from **16.12.2019 to 20.12.2019**. During this period, the student was briefed about the principles and design of Marine structures and provided first-hand information on Hydrographic Survey procedures. The student was also given an opportunity to visit sites of Major ongoing projects and inspect marine structures. The student has satisfactorily completed his training. I wish him all success in his future endeavours.

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms.Divya.S**, final year B.E (Civil Engineering) student of Agni College of Technology, Chennai has undergone in-plant training in Civil Engineering Department from **16.12.2019 to 20.12.2019**. During this period, the student was briefed about the principles and design of Marine structures and provided first-hand information on Hydrographic Survey procedures. The student was also given an opportunity to visit sites of Major ongoing projects and inspect marine structures. The student has satisfactorily completed her training. I wish her all success in her future endeavours.

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr.Hariharan.R**, final year B.E (Civil Engineering) student of Agni College of Technology, Chennai has undergone in-plant training in Civil Engineering Department from **16.12.2019 to 20.12.2019**. During this period, the student was briefed about the principles and design of Marine structures and provided first-hand information on Hydrographic Survey procedures. The student was also given an opportunity to visit sites of Major ongoing projects and inspect marine structures. The student has satisfactorily completed his training. I wish him all success in his future endeavours.

for CHIEF ENGINEER

SS GROUP OF COMPANIES & INSTITUTIONS

COMPLETE CONSTRUCTION & SURVEY SOLUTION

01-Dec-2019

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This is to certify that Mr./Ms. **D. Manikandan** Studying **III Year / V Semester, BE - Civil Engineering** Student of **Agni College of Technology, Thalambur** has undergone Internship Training during the period 25-Nov-2019 to 01-Dec-2019.

We wish him/her best wishes in future endeavours.

Best Regards

S.Dinesh Kumar

HR Head / Human Resource Department

0427-4055580
www.salemsurveyinstitute.com
5 Roads (Near Chennai Silks), Salem-4, TAMIL NADU.

CERTIFICATE OF COMPLETION

This is to certify that Mr.M.Vijayan has completed the

training on site execution of Interior design works

from November 25th, 2019 to December 14th, 2019

A.SURENDRA VENKATRAMANAN

Trainer

C Edge Interior Decors, No.4/122 C, Nazar Street, Avadi, Chennai - 54

Archiclave

CERTIFICATE OF COMPLETION

This is to certify that Mr.M.Praveen has completed the training on site execution of Interior design works from November 25th, 2019 to December 14th, 2019

A.SURENDRA
VENKATRAMANAN
Trainer

C Edge Interior Decors, No.4/122 C, Nazar Street,
Avadi, Chennai - 54

Archiclave

SHRI CONSTRUCTIONS

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. M. Maya Krishnan studying in III year / V Semester, B.E – Civil Engineering student of Agni College of Technology, Thalambur, Chennai – 600 130 has undergone internship training during the period from 02.12.2019 to 11.12.2019 in our organization.

He is obedient and attentive towards his work.

We wish him all success in his future endeavors

For SHRI CONSTRUCTIONS

Authorized Signatory

Guindy Road Kilpuk, Chennai/www.shriconstruction.com

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Water & Effluent Treatment
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Chennai - 600 089, INDIA
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Fax : +91-44-3319 4949
www.Lntecc.com

LTC/HR-WET IC/TRG
December 13, 2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. Saravanan S pursuing B. E in Civil Engineering from Agni College of Technology has successfully completed his internship training at Engineering Design Research Center, Water & Effluent Treatment IC during the period from December 2, 2019 to December 13, 2019.

We wish him all success in his career.

Thanking you,

Yours faithfully,
for LARSEN & TOUBRO LIMITED

LARSEN & TOUBRO LIMITED Construction - Chennai

(K.KRISHNA KUMAR)
SR. MANAGER - HR
WATER & EFFLUENT TREATMENT IC
CHENNAI

Certificate of Completion

This certificate is awarded to

Mr/Ms A.ABITHA B.E(ECE) IV YEAR

AGNI COLLEGE OF TECHNOLOGY

RaspberryPi based IOT

has successfully completed the

INTERNSHIP TRAINING

at our factory premises from 03/06/19 *to* 14/06/19

Vi Microsystems Pvt. Ltd. Chennai 600 096

MANAGER
Project & Training

Vi Microsystems Pvt. Ltd., Chennai.
Plot No: 75, Electronics Estate, Perungudi, Chennai-96.
Ph No. 044 - 2496 0774, 2496 1842
E-mail : training@vimicrosystems.com

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conducted by

Kyrion Technologies Pvt. Ltd.

on 10th to 14th June 2019

at Indian Institute of Technology, Madras Research Park

SUMMER CAMP 2019

Rishabh Mehta
Chairman & Editor-in-Cheif
What After College

Sujata Mehta
Chief Executive Officer
Kyrion Technologies Pvt. Ltd.

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in recognition for participation in

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at Indian Institute of Technology, Madras Research Park

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Chairman & Editor-in-Cheif
What After College

Sujata Mehta
Chief Executive Officer
Kyrion Technologies Pvt. Ltd.

KYRION Technologies

Registration

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CERTIFICATE

OF COMPLETION

This is to certify ~~Mr.~~ / Ms. G. SOWMIYA

from AGNI COLLEGE OF TECHNOLOGY

department of ELECTRONICS AND COMMUNICATION ENGINEERING has

successfully completed the **Internship** / ~~Inplant Training~~ program in

IOT WITH RASPBERRY PI

Duration : 23/5/19 to 27/5/19

M.K. Thulijan
Director-Technical

H R Manager

28/5/19
Date of issue

www.pantechsolutions.net

CERTIFICATE NO : PANBNTO23(A)

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Technology Beyond the Dreams

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department of ELECTRONICS AND COMMUNICATION ENGINEERING has

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M.K. Thulijan
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This is to certify that Ms . M. Karthika has completed the Internship assignment for the period from 06th May 2019 to 04th June 2019 under the Power Electronics with Renewable Energy sources.

For Zazen Systems Pvt. Ltd.

Director

SRIRAM NARAYANAMURTHY
Director

C/O RTBI, Module #6, First floor, IIT M Research Park,
Kanagam Road, Taramani, Chennai-600113.

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Certificate No: 484

This is to certify

B.P. SABARI JANATH

has successfully completed the training on

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from 27-05-19 to 31-05-19

P. KARTHIK VENKATESH

HEAD - RESEARCH & DEVELOPMENT

R. RAJA

PROJECT & DEVELOPMENT

SIPCOT IT Park, Siruseri, OMR, Chennai-603 103

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that **M ANAND KUMAR** student of **AGNI COLLEGE OF TECHNOLOGY, BE/ECE** has undergone the implant training in our concern entitled **EMBEDDED SYSTEM** from **27th May 2019 to 29th May 2019** in relevant departments related to their academic studies.

During the above period, the performance was good & we wish great success in all your future endeavours.

Authorised Signature

No. 31, 1st Floor, Alagesan Street,
West Tambaram, Chennai - 600 045.
Office : 044-4207 7204
Cell : +91 96888 81190

★

No. 13, 1st Floor, Ramanuja Koodam Street,
Poonamallee, Chennai - 600 056.
Office : 044 - 4855 5575
Cell : +91 96888 81198

Cell : +91-81222 66653 • www.retechsolutions.in

RETECH SOLUTIONS PVT.LTD.

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **A AJITH KUMAR** student of **AGNI COLLEGE OF TECHNOLOGY, BE/ECE** has undergone the internship in our concern entitled **EMBEDDED** from **23rd May to 25th May** in relevant departments related to their academic studies.

During the above period, the performance was good & we wish great success in all your future endeavours.

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RETECH SOLUTIONS PVT.LTD.

TO WHOMSOEVER IT MAY CONCERN

This is to certify that GOGUL RAJA K P student of **AGNI COLLEGE OF TECHNOLOGY, BE/ECE** has undergone the internship in our concern entitled **EMBEDDED** from 23rd May to 25th May in relevant departments related to their academic studies.

During the above period, the performance was good & we wish great success in all your future endeavours.

Authorised Signature

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Office : 044-4207 7204
Cell : +91 96888 81190

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This is to certify that E VASHIKA student of **AGNI COLLEGE OF TECHNOLOGY, BE/ECE** has undergone the implant training in our concern entitled **EMBEDDED SYSTEM** from **6th June 2019 to 8th June 2019** in relevant departments related to their academic studies.

During the above period, the performance was good & we wish great success in all your future endeavours.

Authorised Signature

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Cell : +91 96888 81190

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This is to certify that S. SHRUTHI

has done INPLANT TRAINING from 11-06-19 to 11-05-19

During the training period the performance of the trainee

was found to be Good.

Project Manager

#1 Shifa Arcade, 3rd Floor, Bharathi Nagar Ist Street, North Usman Road, T-Nagar, Chennai - 600 017, 044 42124943

info@uniqtechnologies.co.in | www.uniqtechnologies.co.in

SCIENCOTONIC

Date: 15 June 2019

TO WHOM IT MAY CONCERN

This is to certify that Mr. Siddharthan M, S/O R.Murugan , Student of Agni college of technology College, Chennai, Reg No: 312817106099 has successfully completed 1 month (From 03 May 2019 to 31 May 2019) long internship as RESEARCH ASSISTANT at Sciencotonic Edu Pvt ltd, Pallavaram. During this period of his internship we found him punctual, hardworking and passionate on his work.

We wish him every success in life.

For, Sciencotonic Edu Pvt ltd.

Authorized signature

+91 7904217183

www.sciencotonic.com

7/4 Indiragandhi Road
C.Pallavaram, Chennai 43

SANDS®

CERTIFICATE OF COMPLETION

Certificate No: H 85

This is to certify

NANDHINI . P

has successfully completed the training on

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from 27-05-19 to 31-05-19

P. KARTHIK VENKATESH

HEAD - RESEARCH & DEVELOPMENT

R. RAJA

PROJECT & DEVELOPMENT

SIPCOT IT Park, Siruseri, OMR, Chennai-603 103

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(नवीन और नवीकरणीय ऊर्जा मंत्रालय, भारत सरकार Ministry of New and Renewable Energy, Government of India)
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No.NIWE/RD and RDAF/Internship-157/2019

Date: 16.12.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr.R.DEEPAK**, (Reg.No.312817104011) Department of Computer Science Engineering, AGNI College of Technology, Chennai has completed his Internship at National Institute of Wind Energy, Chennai from 02.12.2019 to 12.12.2019.

During the course of Internship, he was found punctual and diligent. On completion he has submitted a report on **"Wind Power Forecasting"** to National Institute of Wind Energy, Chennai, India.

A.G.Rangaraj
Deputy Director (T)
R&D, RDAF and SRRA

16/12/19
K.Boopathi
Director & Division Head
R&D, RDAF and SRRA

NATIONAL INSTITUTE OF WIND ENERGY CHENNAI 600 100

वेलाचेरी - ताम्बरम मुख्य मार्ग, पल्लिकरणई, चेन्नै - 600 100. तमिल नाडु, भारत
Velachery - Tambaram Main Road, Pallikaranai, Chennai - 600 100. Tamil Nadu, INDIA
दूरभाष/Tel No.: +91 - 44 - 2246 3982 / 83 / 84, +91 - 44 - 2900 1162 / 1167 / 1195
फैक्स/Fax No.: +91 - 44 - 2246 3980 / 2246 3990
ई-मैल/E-mail : info@niwe.res.in वेबसाईट/Website : http://niwe.res.in

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JAS-ANZ
BSA
ISO 9001: 2008

This is to certify that Mr/Ms N. SUMITHRA

AGNI COLLEGE OF TECHNOLOGY - CSE DEPARTMENT

has attended Internship in GUI AND DJANGO FRAMEWORK IN PYTHON

from 25.11.2019 *to* 14.12.2019.

Project Manager

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JAS-ANZ

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This is to certify that Mr/Ms B. PRAVALIKA

AGNI COLLEGE OF TECHNOLOGY - CSE DEPARTMENT

has attended Internship in GUI AND DJANGO FRAMEWORK IN PYTHON

from 25.11.2019 *to* 14.12.2019.

Project Manager

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AGNI COLLEGE OF TECHNOLOGY - CSE DEPARTMENT

has attended Internship in GUI AND DJANGO FRAMEWORK IN PYTHON

from 25.11.2019 *to* 14-12-2019.

Project Manager

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This is to certify that Mr/Ms A. POOVARASAN

AGNI COLLEGE OF TECHNOLOGY - CSE DEPARTMENT

has attended Internship in GUI AND DJANGO FRAMEWORK IN PYTHON

from 25.11.2019 *to* 14-12-2019.

Project Manager

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This is to certify that Mr/Ms M. PRASANNA

AGNI COLLEGE OF TECHNOLOGY - CSE DEPARTMENT

has attended Internship in GUI AND DJANGO FRAMEWORK IN PYTHON

from 25. 11. 2019 *to* 14 - 12 . 2019 .

Project Manager

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This is to certify that Mr/Ms S. PRATHEEBHA RANI

AGNI COLLEGE OF TECHNOLOGY

has attended Internship in WEB DEVELOPMENT

from 27-11-2019 *to* 7-12-2019.

Project Manager

KaaShiv InfoTech

SOFTWARE DEVELOPMENT & ELECTRONICS / IOT RESEARCH COMPANY

X-41, shivanantha Building, 5th Floor, 2nd Avenue, Anna Nagar, Chennai - 40

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Mr./ Ms. M.D. NEVETHA

a Student of AGNI COLLEGE OF TECHNOLOGY

has done his/her In-Plant Training in Our Company held from 26-11-2019

to 30-11-2019 and completed the Training Successfully.

J. VENKATESAN PRABU
Managing Director

KAASHIV INFOTECH
X-41, Shivanantha Building,
5th Floor, 2nd Avenue,
Anna Nagar, Chennai - 600 040.
Ph : 7667662428

J. ARUNACHALAM
Project Manager

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This is to Certify that

Mr./Ms. S. SHOBANA

a Student of AGNI COLLEGE OF TECHNOLOGY

has done the ETHICAL HACKING

Internship in our Company held from 25/11/2018 to

29/11/2018 and Completed the Training Successfully.

KAASHIV INFOTECH
X-41, Shivanantha Building,
5th Floor, 2nd Avenue,
Anna Nagar, Chennai - 600 040.
Ph : 7657652428

Venkatesan Prabu.J
MANAGING DIRECTOR

Arunachalam.J
PROJECT MANAGER

***This Hands-On Training is Provided by 10 Years Microsoft Awarded Most Valuable Professional - Recognized Top Azure Specialist in the World.

dentsu AEGIS network

Paragon Digital Services Pvt. Ltd.
Head Office : Tyche Tower, 1st, 2nd and 7th Floor
Block 1, S.No. 14/1A, Perungudi Bye Pass Road
MGR Main Road, Perungudi, Chennai - 600 096.
Tamil Nadu, India.
Tel : +91 044 6600 8696
Email : accounts@paragondigitalservices.com
Web : www.paragondigitalservices.com

paragon

PDS/HR/IL/2376

12th Dec 2019,

To Whomsoever It May Concern

This is to certify that **Ms. Shreedevi S, Reg No: 312817104084** of **Bachelor of Engineering (Computer Science and Engineering) – Agni College of Technology, OMR, Thalambur, Chennai 600130**, has successfully completed her internship in the department of **Human Resource** from 27th Nov 2019 – 12th Dec 2019.

We wish her all success in her future endeavor.

For Paragon Digital Services Pvt Ltd.,

Chandrashekar P N
Sr. Manager – Learning & Development.

DLK

Career Development

CERTIFICATE OF COMPLETION

This is to certify that

S. SHERYL CATHERINE – 312818104072

has Successfully Completed

Internship / Inplant training in PHP from 02/12/19 to 06/12/19

During the training period the performance of the trainee was found to be excellent.

Congratulations on your hard work! keep shining!

CERTIFIED

DLK CAREER DEVELOPMENT CHENNAI

Jayalakshmi S
Vice President

CERTIFIED ISO 9001:2015 COMPANY

DLK

Career Development

CERTIFICATE OF COMPLETION

This is to certify that

B. SATHIYAPRIYA – 312818104066

has Successfully Completed

Internship / Inplant training in PHP from 02/12/19 to 06/12/19

During the training period the performance of the trainee was found to be excellent.

Congratulations on your hard work! keep shining!

CERTIFIED

Jayalakshmi S
Vice President

CERTIFIED ISO 9001:2015 COMPANY

DLK

Career Development

CERTIFICATE OF COMPLETION

This is to certify that

A. SHARMILA - 312818104070

has Successfully Completed

Internship / Inplant training in PHP from 02/12/19 to 06/12/19

During the training period the performance of the trainee was found to be excellent.

Congratulations on your hard work! keep shining!

CERTIFIED

Jayalakshmi S
Vice President

CERTIFIED ISO 9001:2015 COMPANY

DLK

Career Development

CERTIFICATE OF COMPLETION

This is to certify that

B. SHALINI - 312818104067

has Successfully Completed

Internship / Inplant training in PHP from 02/12/19 to 06/12/19

During the training period the performance of the trainee was found to be excellent.

Congratulations on your hard work! keep shining!

DLK CAREER DEVELOPMENT CHENNAI

Jayalakshmi S
Vice President

CERTIFIED ISO 9001:2015 COMPANY

DLK

Career Development

CERTIFICATE OF COMPLETION

This is to certify that

V. THOBBI BALA – 312818104087

has Successfully Completed

Internship / Inplant training in PHP from 02/12/19 to 06/12/19

During the training period the performance of the trainee was found to be excellent.

Congratulations on your hard work! keep shining!

DLK CAREER DEVELOPMENT CHENNAI

Jayalakshmi S
Vice President

CERTIFIED ISO 9001:2015 COMPANY

DLK

Career Development

CERTIFICATE OF COMPLETION

This is to certify that

K. SARASWATHI - 312818104063

has Successfully Completed

Internship / Inplant training in PHP from 02/12/19 to 06/12/19

During the training period the performance of the trainee was found to be excellent.

Congratulations on your hard work! keep shining!

CERTIFIED CERTIFIED CERTIFIED

DLK CAREER DEVELOPMENT CHENNAI

Jayalakshmi S
Vice President

CERTIFIED ISO 9001:2015 COMPANY

DLK

Career Development

CERTIFICATE OF COMPLETION

This is to certify that

V. PREMKUMAR - 312818104051

has Successfully Completed

Internship / Inplant training in PHP from 02/12/19 to 06/12/19

During the training period the performance of the trainee was found to be excellent.

Congratulations on your hard work! keep shining!

DLK CAREER DEVELOPMENT CHENNAI

Jayalakshmi S
Vice President

CERTIFIED ISO 9001 2015 COMPANY

DLK

Career Development

CERTIFICATE OF COMPLETION

This is to certify that

R. REVATHI - 312818104058

has Successfully Completed

Internship / Inplant training in PHP from 02/12/19 to 06/12/19

During the training period the performance of the trainee was found to be excellent.

Congratulations on your hard work! keep shining!

DLK CAREER DEVELOPMENT CHENNAI

Jayalakshmi S
Vice President

CERTIFIED ISO 9001:2015 COMPANY

DLK

Career Development

CERTIFICATE OF COMPLETION

This is to certify that

R. SUBHIKSHA - 312813104050

has Successfully Completed

Internship / Inplant training in PHP from 02/12/19 to 06/12/19

During the training period the performance of the trainee was found to be excellent.

Congratulations on your hard work! keep shining!

DLK CAREER DEVELOPMENT CHENNAI

Jayalakshmi S
Vice President

CERTIFIED ISO 9001:2015 COMPANY

DLK

Career Development

CERTIFICATE OF COMPLETION

This is to certify that

P. SWATHI - 312818104084

has Successfully Completed

Internship / Inplant training in ANDROID DEVELOPMENT from 25/11/19 to 29/11/19

During the training period the performance of the trainee was found to be excellent.

Congratulations on your hard work! keep shining!

DLK CAREER DEVELOPMENT CHENNAI

Jayalakshmi S
Vice President

CERTIFIED ISO 9001:2015 COMPANY

DLK

Career Development

CERTIFICATE OF EXCELLENCE

This is to certify that

S. SHERYL CATHERINE – 312818104072

has attended a workshop on

ANDROID conducted by DLK Career Development on 03 / 12 / 2019

During the training period the performance of the trainee was found to be excellent.

Jayalakshmi S
Vice President

DLK

Career Development

CERTIFICATE OF EXCELLENCE

CERTIFIED ISO 9001:2015 COMPANY

This is to certify that

B. SATHIYAPRIYA - 312818104066

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ANDROID conducted by DLK Career Development on 03 / 12 / 2019

During the training period the performance of the trainee was found to be excellent.

CERTIFIED CERTIFIED CERTIFIED

DLK CAREER DEVELOPMENT CHENNAI

Jayalakshmi S
Vice President

DLK

Career Development

CERTIFICATE OF EXCELLENCE

CERTIFIED ISO 9001:2015 COMPANY

This is to certify that

B. SHALINI - 312818104067

has attended a workshop on

ANDROID conducted by DLK Career Development on 03/12/2019

During the training period the performance of the trainee was found to be excellent.

CERTIFIED CERTIFIED CERTIFIED

DLK CAREER DEVELOPMENT CHENNAI

Jayalakshmi S
Vice President

DLK

Career Development

CERTIFICATE OF EXCELLENCE

CERTIFIED ISO 9001:2015 COMPANY

This is to certify that

V. THOSSI BALA – 312818104087

has attended a workshop on

ANDROID conducted by DLK Career Development on 03 / 12 / 2019

During the training period the performance of the trainee was found to be excellent.

CERTIFIED CERTIFIED CERTIFIED

DLK CAREER DEVELOPMENT CHENNAI

Jayalakshmi S
Vice President

DLK

Career Development

CERTIFICATE OF EXCELLENCE

CERTIFIED ISO 9001:2015 COMPANY

This is to certify that

K. SARASWATHI - 312818104063

has attended a workshop on

ANDROID conducted by DLK Career Development on 03 / 12 / 2019

During the training period the performance of the trainee was found to be excellent.

CERTIFIED CERTIFIED CERTIFIED

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Jayalakshmi S
Vice President

DLK

Career Development

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CERTIFIED CERTIFIED CERTIFIED

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Jayalakshmi S

Vice President

DLK

Career Development

CERTIFICATE OF EXCELLENCE

CERTIFIED ISO 9001:2015 COMPANY

This is to certify that

R. SUBHIKSHA – 312818104080

has attended a workshop on

ANDROID conducted by DLK Career Development on 03 / 12 / 2019

During the training period the performance of the trainee was found to be excellent.

CERTIFIED CERTIFIED CERTIFIED

DLK CAREER DEVELOPMENT CHENNAI

Jayalakshmi S
Vice President

DLK

Career Development

CERTIFICATE OF EXCELLENCE

CERTIFIED ISO 9001:2015 COMPANY

This is to certify that

R. REVATHI – 312818104058

has attended a workshop on

ANDROID conducted by DLK Career Development on 03 / 12 / 2019

During the training period the performance of the trainee was found to be excellent.

CERTIFIED CERTIFIED CERTIFIED

DLK CAREER DEVELOPMENT CHENNAI

Jayalakshmi S
Vice President

DLK

Career Development

CERTIFICATE OF EXCELLENCE

CERTIFIED ISO 9001:2015 COMPANY

This is to certify that

A. SHARMILA - 312818104070

has attended a workshop on

ANDROID conducted by DLK Career Development on 03 / 12 / 2019

During the training period the performance of the trainee was found to be excellent.

CERTIFIED CERTIFIED CERTIFIED

DLK CAREER DEVELOPMENT CHENNAI

Jayalakshmi S
Vice President

एन एस आई सी

NSIC

No.: 7792

ISO 9001 : 2015

राष्ट्रीय लघु उद्योग निगम लिमिटेड

NATIONAL SMALL INDUSTRIES CORPORATION LIMITED

(A Govt. of India Enterprise)

NSIC - TECHNICAL SERVICES CENTRE,

Sector B-24, Guindy Industrial Estate, Ekkaduthangal, Chennai - 600 032

CERTIFICATE

This is to certify that Mr./Ms. **M.C.YAMINI** S/o/ D/o Shri. **S.MOHAN** student of II year B.E (CSE), Agni College of Technology, Chennai has undergone Internship Training on **Mobile Application Development** at our centre for a period of **One Week** from 25.11.2019 to 29.11.2019.

NSIC - Technical Services Centre * A Govt. Of India Enterprise * Chennai-600 032

COURSE CO-ORDINATOR *CENTRE HEAD*

WSS

CERTIFICATE OF INPLANT TRAINING

This is to certify that MS.M.ROGHINI RegNo:312816104072 from AGNI COLLEGE OF TECHNOLOGY has successfully completed her Inplant Training in Real Time Concepts of Software and Basic Embedded Systems With Hitech "C" in our OrganiZation form 26-05-2019 till 01-06-2019

During the tenure of training, we found her very sincere attentive and good behavior

R. Duri

Manager

Authorized Signatory

03-06-2019

WISDOM SOFT SOLUTIONS
#36/32, Sri Ramnagar Main Road,
Taramani Post, Chennai 600113
Phone +91-44-2352345

CERTIFICATE OF INPLANT TRAINING

This is to certify that MS.A.SUVATHI RegNo:312816104085 from AGNI COLLEGE OF TECHNOLOGY has successfully completed her Inplant Training in Real Time Concepts of Software and Basic Embedded Systems With Hitech "C" in our OrganiZation form 26-05-2019 till 01-06-2019

During the tenure of training, we found her very sincere attentive and good behavior

Manager

Authorized Signatory

03-06-2019

WISDOM SOFT SOLUTIONS
#36/32, Sri Ramnagar Main Road,
Taramani Post, Chennai 600113
Phone +91-44-2352345

u·n·i·q technologies

Services | Development | Consultancy

ISO 9001:2015 CERTIFIED

CERTIFICATE OF COMPLETION

This is to certify that DEVI.E

has done INPLANT TRAINING from 05-05-2019 to 08-05-2019.

During the training period the performance of the trainee

was found to be GOOD .

Chennai 600 017

Project Manager

#1 Shifa Arcade, 3rd Floor, Bharathi Nagar Ist Street, North Usman Road, T-Nagar, Chennai - 600 017, 044 42124943

info@uniqtechnologies.co.in | www.uniqtechnologies.co.in

u·n·i·q technologies

Services | Development | Consultancy

ISO 9001:2015 CERTIFIED

CERTIFICATE OF COMPLETION

This is to certify that KOKILA.S

has done INPLANT TRAINING from 05-05-2019 to 08-05-2019.

During the training period the performance of the trainee

was found to be GOOD .

Chennai 600 017

Project Manager

#1 Shifa Arcade, 3rd Floor, Bharathi Nagar Ist Street, North Usman Road, T-Nagar, Chennai - 600 017, 044 42124943

info@uniqtechnologies.co.in | www.uniqtechnologies.co.in

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Services | Development | Consultancy

ISO 9001:2015 CERTIFIED

CERTIFICATE OF COMPLETION

This is to certify that BHAVANATHI.K

has done INPLANT TRAINING from 05-05-2019 to 08-05-2019.

During the training period the performance of the trainee

was found to be GOOD .

Chennai 600 017

Project Manager

#1 Shifa Arcade, 3rd Floor, Bharathi Nagar Ist Street, North Usman Road, T-Nagar, Chennai - 600 017, 044 42124943

info@uniqtechnologies.co.in | www.uniqtechnologies.co.in

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ISO 9001:2015 CERTIFIED

CERTIFICATE OF COMPLETION

This is to certify that ABINAYA.R

has done INPLANT TRAINING from 05-05-2019 to 08-05-2019.

During the training period the performance of the trainee

was found to be GOOD.

Chennai 600 017

Project Manager

#1 Shifa Arcade, 3rd Floor, Bharathi Nagar Ist Street, North Usman Road, T-Nagar, Chennai - 600 017, 044 42124943

info@uniqtechnologies.co.in | www.uniqtechnologies.co.in

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Services | Development | Consultancy

ISO 9001:2015 CERTIFIED

CERTIFICATE OF COMPLETION

This is to certify that MALAR.S

has done INPLANT TRAINING from 05-05-2019 to 08-05-2019.

During the training period the performance of the trainee

was found to be GOOD.

UNIQ TECHNOLOGIES Chennai 600 017

Project Manager

#1 Shifa Arcade, 3rd Floor, Bharathi Nagar Ist Street, North Usman Road, T-Nagar, Chennai - 600 017, 044 42124943

info@uniqtechnologies.co.in | www.uniqtechnologies.co.in

u·n·i·q technologies

services | development | consultancy

ISO 9001:2015 CERTIFIED

CERTIFICATE OF MERIT

This is to certify that P.S. RATAN RANA *(Reg No.* 312817104502 *) has successfully completed the internship in* JAVA *Application Development in our concern from* 3/06/2019 *to* 12/06/2019 *.*

During the internship period, the performance of the intern was found to be Good *.*

R. [illegible]

Program Coordinator

HR Head

u·n·i·q technologies

Services | Development | Consultancy

ISO 9001 : 2008 CERTIFIED

CERTIFICATE OF COMPLETION

This is to certify that S. VISHNUVARTHAN has done internship training in **Software Development** from 03.06.2019 to 11.06.2019.

During the training period the performance of the trainee was found to be EXCELLENT.

Program Coordinator

1, Shifa Arcade, 3rd Floor, Bharathi Nagar 1st Street, North Usman Road, T-Nagar, Chennai - 600 017. 044 42124943

info@uniqtechnologies.co.in | www.uniqtechnologies.co.in

सीएसआयआर–राष्ट्रीय रासायनिक प्रयोगशाला
(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद)
डॉ. होमी भाभा मार्ग, पुणे - 411 008. भारत
CSIR-NATIONAL CHEMICAL LABORATORY
(Council of Scientific & Industrial Research)
Dr. Homi Bhabha Road, Pune - 411008. India

Dr. Ram Rup Sarkar
Principal Scientist
Chemical Engineering and Process Development (CEPD)
E-mail: rr.sarkar@ncl.res.in / ramrup@gmail.com
Tel.: +91(0)20-2590 3040 **(Office);** +91(0)20-2590 3041 **(Lab.)**
Fax: +91(0)20-25902621

CERTIFICATE

This is to certify that **Mr. Lingaraj N, Third year Computer Science and Engineering, Agni College of Technology, Chennai** has completed his project under **CSIR Intelligent Systems (AI) Mission Programme, 2019**, during **May 22 – July 22, 2019.** He has worked on the project entitled ***Breast cancer cell detection*** under my guidance at CSIR-National Chemical Laboratory, Pune.

He has a major contribution in analysis, computation and result interpretations of the project. He has given a talk in our Lab. meeting, and explained the work very clearly to an interdisciplinary audience.

Place: CSIR-NCL, Pune
Date: 19th July, 2019

Ram Rup Sarkar
(Ram Rup Sarkar)
Supervisor

डॉ.राम रुप सरकार/Dr. Ram Rup Sarkar
प्रधान वैज्ञानिक/ Principal Scientist
सीएसआयआर- राष्ट्रीय रासायनिक प्रयोगशाळा
CSIR-National Chemical Laboratory
पुणे/Pune-411008, India.

सीएसआयआर–राष्ट्रीय रासायनिक प्रयोगशाला
(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्)
डॉ. होमी भाभा मार्ग, पुणे – 411 008, भारत
CSIR-NATIONAL CHEMICAL LABORATORY
(Council of Scientific & Industrial Research)
Dr. Homi Bhabha Road, Pune - 411008, India

Dr. Ram Rup Sarkar
Principal Scientist
Chemical Engineering and Process Development (CEPD)
E-mail: rr.sarkar@ncl.res.in / ramrup@gmail.com
Tel.: +91(0)20-2590 3040 **(Office)**; +91(0)20-2590 3041 **(Lab.)**
Fax: +91(0)20-25902621

CERTIFICATE

This is to certify that **Mr. Bharathi Kannan R, Third year Computer Science and Engineering, Agni College of Technology, Chennai** has completed his project under **CSIR Intelligent Systems (AI) Mission Programme, 2019**, during **May 22 – July 22, 2019.** He has worked on the project entitled ***Breast cancer cell detection*** under my guidance at CSIR-National Chemical Laboratory, Pune.

He has a major contribution in analysis, computation and result interpretations of the project. He has given a talk in our Lab. meeting, and explained the work very clearly to an interdisciplinary audience.

Place: CSIR-NCL, Pune
Date: 19th July, 2019

Ram Rup Sarkar
(Ram Rup Sarkar)
Supervisor

डॉ.राम रुप सरकार/Dr. Ram Rup Sarkar
प्रधान वैज्ञानिक/ Principal Scientist
सीएसआयआर- राष्ट्रीय रासायनिक प्रयोगशाळा
CSIR-National Chemical Laboratory
पुणे/Pune-411008, India.

Antillo Consulting

technology optimized...

CERTIFICATE OF COMPLETION

This certificate is presented to Ms.PONMUGI M(312817104055) in recognition of her hard work and dedication in completing the BIG DATA ANALYTICS internship from 27th May 2019 to 10th June 2019 at Antillo Consulting Private Ltd.

During this period, Ponmugi worked on various areas of Big Data including research on different file formats and trend analysis. Ponmugi shows a lot of promise and skill in her work and we wish her all the best in all her future endeavors.

Awarded by,

ANTILLO CONSULTING PVT LTD CHENNAI-100 MEDAVAKKAM

Mr.Sivasankar Chandrasekar
(Project Manager)

Antillo Consulting Private Limited, Aishwarya Garden, Medavakkam, Chennai 600100.

Phone: 044-42833056 | info@antillocs.com | www.antillocs.com

Antillo Consulting

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CERTIFICATE OF COMPLETION

This certificate is presented to Ms.PRIYADHARSINI B(312817104063) in recognition of her hard work and dedication in completing the BIG DATA ANALYTICS internship from 27th May 2019 to 10th June 2019 at Antillo Consulting Private Ltd.

During this period, Priyadharsini worked on various areas of Big Data including research on different file formats and trend analysis. Priyadharsini shows a lot of promise and skill in her work and we wish her all the best in all her future endeavors.

Awarded by,

ANTILLO CONSULTING PVT LTD CHENNAI-100 MEDAVAKKAM

Mr.Sivasankar Chandrasekar
(Project Manager)

Antillo Consulting Private Limited, Aishwarya Garden, Medavakkam, Chennai 600100.

Phone: 044-42833056 | info@antillocs.com | www.antillocs.com

Antillo Consulting

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CERTIFICATE OF COMPLETION

This certificate is presented to Ms.SAMANTHA E(312817104073) in recognition of her hard work and dedication in completing the BIG DATA ANALYTICS internship from 27th May 2019 to 10th June 2019 at Antillo Consulting Private Ltd.

During this period, Samantha worked on various areas of Big Data including research on different file formats and trend analysis.Samantha shows a lot of promise and skill in her work and we wish her all the best in all her future endeavors.

Awarded by,

ANTILLO CONSULTING PVT LTD CHENNAI-100

Mr.Sivasankar Chandrasekar
(Project Manager)

Antillo Consulting Private Limited, Aishwarya Garden, Medavakkam, Chennai 600100.

Phone: 044-42833056 | info@antillocs.com | www.antillocs.com

Antillo Consulting

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CERTIFICATE OF COMPLETION

This certificate is presented to Ms.SUSEELA DEVI S(312817104089) in recognition of her hard work and dedication in completing the BIG DATA ANALYTICS internship from 27th May 2019 to 10th June 2019 at Antillo Consulting Private Ltd.

During this period, Suseela devi worked on various areas of Big Data including research on different file formats and trend analysis.Suseela devi shows a lot of promise and skill in her work and we wish her all the best in all her future endeavors.

Awarded by

Mr.Sivasankar Chandrasekar
(Project Manager)

ANTILLO CONSULTING PVT LTD CHENNAI-100 MEDAVAKKAM

Antillo Consulting Private Limited, Aishwarya Garden, Medavakkam, Chennai 600100.

Phone: 044-42833056 | info@antillocs.com | www.antillocs.com

SRI BALAJI VIDYAPEETH
DEEMED UNIVERSITY DECLARED UNDER SEC. 3 OF UGC ACT, 1956
ACCREDITED BY NAAC WITH 'A' GRADE
SHRI SATHYA SAI MEDICAL COLLEGE & RESEARCH INSTITUTE
Healing The Ailing

SSSMCRI/Dean/Cert/2019/46 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. AJITH KUMAR. M,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **03.06.2019 to 07.06.2019.**

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

DEAN

DEAN
Shri Sathya Sai Medical College & Research Institute
Ammapettai Nellikuppam - 603 108
Kancheepuram Dist.

Thiruporur-Guduvanchery Main Road, Ammapettai, Nellikuppam - 603 108,
Thiruporur Taluk, Kancheepuram District, Tamil Nadu, India
Tel. Board : +91 44 27440700 / 346 Fax : +91 44 27440138
E-mail : info@sssmcri.ac.in Website : http: // www.sssmcri.ac.in

SRI BALAJI VIDYAPEETH
DEEMED UNIVERSITY DECLARED UNDER SEC. 3 OF UGC ACT, 1956
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SHRI SATHYA SAI MEDICAL COLLEGE & RESEARCH INSTITUTE
Healing The Ailing

SSSMCRI/Dean/Cert/2019/46 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. AJITH KUMAR. M,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **03.06.2019 to 07.06.2019.**

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

DEAN
DEAN
Shri Sathya Sai Medical College & Research Institute
Ammapettai Nellikuppam 603 108
Kancheepuram Dist.

Thiruporur-Guduvanchery Main Road, Ammapettai, Nellikuppam - 603 108
Thiruporur Taluk, Kancheepuram District, Tamil Nadu, India
Tel. Board : +91 44 27440700 / 346 Fax : +91 44 27440138
E-mail : info@sssmcri.ac.in Website : http: // www.sssmcri.ac.in

SSSMCRI/Dean/Cert/2019/01 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. AKASH. K,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

DEAN 14.10.19
DEAN
Shri Sathya Sai Medical College & Research Institute
Ammapettai, Nellikuppam

Irapporur Gudiyancherry Main Road, Ammapettai, Nellikuppam 603 108
Irapporur Taluk, Kancheepuram District, Tamil Nadu, India
Tel: Board: +91-44-27440700 / 346 | Fax: +91-44-27440138
Email: info@sssmcri.ac.in | Website: http://www.sssmcri.ac.in

SRI BALAJI VIDYAPEETH
DEEMED UNIVERSITY DECLARED UNDER SEC. 3 OF UGC ACT, 1956
ACCREDITED BY NAAC WITH 'A' GRADE
SHRI SATHYA SAI MEDICAL COLLEGE & RESEARCH INSTITUTE
Healing The Ailing

SSSMCRI/Dean/Cert/2019/40 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. AKILA. M,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/30 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. AMRIN. T.A,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College& Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/23 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. ASHWIN JAYARAM. R. P,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/02 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. ATCHAYA. S,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

14.10.19

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SSSMCRI/Dean/Cert/2019/43 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. BRINDHA DEVI. C.I,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/21 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. DIVYA. P,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/03 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. ELAKKIYA. K,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/28 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. FATHIMA. A,** Final year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

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SSSMCRI/Dean/Cert/2019/36

Date: 14.10.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. GAYATHRI.D,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/04

Date: 14.10.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. GAYATHRI. M.R,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

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SSSMCRI/Dean/Cert/2019/27 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. JAHANA PARVIN. A,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

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SSSMCRI/Dean/Cert/2019/35 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. JANANI. S,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

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SSSMCRI/Dean/Cert/2019/05 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. JEEVIGA. J,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

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SSSMCRI/Dean/Cert/2019/06 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. JENIFER SARAH SOUNDARYA. R,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

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SSSMCRI/Dean/Cert/2019/24 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. JOSHUA. A,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

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SSSMCRI/Dean/Cert/2019/41 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. KAVIYA. S,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

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SSSMCRI/Dean/Cert/2019/38 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. KEERTHANA. V,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

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SSSMCRI/Dean/Cert/2019/18 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. KEERTHIKA. S,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

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SSSMCRI/Dean/Cert/2019/07

Date: 14.10.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. KRISHNA PRIYA. S,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College& Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/09 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. LAKSHMI PRIYA. J,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College& Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/08 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. LAXI HARSHA. N.C.S,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College& Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

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SSSMCRI/Dean/Cert/2019/49 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. MANI KUMAR. T,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **03.06.2019 to 07.06.2019.**

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/10 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. MANJU. S,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College& Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

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SSSMCRI/Dean/Cert/2019/11

Date: 14.10.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. MEENATCHI SUNDAR. N,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College& Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

14.10.19

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SSSMCRI/Dean/Cert/2019/34 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. MONISHA. A,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/42 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. MUNEESH DHARANI. M,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/22 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. NITHYASHREE. M,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/12 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. PREETHI. M,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College& Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

14.10.19

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SSSMCRI/Dean/Cert/2019/29

Date: 14.10.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. PREETHI. M,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. PUNITHAVALLI. E,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College& Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

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SSSMCRI/Dean/Cert/2019/48 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. RAM KUMAR. B,** Final year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **03.06.2019 to 07.06.2019.**

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/17 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. RAMYA. K,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

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SSSMCRI/Dean/Cert/2019/50

Date: 14.10.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. RANJAN. T,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **03.06.2019 to 07.06.2019.**

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SSSMCRI/Dean/Cert/2019/37

Date: 14.10.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. SANDHIYA. K,** Final year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

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SSSMCRI/Dean/Cert/2019/45

Date: 14.10.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. SANDHIYA.T,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

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SSSMCRI/Dean/Cert/2019/47

Date: 14.10.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. SANTHOSH KUMAR. P,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **03.06.2019 to 07.06.2019**.

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/39

Date: 14.10.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. SHALINI. S,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/33 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. SHARANYA KALA. R,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

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SSSMCRI/Dean/Cert/2019/26 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. SHAREEN. M,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

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SSSMCRI/Dean/Cert/2019/14

Date: 14.10.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. SHIJUMON. S,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College& Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

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14.10.19

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SSSMCRI/Dean/Cert/2019/31 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. SUGANYA. K,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

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SSSMCRI/Dean/Cert/2019/16 Date: 14.10.2019

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This is to certify that **Ms. SWATHI. R,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

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SSSMCRI/Dean/Cert/2019/44 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. THIRUNAVUKKARASU. A,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **03.06.2019 to 07.06.2019.**

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/19 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. VAISHNAVI. R,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

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Date: 14.10.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. VARADHARAJAN. L,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **03.06.2019 to 07.06.2019.**

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SSSMCRI/Dean/Cert/2019/52 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. SURIYA PRAKASH. V,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **03.06.2019 to 07.06.2019.**

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/01 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. AKASH. K,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/40 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. AKILA. M,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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Kancheepuram Dist.

SSSMCRI/Dean/Cert/2019/40 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. AKILA. M,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/30 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. AMRIN. T.A,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College& Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/23 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. ASHWIN JAYARAM. R. P,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/02 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. ATCHAYA. S,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

14.10.19

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SSSMCRI/Dean/Cert/2019/43 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. BRINDHA DEVI. C.I,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/21 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. DIVYA. P,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/03 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. ELAKKIYA. K,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/28 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. FATHIMA. A,** Final year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/36 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. GAYATHRI.D,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

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SSSMCRI/Dean/Cert/2019/04

Date: 14.10.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. GAYATHRI. M.R,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/27 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. JAHANA PARVIN. A,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/35 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. JANANI. S,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

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Kancheepuram Dist.

SSSMCRI/Dean/Cert/2019/05 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. JEEVIGA. J,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/06 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. JENIFER SARAH SOUNDARYA. R,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/24 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. JOSHUA. A,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

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Ammapettai Nellikuppam - 603 108
Kancheepuram Dist.

SSSMCRI/Dean/Cert/2019/41 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. KAVIYA. S,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/38 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. KEERTHANA. V,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/18 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. KEERTHIKA. S,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

14.10.19

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SSSMCRI/Dean/Cert/2019/07

Date: 14.10.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. KRISHNA PRIYA. S,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College& Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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Kancheepuram Dist

SSSMCRI/Dean/Cert/2019/08 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. LAXI HARSHA. N.C.S,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College& Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/08 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. LAXI HARSHA. N.C.S,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College& Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

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SSSMCRI/Dean/Cert/2019/49 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. MANI KUMAR. T,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **03.06.2019 to 07.06.2019.**

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/10 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. MANJU. S,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College& Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

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SSSMCRI/Dean/Cert/2019/11

Date: 14.10.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. MEENATCHI SUNDAR. N,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College& Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/34 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. MONISHA. A,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/42 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. MUNEESH DHARANI. M,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

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SSSMCRI/Dean/Cert/2019/22 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. NITHYASHREE. M,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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Shri Sathya Sai Medical College & Research Institute
Ammapettai, Nellikuppam - 603 108
Kancheepuram Dist.

Thiruporur-Guduvanchery Main Road, Ammapettai, Nellikuppam - 603 108,
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E-mail : info@sssmcri.ac.in Website : http: // www.sssmcri.ac.in

SSSMCRI/Dean/Cert/2019/12 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. PREETHI. M,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College& Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

14.10.19
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Kanchipuram Dist.

SSSMCRI/Dean/Cert/2019/29 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. PREETHI. M,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/13 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. PUNITHAVALLI. E,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College& Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

14.10.19

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SSSMCRI/Dean/Cert/2019/48 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. RAM KUMAR. B,** Final year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **03.06.2019 to 07.06.2019.**

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/17 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. RAMYA. K,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

14.10.19

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SSSMCRI/Dean/Cert/2019/50 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. RANJAN. T,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **03.06.2019 to 07.06.2019.**

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/37

Date: 14.10.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. SANDHIYA. K,** Final year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/45 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. SANDHIYA.T,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/47 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. SANTHOSH KUMAR. P,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **03.06.2019 to 07.06.2019.**

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/39

Date: 14.10.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. SHALINI. S,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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Ammapettai Nellikuppam - 603
Kancheepuram Dist

SSSMCRI/Dean/Cert/2019/33 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. SHARANYA KALA. R,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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Ammapettai, Nellikuppam - 603 108
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SSSMCRI/Dean/Cert/2019/25 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. SOWMIYA. V,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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Kanchipuram Dist

SSSMCRI/Dean/Cert/2019/14 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. SHIJUMON. S,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College& Research Institute, Ammapetai from **14.05.2019 to 18.05.2019.**

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

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Healing The Ailing

SSSMCRI/Dean/Cert/2019/31 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. SUGANYA. K,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **27.05.2019 to 31.05.2019.**

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SSSMCRI/Dean/Cert/2019/16 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. SWATHI. R**, Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/44 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. THIRUNAVUKKARASU. A,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **03.06.2019 to 07.06.2019.**

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

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SSSMCRI/Dean/Cert/2019/19 **Date: 14.10.2019**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. VAISHNAVI. R,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **20.05.2019 to 24.05.2019.**

During the tenure she has shown keen interest to learn about the biomedical equipments available in the teaching hospital and her conduct during the above said period was satisfactory.

14.10.19

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SSSMCRI/Dean/Cert/2019/51

Date: 14.10.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. VARADHARAJAN. L,** Final Year Biomedical Engineering (B.E) student of **Agni College of Technology, Thalambur, Chennai** has been an observer in the Department of Biomedical Engineering at Shri Sathya Sai Medical College & Research Institute, Ammapetai from **03.06.2019 to 07.06.2019.**

During the tenure he has shown keen interest to learn about the biomedical equipments available in the teaching hospital and his conduct during the above said period was satisfactory.

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VAIGUNTH ENER TEK (P) LTD.

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Chennai - 600 100. Tamil Nadu, India.

06/12/2019

To Whom it May Concern

We hereby certify that, ***Mr.M.Ahamed Sharif*** *has undergone 8 days Industrial Training from 28.11.2019 to 06.12.2019 at our organisation to fulfill the requirements for the award of degree of B.E (Electrical and Electronics Engineering). He works on Power Plant Overview Project during the training under the supervision of Mr.S.Jagatheesa Perumal-Factory Manager. During his tenure with us we found him sincere and diligent.*

We wish him a great success is the future.

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06/12/2019

To Whom it May Concern

*We hereby certify that, **Mr.A.Andrews** has undergone 8 days Industrial Training from 28.11.2019 to 06.12.2019 at our organisation to fulfill the requirements for the award of degree of B.E (Electrical and Electronics Engineering). He works on Power Plant Overview Project during the training under the supervision of Mr.S.Jagatheesa Perumal-Factory Manager. During his tenure with us we found him sincere and diligent.*

We wish him a great success is the future.

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06/12/2019

To Whom it May Concern

We hereby certify that, ***Mr.M.Arun Kumar*** *has undergone 8 days Industrial Training from 28.11.2019 to 06.12.2019 at our organisation to fulfill the requirements for the award of degree of B.E (Electrical and Electronics Engineering). He works on Power Plant Overview Project during the training under the supervision of Mr.S.Jagatheesa Perumal-Factory Manager. During his tenure with us we found him sincere and diligent.*

We wish him a great success is the future.

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06/12/2019

To Whom it May Concern

*We hereby certify that, **Mr.S.Dinesh Kumar** has undergone 8 days Industrial Training from 28.11.2019 to 06.12.2019 at our organisation to fulfill the requirements for the award of degree of B.E (Electrical and Electronics Engineering). He works on Power Plant Overview Project during the training under the supervision of Mr.S.Jagatheesa Perumal-Factory Manager. During his tenure with us we found him sincere and diligent.*

We wish him a great success is the future.

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06/12/2019

To Whom it May Concern

*We hereby certify that, **Mr.R.P.Shoban Abishek** has undergone 8 days Industrial Training from 28.11.2019 to 06.12.2019 at our organisation to fulfill the requirements for the award of degree of B.E (Electrical and Electronics Engineering). He works on Power Plant Overview Project during the training under the supervision of Mr.S.Jagatheesa Perumal-Factory Manager. During his tenure with us we found him sincere and diligent.*

We wish him a great success is the future.

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06/12/2019

To Whom it May Concern

*We hereby certify that, **Mr.E.Suresh Kumar** has undergone 8 days Industrial Training from 28.11.2019 to 06.12.2019 at our organisation to fulfill the requirements for the award of degree of B.E (Electrical and Electronics Engineering). He works on Power Plant Overview Project during the training under the supervision of Mr.S.Jagatheesa Perumal-Factory Manager. During his tenure with us we found him sincere and diligent.*

We wish him a great success is the future.

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06/12/2019

To Whom it May Concern

*We hereby certify that, **Mr.A.Thirunavukarasu** has undergone 8 days Industrial Training from 28.11.2019 to 06.12.2019 at our organisation to fulfill the requirements for the award of degree of B.E (Electrical and Electronics Engineering). He works on Power Plant Overview Project during the training under the supervision of Mr.S.Jagatheesa Perumal-Factory Manager. During his tenure with us we found him sincere and diligent.*

We wish him a great success is the future.

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Chennai - 600 100. Tamil Nadu, India.

06/12/2019

To Whom it May Concern

*We hereby certify that, **Mr.C.Vasantha Kumar** has undergone 8 days Industrial Training from 28.11.2019 to 06.12.2019 at our organisation to fulfill the requirements for the award of degree of B.E (Electrical and Electronics Engineering). He works on Power Plant Overview Project during the training under the supervision of Mr.S.Jagatheesa Perumal-Factory Manager. During his tenure with us we found him sincere and diligent.*

We wish him a great success is the future.

For VAIGUNTH ENER TEK (P) LTD

General Manager

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CERTIFICATE OF COMPLETION

This is to Certify that

Mr./Ms. A·S·ASWIN

a Student of AGNI COLLEGE OF TECHNOLOGY

has done the EMBEDDED

Internship in our Company held from 04·12·2019 to

08-12·2019 and Completed the Training Successfully.

KAASHIV INFOTECH
X-41, Shivanantha Building,
5th Floor, 2nd Avenue,
Anna Nagar, Chennai - 600 040.
Ph : 7667662428

Venkatesan Prabu.J
MANAGING DIRECTOR

Arunachalam.J
PROJECT MANAGER

***This Hands-On Training is Provided by 10 Years Microsoft Awarded Most Valuable Professional - Recognized Top Azure Specialist in the World.

SRI RAMANA ENTERPRISES
Aadhipureeswarar Koil 2nd Cross Street, Pallikaranai, Chennai - 600 100.
Ph : 044-48608585, 65475599, +91 91505 65422

OMEGA
Stabilizers
ISO 9001 : 2008

Date: 14-12-2019

INTERNSHIP CERTIFICATE

This is to certify that **Mr. U. Anban** a student of the Department of Electrical and Electronics Engineering, Agni College of Technology, Chennai has completed his one week internship (From **7th Dec 2019** to **12th Dec 2019**) at the **SRI RAMANA ENTERPRISES**, Chennai. During this period, he worked under my guidance in developing processing and manufacturing all types of stabilizer.

With Regards,

For **SRI RAMANA ENTERPRISES**
(Manufactures of **OMEGA STABILIZER**)

For Sri Ramana Enterprise
Proprietor

SRI RAMANA ENTERPRISES

Aadhipureeswarar Koil 2nd Cross Street, Pallikaranai, Chennai - 600 100.
Ph : 044-48608585, 65475599, +91 91505 65422

OMEGA
Stabilizers
ISO 9001 : 2008

Date: 14-12-2019

INTERNSHIP CERTIFICATE

This is to certify that **Mr. N. Mohamed Khalid** a student of the Department of Electrical and Electronics Engineering, Agni College of Technology, Chennai has completed his one week internship (From **7th Dec 2019** to **12th Dec 2019**) at the **SRI RAMANA ENTERPRISES**, Chennai. During this period, he worked under my guidance in developing processing and manufacturing all types of stabilizer.

With Regards,

For **SRI RAMANA ENTERPRISES**
(Manufactures of **OMEGA STABILIZER**)

For Sri Ramana Enterprises
Proprietor

SRI RAMANA ENTERPRISES
Aadhipureeswarar Koil 2nd Cross Street, Pallikaranai, Chennai - 600 100.
Ph : 044-48608585, 65475599, +91 91505 65422

OMEGA
Stabilizers
ISO 9001 : 2008

Date: 14-12-2019

INTERNSHIP CERTIFICATE

This is to certify that **Mr. V. Suvetha Piriyan** a student of the Department of Electrical and Electronics Engineering, Agni College of Technology, Chennai has completed his one week internship (From **7th Dec 2019** to **12th Dec 2019**) at the **SRI RAMANA ENTERPRISES**, Chennai. During this period, he worked under my guidance in developing processing and manufacturing all types of stabilizer.

With Regards,

For **SRI RAMANA ENTERPRISES**
(Manufactures of **OMEGA STABILIZER**)

For Sri Ramana Enterprise
Proprietor

Certificate of Completion

This Certificate is awarded to

Mr./Ms D. Durga - B.E, Third year, EEE,

Agni College of Technology,

Embedded System & IoT Technology.

has successfully completed the

IN - PLANT TRAINING

at our factory premises from 25.11.2019 to 09.12.2019

Vi Microsystems Private Limited Chennai 600 096

Manager - Training
Vi Microsystems Pvt. Ltd.,

Vi Microsystems Pvt. Ltd., Chennai.
Plot No: 75, Electronics Estate, Perungudi, Chennai-96.
Ph No: 044-43132210, 24961842
E-mail : training@vimicrosystems.com
Web : www.vimicrosystems.com

SHRI VAARI
ELECTRICALS
Concept to Commissioning

Shri Vaari Electricals Pvt. Ltd.

ISO 9001 : 2015 / ISO 14001 : 2015 / OHSAS 18001 : 2007 CERTIFIED

Manufacturers of Electrical Control Systems & Project Engineers
'E.S.A' Grade Contractors
CIN : U31200TN2005PTC055967
GST No : 33AAJCS5545E1ZE

Ref: SVE/HR/In-Plant trainee – 002

29.11.2019

TO WHOM IT MAY CONCERN

This is to certify that **Ms. G. Jeevitha** , a student of III year B.E(Electrical and Electronics Engineering) from **Agni College of Technology**, Chennai has successfully undergone **"5 days In-Plant Training"** in our organization from 25.11.2019 to 29.11.2019. During these days, she has learned on the topic **"Projects Design"** and shown keen interest and enthusiasm during the training period.

We wish her all the best in her future endeavor.

For SHRI VAARI ELECTRICALS PRIVATE. LIMITED,

R. Harini

Authorized Signatory

22500913, 22500241
admin@shrivaarielectricals.com
www.shrivaarielectricals.com
C-37, Thiru-vi-ka Industrial Estate, Guindy, Chennai - 600032

SHRI VAARI
ELECTRICALS
Concept to Commissioning

Shri Vaari Electricals Pvt. Ltd.

ISO 9001 : 2015 / ISO 14001 : 2015 / OHSAS 18001 : 2007 CERTIFIED

Manufacturers of Electrical Control Systems & Project Engineers
'E.S.A' Grade Contractors
CIN : U31200TN2005PTC055967
GST No : 33AAJCS5545E1ZE

Ref: SVE/HR/In-Plant trainee – 001

29.11.2019

TO WHOM IT MAY CONCERN

This is to certify that **Ms. K. Dhatchayini** , a student of III year B.E (Electrical and Electronics Engineering) from **Agni College of Technology**, Chennai has successfully undergone "**5 days In-Plant Training**" in our organization from 25.11.2019 to 29.11.2019. During these days, she has learned on the topic "**Projects Design**" and shown keen interest and enthusiasm during the training period.

We wish her all the best in her future endeavor

For SHRI VAARI ELECTRICALS PRIVATE. LIMITED,

R. Harini

Authorized Signatory

22500913, 22500241
admin@shrivaarielectricals.com
www.shrivaarielectricals.com
C-37, Thiru-vi-ka Industrial Estate, Guindy, Chennai - 600032

Omega
Stabilizer

SRI RAGHAVENDRA ENTERPRISES
NO. 1/723-A, 2nd floor,
Veerathamman Kovil West Street,
Jalladianpet, Chennai - 600 100
Phone No.: +91 44 4860 8585 / +91 91503 23257

Date: 14-12-2019

INTERNSHIP CERTIFICATE

This is to certify that **Mr. S. Prakash** a student of the Department of Electrical and Electronics Engineering, Agni College of Technology, Chennai has completed his one week internship (From **7th Dec 2019** to **12th Dec 2019**) at the **SRI RAGAVENDRA ENTERPRISES**, Chennai. During this period, he worked under my guidance in developing processing and manufacturing all types of stabilizer.

With Regards,

For **SRI RAGAVENDRA ENTERPRISES**
(Manufactures of **OMEGA STABILIZER**)

For SRI RAGAVENDRA ENTERPRISES

Proprietor

TAMILNADU GENERATION AND DISTRIBUTION CORPORATION

Er.S.Murali Krishnan, B.E., M.Tech.,
Executive Engineer/Control Centre.

Chennai Development Circle.
144, Anna Salai, Chennai 600 002.

TO WHOMSOEVER IT MAY CONCERN

This is to Certify that Selvan.S.Prasanth, Third Year, B.E (EEE) Student of Agni College of Engineering, K.B Dasan Road,Chennai – 600 018. has completed In-plant Training from 12.12.2019 to 15.12.2019 in Control Centre, Chennai Development Circle, TANGEDCO, Chennai-2.

During the period of training, he is trained in the following fields:-

- Load Management in Distribution Circle by SCADA operation.
- EHT and HT Under Ground Power Cable testing and fault locating.
- EHT Under Ground Cable Routine Test.
- Cable route drawing using Auto CAD.
- Cable Joint Training.
- Ring Main Unit Operation and Erection.
- Sub-station Operation.
- Transformer operation.

During the period of training, his conduct and character were Good.

S. Murali 17/12/19
Executive Engineer/Control Centre,
Chennai Development Circle,
Chennai-2.

Date : 17.12.19
Place : Chennai-600 002

TAMILNADU GENERATION AND DISTRIBUTION CORPORATION

Er.S.Murali Krishnan, B.E., M.Tech.,
Executive Engineer/Control Centre.

Chennai Development Circle.
144, Anna Salai, Chennai 600 002.

TO WHOMSOEVER IT MAY CONCERN

This is to Certify that Selvan.C.Ramajayam, Third Year, B.E (EEE) Student of Agni College of Engineering, K.B Dasan Road,Chennai – 600 018. has completed In-plant Training from 12.12.2019 to 15.12.2019 in Control Centre, Chennai Development Circle, TANGEDCO, Chennai-2.

During the period of training, he is trained in the following fields:-

- Load Management in Distribution Circle by SCADA operation.
- EHT and HT Under Ground Power Cable testing and fault locating.
- EHT Under Ground Cable Routine Test.
- Cable route drawing using Auto CAD.
- Cable Joint Training.
- Ring Main Unit Operation and Erection.
- Sub-station Operation.
- Transformer operation.

During the period of training, his conduct and character were Good.

S. [illegible] 17/12/19

Date : 17.12.19
Place : Chennai-600 002

Executive Engineer/Control Centre,
Chennai Development Circle,
Chennai-2.

TAMILNADU GENERATION AND DISTRIBUTION CORPORATION

Er.S.Murali Krishnan, B.E., M.Tech.,
Executive Engineer/Control Centre.

Chennai Development Circle.
144, Anna Salai, Chennai 600 002.

TO WHOMSOEVER IT MAY CONCERN

This is to Certify that Selvan.R.Mahendran, Third Year, B.E (EEE) Student of Agni College of Engineering, K.B Dasan Road,Chennai – 600 018. has completed In-plant Training from 12.12.2019 to 15.12.2019 in Control Centre, Chennai Development Circle, TANGEDCO, Chennai-2.

During the period of training, he is trained in the following fields:-

- Load Management in Distribution Circle by SCADA operation.
- EHT and HT Under Ground Power Cable testing and fault locating.
- EHT Under Ground Cable Routine Test.
- Cable route drawing using Auto CAD.
- Cable Joint Training.
- Ring Main Unit Operation and Erection.
- Sub-station Operation.
- Transformer operation.

During the period of training, his conduct and character were Good.

S. [illegible] 17/12/19

Date : 17.12.19
Place : Chennai-600 002

Executive Engineer/Control Centre,
Chennai Development Circle,
Chennai-2.

TAMILNADU GENERATION AND DISTRIBUTION CORPORATION

Er.S.Murali Krishnan, B.E., M.Tech.,
Executive Engineer/Control Centre.

Chennai Development Circle.
144, Anna Salai, Chennai 600 002.

TO WHOMSOEVER IT MAY CONCERN

This is to Certify that Selvi.J.Swetha, Third Year, B.E (EEE) Student of Agni College of Engineering, K.B Dasan Road,Chennai – 600 018. has completed In-plant Training from 12.12.2019 to 15.12.2019 in Control Centre, Chennai Development Circle, TANGEDCO, Chennai-2.

During the period of training, she is trained in the following fields:-

- Load Management in Distribution Circle by SCADA operation.
- EHT and HT Under Ground Power Cable testing and fault locating.
- EHT Under Ground Cable Routine Test.
- Cable route drawing using Auto CAD.
- Cable Joint Training.
- Ring Main Unit Operation and Erection.
- Sub-station Operation.
- Transformer operation.

During the period of training, her conduct and character were Good.

S. M 17/12/19

Date : 17.12.19
Place : Chennai-600 002

Executive Engineer/Control Centre,
Chennai Development Circle,
Chennai-2.

TAMIL NADU TRANSMISSION CORPORATION LTD.,
(TANTRANSCO)

TAMIL NADU ELECTRICITY BOARD (TNEB)

TIRUVANNAMALAI, TAMIL NADU.

CERTIFICATE

This is to Certify that Mr. **N. KARTHIK**

Reg.No. **312817105020** *Sponsored from* **Agni College of Technology** *Chennai has undergone inplant training for the period from 02-12-2019 to 06-12-2019 based on the orders vide Lr.No : 013338/ Adm.1 / A.1 / F.In - Plant Training / 2019, dt. 27.11.2019 our substation at 230 /110 KV Auto substation Tiruvannamalai .*

During the training period, he has gained knowledge in respect of the operation and maintenance activities related to 230/110 KV Auto substation Tiruvannamalai his conduct and character was found to be Good.....

07.12.2019

Asst. Executive Engineer/Maintenance
230KV Auto Sub Station
Tiruvannamalai.

Office of the Executive Engineer, 230KV SS
C.No: 49
Date: 07.12.2019
Thiruvannamalai

TAMIL NADU TRANSMISSION CORPORATION LTD.,
(TANTRANSCO)

TAMIL NADU ELECTRICITY BOARD (TNEB)

TIRUVANNAMALAI, TAMIL NADU.

CERTIFICATE

This is to Certify that Selvi **M. GOMATHI**

Reg.No. **312817105011** Sponsored from **Agni College of Technology** Chennai has undergone inplant training for the period from 02-12-2019 to 06-12-2019 based on the orders vide Lr.No : 013338/ Adm.1 / A.1 / F.In - Plant Training / 2019, dt. 27.11.2019 our substation at 230 /110 KV Auto substation Tiruvannamalai.

During the training period, she has gained knowledge in respect of the operation and maintenance activities related to 230/110 KV Auto substation Tiruvannamalai his conduct and character was found to be Good.

07.12.2019

Asst. Executive Engineer/Maintenance
230KV Auto Sub Station
Tiruvannamalai.

To the Executive Engineer, 230KV SS
C.No: 49
Date: 07.12.2019
Tiruvannamalai

TAMIL NADU TRANSMISSION CORPORATION LTD.,
(TANTRANSCO)

TAMIL NADU ELECTRICITY BOARD (TNEB)

TIRUVANNAMALAI, TAMIL NADU.

CERTIFICATE

This is to Certify that Mr. **S.BHARATHAN**

Reg.No. **312817105005** *Sponsored from* **Agni College of Technology** *Chennai has undergone inplant training for the period from 02-12-2019 to 06-12-2019 based on the orders vide Lr.No : 013338/ Adm.1 / A.1 / F.In - Plant Training / 2019, dt. 27.11.2019 our substation at 230 /110 KV Auto substation Tiruvannamalai .*

During the training period, he has gained knowledge in respect of the operation and maintenance activities related to 230/110 KV Auto substation Tiruvannamalai his conduct and character was found to be Good

07.12.2019

Asst. Executive Engineer/Maintenance
230KV Auto Sub Station
Tiruvannamalai.

O/o the Executive Engineer, 230KV SS
C.No: 49
Date: 07.12.2019
Thiruvannamalai

TAMIL NADU TRANSMISSION CORPORATION LTD.,
(TANTRANSCO)

TAMIL NADU ELECTRICITY BOARD (TNEB)

TIRUVANNAMALAI, TAMIL NADU.

CERTIFICATE

This is to Certify that Selvi..... **G. JEEVITHA**

Reg.No. **312817105017** *Sponsored from* **Agni College of Technology** *Chennai has undergone inplant training for the period from 02-12-2019 to 06-12-2019 based on the orders vide Lr.No : 013338/ Adm.1 / A.1 / F.In - Plant Training / 2019, dt. 27.11.2019 our substation at 230 /110 KV Auto substation Tiruvannamalai .*

During the training period, she has gained knowledge in respect of the operation and maintenance activities related to 230/110 KV Auto substation Tiruvannamalai his conduct and character was found to be ..Good.....

Asst. Executive Engineer/Maintenance
230KV Auto Sub Station
Tiruvannamalai.

Asst. Executive Engineer, 230 KV SS
O.No: 49
Date: 07.2.208
Thiruvannamalai

TVS Training & Services

29642/TVS-TS/2019-20

Certificate

Mr. Rathika V

of Agni College of Technology

(Department of Electrical and Electronics Engineering)

has participated in Industrial Training on Electric Vechicles

conducted by TVS Training and Services Limited

from 25-Nov-19 to 29-Nov-19

TVS TRAINING AND SERVICES LTD. CHENNAI 600 058

Authorized Signatory

TVS TRAINING AND SERVICES LTD.

No. 61, Reddy Street, Vanagaram Main Road, Athipattu, Ambattur Industrial Estate, Chennai - 600 058 Tel. +91-44-2613 6600 www.tvsts.com

INT:RE19S0250

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **RIZWANA S** student of **AGNI COLLEGE OF TECHNOLOGY, BE/EEE** has undergone the internship in our concern entitled **EMBEDDED SYSTEM** from **3rd December 2019 to 5th December 2019** in relevant departments related to their academic studies.

During the above period, the performance was good & we wish great success in all your future endeavours.

RETECH SOLUTIONS PVT. LTD. CHENNAI 600 045

Authorised Signature

INT:RE19S0142

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **SRIDHAR A** student of **AGNI COLLEGE OF TECHNOLOGY, BE/EEE** has undergone the Inplant Training in our concern entitled **POWER ELECTRONICS** from **28th November 2019 to 30th November 2019** in relevant departments related to their academic studies.

During the above period, the performance was good & we wish great success in all your future endeavours.

RETECH SOLUTIONS PVT LTD. CHENNAI 600 045

Authorised Signature

RETECH
SOLUTIONS PVT. LTD.
An ISO 9001:2015 certified company

INT:RE19S0139

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **SURESH K** student of **AGNI COLLEGE OF TECHNOLOGY, BE/EEE** has undergone the Inplant Training in our concern entitled **POWER ELECTRONICS** from **28th November 2019 to 30th November 2019** in relevant departments related to their academic studies.

During the above period, the performance was good & we wish great success in all your future endeavours.

RETECH SOLUTIONS PVT. LTD. CHENNAI 600 045

Authorised Signature

No-31, 1st Floor, Alagesan Street, Tambaram West, Chennai-45.
Office : 044-42077204 | +91-8122266653 www.retechsolutions.in

RETECH
SOLUTIONS PVT. LTD.
An ISO 9001:2015 certified company

INT:RE19S0140

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **GOPINATH M** student of **AGNI COLLEGE OF TECHNOLOGY, BE/EEE** has undergone the Inplant Training in our concern entitled **POWER ELECTRONICS** from **28th November 2019 to 30th November 2019** in relevant departments related to their academic studies.

During the above period, the performance was good & we wish great success in all your future endeavours.

RETECH SOLUTIONS PVT. LTD. CHENNAI 600 045

Authorised Signature

RETECH

[illegible]

[illegible] OF TERM MAINTENANCE

This is to certify that **CHARAN KUMAR D.P.** [illegible] of **AGNI COLLEGE OF TECHNOLOGY - OF TEX** has completed the internship training in our company **POWER EASY DRIVES** from 28th November 2019 to 30th November 2019 in [illegible] Applications subject to field technical studies.

During the above period, the performance was good & we wish good success in all your future endeavours.

Authorised Signatory

No. [illegible] 3rd Floor, Kingston Street, Santhome, West, Chennai-[illegible]

Office : 044-4207 [illegible] / +91 [illegible] www.[illegible]

INT-RE19S0141

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **WILSON KUMAR E** student of **AGNI COLLEGE OF TECHNOLOGY, BE/EEE** has undergone the Inplant Training in our concern entitled **POWER ELECTRONICS** from **28th November 2019 to 30th November 2019** in relevant departments related to their academic studies.

During the above period, the performance was good & we wish great success in all your future endeavours.

HI TECH SOLUTIONS PVT LTD CHENNAI 600 045

Authorised Signature

No-31, 1st Floor, Alageson Street, Tam

ಎಲ್ ಸಿ ಎ ತೇಜಸ್ ವಿಭಾಗ
एल सी ए तेजस प्रभाग
L C A TEJAS DIVISION
ಬೆಂಗಳೂರು ಸಂಕೀರ್ಣ / बेंगलूर कॉम्प्लेक्स / BANGALORE COMPLEX
ಹಿಂದೂಸ್ಥಾನ್ ಏರೋನಾಟಿಕ್ಸ್ ಲಿಮಿಟೆಡ್
हिन्दुस्तान एरोनॉटिक्स लिमिटेड
HINDUSTAN AERONAUTICS LIMITED

ಅಂಚೆ ಪೆಟ್ಟಿಗೆ ಸಂಖ್ಯೆ 3791, ಬೆಂಗಳೂರು-560 037, ಭಾರತ
पोस्ट बैग सं. 3791, बेंगलूरु - 560037, भारत
Post Bag No. 3791, Bengaluru - 560037, India
ದೂರವಾಣಿ / दूरभाष / Ph.: 91-80- 2232 3812, 2232 3811, 2232 3595
ಫ್ಯಾಕ್ಸ್ / फैक्स / Fax: 91-80-2232 3808

No. LCA/HR/TM/46/1789/2019

दिनांक/Date 29.06.2019

CERTIFICATE

TO WHOM SO EVER IT MAY CONCERN

This is to certify that Shri. Mathan S, 6th Semester B. E (Mechatronics Engineering), Agni College of Technology, Chennai has undertaken an Internship / Project in partial fulfillment of his academic requirement *at* LCA Tejas Division from 31.05.2019 to 29.06.2019.

2. His behavior & conduct during the above training period was Very Good.

3. We wish him all the best for future endeavors.

29/06/19

(जे जोशी / J. JOSHI)
व.प्र(मासं) - एलसीए तेजस/SM(HR)-LCA TEJAS

ನೋಂದಾಯಿತ ಕಛೇರಿ : 15/1, ಕಬ್ಬನ್ ರಸ್ತೆ, ಬೆಂಗಳೂರು-560001, ಭಾರತ
पंजीकृत कार्यालय : 15 /1, कब्बन रोड़, बेंगलूरु - 560 001, भारत
Registered Office : 15 /1, Cubbon Road, Bengaluru - 560 001, India
ಸಿ ಐ ಎನ್ / सी आई एन / CIN: L35301KA1963GOI001622

ಎಲ್ ಸಿ ಎ ತೇಜಸ್ ವಿಭಾಗ
एल सी ए तेजस प्रभाग
L C A TEJAS DIVISION
ಬೆಂಗಳೂರು ಸಂಕೀರ್ಣ / बेंगलूर कॉम्प्लेक्स / BANGALORE COMPLEX
ಹಿಂದೂಸ್ಥಾನ್ ಏರೋನಾಟಿಕ್ಸ್ ಲಿಮಿಟೆಡ್
हिन्दुस्तान एरोनॉटिक्स लिमिटेड
HINDUSTAN AERONAUTICS LIMITED

ಅಂಚೆ ಪೆಟ್ಟಿಗೆ ಸಂಖ್ಯೆ ೩೭೯೧, ಬೆಂಗಳೂರು-೫೬೦ ೦೩೭, ಭಾರತ
पोस्ट बैग सं. 3791, बेंगलूरु - 560037, भारत
Post Bag No.3791, Bengaluru - 560037, India
ದೂರವಾಣಿ / दूरभाष / Ph.: 91 - 80 - 22323812, 22323811, 22323595
ಫ್ಯಾಕ್ಸ್ / फैक्स / Fax: 91 - 80 - 22323808

No. LCA/HR/TM/46/1786/2019

दिनांक/Date 29.06.2019

CERTIFICATE

TO WHOM SO EVER IT MAY CONCERN

This is to certify that Shri. Sharan Kumar J, 6th Semester B. E (Mechatronics Engineering), Agni College of Technology, Chennai has undertaken an Internship / Project in partial fulfillment of his academic requirement *at* LCA Tejas Division from 31.05.2019 to 29.06.2019.

2. His behavior & conduct during the above training period was Very Good.

3. We wish him all the best for future endeavors.

29/06/19

(जे जोशी / J. JOSHI)
व.प्र(मासं) - एलसीए तेजस/SM(HR)-LCA TEJAS

ನೋಂದಾಯಿತ ಕಛೇರಿ : ೧೫/೧, ಕಬ್ಬನ್ ರಸ್ತೆ, ಬೆಂಗಳೂರು-೫೬೦೦೦೧, ಭಾರತ
पंजीकृत कार्यालय : 15 /1, कब्बन रोड़, बेंगलूरु - 560 001, भारत
Registered Office : 15 /1, Cubbon Road, Bengaluru - 560 001, India
ಸಿ ಐ ಎನ್ / सी आई एन / CIN: L35301KA1963GOI001622

ಎಲ್ ಸಿ ಎ ತೇಜಸ್ ವಿಭಾಗ
एल सी ए तेजस प्रभाग
L C A TEJAS DIVISION
ಬೆಂಗಳೂರು ಸಂಕೀರ್ಣ / बेंगलूर कॉम्प्लेक्स / BANGALORE COMPLEX
ಹಿಂದೂಸ್ಥಾನ್ ಏರೋನಾಟಿಕ್ಸ್ ಲಿಮಿಟೆಡ್
हिन्दुस्तान एरोनॉटिक्स लिमिटेड
HINDUSTAN AERONAUTICS LIMITED

ಅಂಚೆ ಪೆಟ್ಟಿಗೆ ಸಂಖ್ಯೆ 3791, ಬೆಂಗಳೂರು-560 037, ಭಾರತ
पोस्ट बैग सं. 3791, बेंगलूरु - 560 037, भारत
Post Bag No. 3791, Bengaluru - 560 037, India
ದೂರವಾಣಿ / दूरभाष / Ph.: 91 - 80 - 22323812, 22323811, 22323595
ಫ್ಯಾಕ್ಸ್ / फैक्स / Fax: 91 - 80 - 22323808

No. LCA/HR/TM/46/1387/2019

दिनांक/Date 29.06.2019

CERTIFICATE

TO WHOM SO EVER IT MAY CONCERN

This is to certify that Shri. Vishwadath A, 6th Semester B. E (Mechatronics Engineering), Agni College of Technology, Chennai has undertaken an Internship / Project in partial fuifillment of his academic requirement *at* LCA Tejas Division from 31.05.2019 to 29.06.2019.

2. His behavior & conduct during the above training period was Very Good.

3. We wish him all the best for future endeavors.

29/06/19

(ಜೆ ಜೋಶಿ / J. JOSHI)
ವ.ಪ್ರ(ಮಾಸಂ) - ಎಲಸೀಎ ತೇಜಸ/SM(HR)-LCA TEJAS

ASHOK LEYLAND
Aapki Jeet. Hamari Jeet.

CERT. No: HRD/T&D/1304
10TH JULY 2019

TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Ms. R SHIVAANI DEVI** of **"AGNI COLLEGE OF TECHNOLOGY"** her done her Project **"DEFECT PER VEHICLE REDUCTION IN STEERING SYSTEM"** at ASHOK LEYLAND Ltd, ENNORE, CHENNAI, from 11.06.2019 to 10.07.2019.

Her conduct and character during the period of training is found to be good.

S. THANGAVEL
SENIOR MANAGER (L&D)

ASHOK LEYLAND LTD., ENNORE - CHENNAI-57

ASHOK LEYLAND LIMITED
Ennore, Chennai - 600 057, India. T : +91 44 25759444 / 466 F: +91 44 25752273
Registered & Corporate Office: No. 1, Sardar Patel Road, Guindy, Chennai - 600 032, India
T : +91 44 2220 6000 | F : +91.44.2220 6001 | www.ashokleyland.com

HINDUJA GROUP

ASHOK LEYLAND
Aapki Jeet. Hamari Jeet.

CERT. No: HRD/T&D/1305
10TH JULY 2019

TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Ms. M VIDHYA SRI** of **"AGNI COLLEGE OF TECHNOLOGY"** her done her Project **"DEFECT PER VEHICLE REDUCTION IN STEERING SYSTEM"** at ASHOK LEYLAND Ltd, ENNORE, CHENNAI, from 11.06.2019 to 10.07.2019.

Her conduct and character during the period of training is found to be good.

S. THANGAVEL
SENIOR MANAGER (L&D)

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ASHOK LEYLAND LIMITED
Ennore, Chennai - 600 057, India. T : +91 44 25759444 / 466 F: +91 44 25752273
Registered & Corporate Office: No. 1, Sardar Patel Road, Guindy, Chennai - 600 032, India
T : +91 44 2220 6000 | F : +91.44.2220 6001 | www.ashokleyland.com

ONEGENE

WONJIN AUTOPARTS INDIA PVT. LTD.

Plot No. A1 K
CMDA Industrial Complex,
Maraimalai Nagar - 603 209
Tel : 91 - 44 - 4740 4400
Fax : 044 - 4740 0142
e-mail : hr@onegeneindia.in

Date: 24.06.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. M. AKILAN (312816115003)** Pursuing B.E (MECHATRONICS ENGINEERING) in **AGNI COLLEGE OF TECHNOLOGY - THALAMBUR** has completed his Internship Training from **18-06-2019 to 22.06.2019.** During the period of Internship Training, his conduct has been good.

Wishing you good luck in future endeavors.

For Wonjin Auto parts India Pvt. Ltd.

WONJIN AUTOPARTS INDIA PVT. LTD. M.M.NAGAR 603 209

24/6/2019

M.WILLIAM.

HR- Manager.

216-1, Keum-Ahmri, Jinchun-eup, Jinchun-gun, Chongchungbuk-do, Korea.
Tel. : 82-43-533-9342 Fax : 82-43-533-9349

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WONJIN AUTOPARTS INDIA PVT. LTD.

Plot No. A1 K
CMDA Industrial Complex,
Maraimalai Nagar - 603 209.
Tel : 91 - 44 - 4740 4400
Fax : 044 - 4740 0142
e-mail : hr@onegeneindia.in

Date: 24.06.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. R. SATHISWARA BALAJE (312816115035)** Pursuing **B.E (MECHATRONICS ENGINEERING)** in **AGNI COLLEGE OF TECHNOLOGY - THALAMBUR** has completed his Internship Training from **18-06-2019 to 22.06.2019.** During the period of Internship Training, his conduct has been good.

Wishing you good luck in future endeavors.

For Wonjin Auto parts India Pvt. Ltd.

WONJIN AUTOPARTS INDIA PVT. LTD. M.M.NAGAR 603 209

24/6/2019

M.WILLIAM.

HR- Manager.

216-1, Koum-Ahmri, Jinchun-eup, Jinchun-gun, Chongchungbuk-do, Korea.
Tel. : 82-43-533-9342 Fax : 82-43-533-9349

ONEGENE
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WONJIN AUTOPARTS INDIA PVT. LTD.

Plot No. A1 K
CMDA Industrial Complex,
Maraimalai Nagar - 603 209.
Tel : 91 - 44 - 4740 4400
Fax : 044 - 4740 0142
e-mail : hr@onegeneindia.in

Date: 24.06.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. T. JANAKI RAMAN (312816115013) Pursuing B.E (MECHATRONICS ENGINEERING) in AGNI COLLEGE OF TECHNOLOGY - THALAMBUR** has completed his Internship Training from **18-06-2019 to 22.06.2019.** During the period of Internship Training, his conduct has been good.

Wishing you good luck in future endeavors.

For Wonjin Auto parts India Pvt. Ltd.

WONJIN AUTOPARTS INDIA PVT. LTD. M.M.NAGAR

24/6/2019

M.WILLIAM.

HR- Manager.

216-1, Keum-Ahmri, Jinchun-eup, Jinchun-gun, Chongchungbuk-do, Korea.
Tel. : 82-43-533-9342 Fax : 82-43-533-9349

ONEGENE
The best one

WONJIN AUTOPARTS INDIA PVT. LTD.

Plot No. A1 K
CMDA Industrial Complex,
Maraimalai Nagar - 603 209.
Tel : 91 - 44 - 4740 4400
Fax : 044 - 4740 0142
e-mail : hr@onegeneindia.in

Date: 24.06.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. J.KALAIVANAN (312816115014) Pursuing B.E (MECHATRONICS ENGINEERING) in AGNI COLLEGE OF TECHNOLOGY - THALAMBUR** has completed his Internship Training from **18-06-2019 to 22.06.2019.** During the period of Internship Training, his conduct has been good.

Wishing you good luck in future endeavors.

For Wonjin Auto parts India Pvt. Ltd.

WONJIN AUTOPARTS INDIA PVT. LTD. M.M.NAGAR

24/6/20

M.WILLIAM.

HR- Manager.

216-1, Keum-Ahmri, Jinchun-eup, Jinchun-gun, Chongchungbuk-do, Korea.
Tel. : 82-43-533-9342 Fax : 82-43-533-9349

सवारी डिब्बा कारखाना, चेन्नै - 600 038

रेल मंत्रालय की एक उत्पादन इकाई

INTEGRAL COACH FACTORY, CHENNAI - 600 038

A Production Unit Under Ministry of Railways

(AN ISO: 9001, ISO:14001 AND BS : 18001 CERTIFIED PRODUCTION UNIT)

Sl.No. : M/484/2019

Date : 26/06/2019

Certificate

This is to certify that Mr./~~Ms.~~ ARUN. B

Regn.No 312817115006 *Course* B.E

Branch MECHATRONICS, III *Year, Student of*

AGNI COLLEGE OF TECHNOLOGY,

has undergone Inplant Training from 19-6-2019 *to* 26-6-2019

at Integral Coach Factory.

Office of the Principal / TTC / ICF

Principal
Technical Training Centre
ICF, Chennai-38

सवारी डिब्बा कारखाना, चेन्नै - 600 038

रेल मंत्रालय की एक उत्पादन इकाई

INTEGRAL COACH FACTORY, CHENNAI - 600 038

A Production Unit Under Ministry of Railways

(AN ISO: 9001, ISO:14001 AND BS : 18001 CERTIFIED PRODUCTION UNIT)

Sl.No. : M/483/2019

Date : 26/ 06/ 2019

Certificate

This is to certify that Mr./~~Ms.~~ DAMODHARAN. S

Regn.No 312817115010 *Course* B.E

Branch MECHATRONICS, III *Year, Student of*

AGNI COLLEGE OF TECHNOLOGY,

has undergone Inplant Training from 19-6-2019 *to* 26-6-2019

at Integral Coach Factory.

Principal
Technical Training Centre
ICF, Chennai-38

CH.P.T. Item Code No. C-81804355
500 Pads 27-11-2018

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:+91-44-25362201

प्रशासनिक कार्यालय
ADMINISTRATIVE OFFICE
राजाजी सालै, चेन्नै- 600 001.
Rajaji Salai, Chennai-600 001.
Website : www.chennaiport.gov.in

CHENNAI PORT TRUST

No. MEE/HA2/001/2019/DY.CME(W) *Date: 21.06.2019*

Certificate No. 829

VOCATIONAL INPLANT TRAINING CERTIFICATE

This is to certify that Shri/Selvi D. VIGNESHVARAN student of AGNI COLLEGE OF TECHNOLOGY, CHENNAI. has undergone INPLANT TRAINING as non-stipendiary vocational trainee for a period from 17.06.2019 to 21.06.2019 in the Electronic processing data Department / Electrical / Mechanical / Electronics division of Mecha nical and Electrical ENGINEERING Department in Chennai Port Trust.

During the period of training his/her attendance, work and conduct were found good.

M & E.E.- I. OFFICE
CHENNAI PORT TRUST
M & E. Engg. Dept.

G.S. Chitrappa 21/6/19
(G.S. CHITRAPPA)
Superintending Engineer (Mech) Works
for CHIEF MECHANICAL ENGINEER

RAMBAL

RAMBAL LIMITED, No. 115, Edaiyankuppam Village, Thirukkazhukundram Road, Thiruporur- 603 110. INDIA
Ph: +91 9884434651 Website: www.rambalindia.net

Date: 15/12/2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr.D.MUTHARASU, , (Reg.No.312817116028)**, studying Third year BE – Mechanical and Automation Engineering in Agni College of Technology , Chennai – 600130 has undergone Internship Training at our Rambal Limited, Thiruporur plant from 30.11.2019 to 07.12.2019.

We wish him all the best for all his future endeavors.

Thanking you

Yours faithfully,

For Rambal Limited
(Thiruporur Division)

R.NAGARAJAN
HEAD HR & ADMIN

RAMBAL

RAMBAL LIMITED, No. 115, Edaiyankuppam Village, Thirukkazhukundram Road, Thiruporur- 603 110. INDIA
Ph: +91 9884434651 Website: www.ramballndia.net

Date: 15/12/2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr.M.GANESAN, , (Reg.No.312818116010),** studying Second year BE – Mechanical and Automation Engineering in Agni College of Technology , Chennai – 600130 has undergone Internship Training at our Rambal Limited, Thiruporur plant from 30.11.2019 to 07.12.2019.

We wish him all the best for all his future endeavors.

Thanking you

Yours faithfully,

For Rambal Limited
(Thiruporur Division)

R.NAGARAJAN
HEAD HR & ADMIN

J-TECH INSTRUMENTS

CERTIFICATE OF INTERNSHIP

his is to certify that Mr. / ~~Ms.~~ S. GANESH RAM..... student of Agni College of Technology.....Studying B.E Mechanical and Automation Engineering (2017-21) has successfully completed the internship program in the field of Basic Mechanical and Electrical for 6 days from 21/11/2019 to 27/11/2019

During the period of his / ~~her~~ internship program with us, performance and attitude was good.

Rindy
Manager - HR

DATE : 27/11/2019

J-TECH INSTRUMENTS

CERTIFICATE OF INTERNSHIP

This is to certify that Mr. / ~~Ms.~~ ..K. MUGILARASAN..... student of ..Agni....College....of.. .....Technology.....Studying .B.E.....Mechanical...and....Automation..Engineering (2017-21).. has successfully completed the internship program in the field of Basic..Mechanical and..Electrical for ...6.. days from.21/11/2019. to .27/11/2019

During the period of his / ~~her~~ internship program with us, performance and attitude was good.

DATE : 27/11/2019

Manager - HR

J-TECH INSTRUMENTS

CERTIFICATE OF INTERNSHIP

This is to certify that Mr. / ~~Ms.~~ ..L..B.A.L.A.....M.U.R.U.G.A.N.... student of ..Agni...College...of.. .....Technology.....Studying ..B.E....Mechanical...and...Automation..Engineering (2017-21). has successfully completed the internship program in the field of Basic..Mechanico and..Electrical for ..6.. days from 21/11/2019 to ..27/11/2019

During the period of his / ~~her~~ internship program with us, performance and attitude was good.

DATE : 27/11/2019

Manager - HR

J-TECH INSTRUMENTS

CERTIFICATE OF INTERNSHIP

This is to certify that ~~Mr.~~ / Ms. .....K. NITHYA..... student of ..Agni....College..... ...of....Technology.....Studying ..B.E....Mechanical...and...Automation...Engineering (2017-21). has successfully completed the internship program in the field of Basic...Mechanical and...Electrical for ..6... days from.21/11/2019. to 27/11/2019.

During the period of ~~his~~ / her internship program with us, performance and attitude was good.

Manager - HR

DATE : 27/11/2019

Certificate of Completion

This certificate is awarded to

Mr/Ms B.ADITHYA NARAYANAN B.E - SECOND YEAR

MECHANICAL AND AUTOMATION

AGNI COLLEGE OF TECHNOLOGY

has successfully completed the

INTERNSHIP TRAINING

at our factory premises from 23/12/19 *to* 28/12/19

"PLC AUTOMATION"

Vi Microsystems Pvt. Ltd., Chennai.

MANAGER
Project & Training

Vi Microsystems Pvt. Ltd., Chennai.

Plot No: 75, Electronics Estate, Perungudi, Chennai-96.
Ph No. 044 - 2496 0774, 2496 1842
E-mail : training@vimicrosystems.com
Web : www.vimicrosystems.com

Certificate of Completion

This certificate is awarded to

Mr/Ms S.NAVEEN B.E - SECOND YEAR

MECHANICAL AND AUTOMATION

AGNI COLLEGE OF TECHNOLOGY

has successfully completed the

INTERNSHIP TRAINING

at our factory premises from 23/12/19 *to* 28/12/19

"PLC AUTOMATION"

Vi Microsystems Private Limited Chennai 600 096

MANAGER
Project & Training

Vi Microsystems Pvt. Ltd., Chennai.

Plot No: 75, Electronics Estate, Perungudi, Chennai-96.
Ph No. 044 - 2496 0774, 2496 1842
E-mail : training@vimicrosystems.com
Web : www.vimicrosystems.com

Certificate of Completion

This certificate is awarded to

Mr/Ms R.KRISHNA - BE - SECOND YEAR

MECHANICAL AND AUTOMATION

AGNI COLLEGE OF TECHNOLOGY

has successfully completed the

INTERNSHIP TRAINING

at our factory premises from 23/12/19 *to* 28/12/19

"PLC AUTOMATION"

Vi Microsystems Private Limited
Chennai
600 096

MANAGER
Project & Training

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RAMBAL

RAMBAL LIMITED, No. 115, Edaiyankuppam Village, Thirukkazhukundram Road, Thiruporur- 603 110. INDIA
Ph: +91 9884434651 Website: www.rambalindia.net

Date: 15/12/2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr.G.PRAVEEN KUMAR, , (Reg.No.312818116023),** studying Second year BE – Mechanical and Automation Engineering in Agni College of Technology , Chennai – 600130 has undergone Internship Training at our Rambal Limited, Thiruporur plant from 30.11.2019 to 07.12.2019.

We wish him all the best for all his future endeavors.

Thanking you

Yours faithfully,

For Rambal Limited
(Thiruporur Division)

R.NAGARAJAN
HEAD HR & ADMIN

Certificate of Completion

This Certificate is awarded to

Mr./Ms SANTHOSIVAM. J, III yr (B.E - Mechanical & Automation Engg)

Agni College of Technology

PLC AUTOMATION

has successfully completed the

IN - PLANT TRAINING

at our factory premises from 25/11/19 *to* 29/11/19

Vi Microsystems Private Limited Chennai 600 096

Manager - Training
Vi Microsystems Pvt. Ltd.,

Vi Microsystems Pvt. Ltd., Chennai.
Plot No: 75, Electronics Estate, Perungudi, Chennai-96.
Ph No: 044-43132210, 24961842
E-mail : training@vimicrosystems.com
Web : www.vimicrosystems.com

Certificate of Completion

This Certificate is awarded to

Mr./Ms. RAJA SELVAN. R., III yr (B.E - Mechanical & Automation Engg)

Agni College of Technology

PLC AUTOMATION

has successfully completed the

IN - PLANT TRAINING

at our factory premises from 25/11/19 *to* 29/11/19

Vi Microsystems Private Limited
Chennai
600 096

Manager - Training
Vi Microsystems Pvt. Ltd.,

Vi Microsystems Pvt. Ltd., Chennai.

Plot No: 75, Electronics Estate, Perungudi, Chennai-96.
Ph No: 044-43132210, 24961842
E-mail : training@vimicrosystems.com
Web : www.vimicrosystems.com

Certificate of Completion

This Certificate is awarded to

Mr./Ms MIDHUN. G. B , III yr (B.E-Mechanical & Automation Engg)

Agni College of Technology

PLC AUTOMATION

has successfully completed the

IN - PLANT TRAINING

at our factory premises from 25/11/19 *to* 29/11/19

Vi Microsystems Private Limited Chennai 600 096

Manager - Training
Vi Microsystems Pvt. Ltd.,

Vi Microsystems Pvt. Ltd., Chennai.
Plot No: 75, Electronics Estate, Perungudi, Chennai-96.
Ph No: 044-43132210, 24961842
E-mail : training@vimicrosystems.com
Web : www.vimicrosystems.com

Certificate of Completion

This Certificate is awarded to

Mr./Ms. A. Mohamed Asfar - B.E., Third Year, MAE,

Agni College of Technology,

Embedded System & IoT Technology.

has successfully completed the

IN - PLANT TRAINING

at our factory premises from 25.11.2019 to 30.11.2019

Vi Microsystems Private Limited Chennai 600 096

Manager - Training
Vi Microsystems Pvt. Ltd.

Vi Microsystems Pvt. Ltd., Chennai.
Plot No: 75, Electronics Estate, Perungudi, Chennai-96.
Ph No: 044-43132210, 24961842
E-mail : training@vimicrosystems.com
Web : www.vimicrosystems.com

YUKEN INDIA LIMITED

Manufacturers of Oil Hydraulic Equipment
IN COLLABORATION WITH YUKEN KOGYO CO. LTD., JAPAN
An ISO 9001 : 2015 Company

Our Ref No. :		Factory :	Post Box No. : 05, Survey No(s). : 11,12, 16 – 18, Malur – Hosur Road,
			Village – Koppathimanahalli, Taluk – Malur, District – Kolar, Karnataka. PIN Code – 563 130
CIN No. :	L29150KA1976PLC003017	Regd. Office :	No.16/c, Doddanekundi Indl Area,
			Mahadevapura Post, Bangalore – 560048
Date :	07 December 2019	E – Mail ID :	prasanna_rao@yukenindia.com

CERTIFICATE

This is to certify that **Mr. GOPINATH M (Reg. No 312817116015) B.E (Mechanical & Automation Engg)** from **Agni College of technology, OMR , Thalambur, Chennai-600130,** He has undergone Summer Internship as a part of his Curriculum, at our company during the period from **02nd December 2019 to 07th December 2019.**

During the tenure of his study, we found him attentive in his assignments, His Character and Conduct was good.

We wish all the best for his future.

Thanking You,

Yours's faithfully,
for **YUKEN INDIA LIMITED,**

Mr. Prasanna Rao V
Head – HR, IR & Administration

YUKEN

YUKEN INDIA LIMITED

Manufacturers of Oil Hydraulic Equipment
IN COLLABORATION WITH YUKEN KOGYO CO. LTD., JAPAN
An ISO 9001 : 2015 Company

Our Ref No. :		**Factory :**	Post Box No. : 05, Survey No(s). : 11,12, 16 – 18, Malur – Hosur Road,
			Village – Koppathimanahalli, Taluk – Malur, District – Kolar, Karnataka. PIN Code – 563 130.
CIN No. :	L29150KA1976PLC003017	**Regd. Office :**	No.16/c, Doddanekundi Indl Area,
			Mahadevapura Post, Bangalore – 560048
Date :	07 December 2019	**E – Mail ID :**	prasanna_rao@yukenindia.com

CERTIFICATE

This is to certify that **Mr. AKASH S (Reg. No 312817116301) B.E (Mechanical & Automation Engg)** from **Agni College of technology, OMR , Thalambur, Chennai-600130,** He has undergone Summer Internship as a part of his Curriculum, at our company during the period from **02nd December 2019 to 07th December 2019.**

During the tenure of his study, we found him attentive in his assignments, His Character and Conduct was good.

We wish all the best for his future.

Thanking You,

Yours's faithfully,
for **YUKEN INDIA LIMITED,**

Mr. Prasanna Rao V
Head – HR, IR & Administration

YUKEN

YUKEN INDIA LIMITED

Manufacturers of Oil Hydraulic Equipment
IN COLLABORATION WITH YUKEN KOGYO CO. LTD., JAPAN.
An ISO 9001 : 2015 Company

Our Ref No. :		**Factory :**	Post Box No. : 05, Survey No(s). : 11,12, 16 – 18, Malur – Hosur Road,
			Village – Koppathimanahalli, Taluk – Malur, District – Kolar, Karnataka. PIN Code – 563 130
CIN No. :	L29150KA1976PLC003017	**Regd. Office :**	No.16/c, Doddanekundi Indl Area,
			Mahadevapura Post, Bangalore – 560048
Date :	07 December 2019	**E – Mail ID :**	prasanna_rao@yukenindia.com

CERTIFICATE

This is to certify that **Mr. SUDHAN ANANDH (Reg. No 312817116040) B.E (Mechanical & Automation Engg)** from **Agni College of technology, OMR , Thalambur, Chennai-600130,** He has undergone Summer Internship as a part of his Curriculum, at our company during the period from **02nd December 2019 to 07th December 2019.**

During the tenure of his study, we found him attentive in his assignments, His Character and Conduct was good.

We wish all the best for his future.

Thanking You,

Yours's faithfully,
for **YUKEN INDIA LIMITED,**

Mr. Prasanna Rao V
Head – HR, IR & Administration

YUKEN

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Manufacturers of Oil Hydraulic Equipment
IN COLLABORATION WITH YUKEN KOGYO CO. LTD., JAPAN.
An ISO 9001 : 2015 Company

Our Ref No. :		**Factory :**	Post Box No. : 05, Survey No(s). : 11,12, 16 – 18, Malur – Hosur Road,
			Village – Koppathimanahalli, Taluk – Malur, District – Kolar, Karnataka. PIN Code – 563 130.
CIN No. :	L29150KA1976PLC003017	**Regd. Office :**	No.16/c, Doddanekundi Indl Area,
			Mahadevapura Post, Bangalore – 560048
Date :	07 December 2019	**E – Mail ID :**	prasanna_rao@yukenindia.com

CERTIFICATE

This is to certify that **Mr. SHEIK RIYAZ N (Reg. No 312817116039) B.E (Mechanical & Automation Engg)** from **Agni College of technology, OMR , Thalambur, Chennai-600130,** He has undergone Summer Internship as a part of his Curriculum, at our company during the period from **02nd December 2019 to 07th December 2019.**

During the tenure of his study, we found him attentive in his assignments, His Character and Conduct was good.

We wish all the best for his future.

Thanking You,

Yours's faithfully,
for **YUKEN INDIA LIMITED,**

Mr. Prasanna Rao V
Head – HR, IR & Administration

YUKEN

appin
Technology Lab

Date: 02/12/2019

INTERNSHIP CERTIFICATE

This is to inform that **Mr. NAVEEN SUNDAR K,** 2nd year B.E., Mechanical and Automation Engineering student of **AGNI COLLEGE OF TECHNOLOGY,** Chennai, has attended Internship training in our organization from November 26th 2019 to December 02nd 2019.

During this Internship training, he has learned the overview concepts of **MACHINE LEARNING.**

Thanking You.

For APPIN TECHNOLOGY L A

Authorised Sign

144, Sengupta Street, Near Hotel City Towers,
Ram Nagar, Coimbatore - 641009.

T : 0422 450 2000 • M : +91 - 77080 40308
www.appincoimbatore.com • E: info@appincoimbatore.com

CERTIFIED ISO 9001:2015 COMPANY

In Association with NPTEL

NASSCOM

USDLA

appin
Technology Lab

Date: 02/12/2019

INTERNSHIP CERTIFICATE

This is to inform that **Mr. SAKTHIPRIYAN S,** 2nd year B.E., Mechanical and Automation Engineering student of **AGNI COLLEGE OF TECHNOLOGY,** Chennai, has attended Internship training in our organization from November 26th 2019 to December 02nd 2019.

During this Internship training, he has learned the overview concepts of **MACHINE LEARNING.**

Thanking You.

For APPIN TECHNOLOGY LAB

Authorised Signatory

144, Sengupta Street, Near Hotel City Towers,
Ram Nagar, Coimbatore - 641009.

T : 0422 450 2000 • M : +91 - 77080 40308
www.appincoimbatore.com • E: info@appincoimbatore.com

In Association with NPTEL NASSCOM USDLA

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Technology Lab

Date: 02/12/2019

INTERNSHIP CERTIFICATE

This is to inform that **Mr. KARTHICK R,** 2nd year B.E., Mechanical and Automation Engineering student of **AGNI COLLEGE OF TECHNOLOGY,** Chennai, has attended Internship training in our organization from November 26th 2019 to December 02nd 2019.

During this Internship training, he has learned the overview concepts of **MACHINE LEARNING.**

Thanking You.

For APPIN TECHNOLOGY LAB

Authorised Signatory

144, Sengupta Street, Near Hotel City Towers,
Ram Nagar, Coimbatore - 641009.

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www.appincoimbatore.com • E: info@appincoimbatore.com

appin
Technology Lab

Date: 02/12/2019

INTERNSHIP CERTIFICATE

This is to inform that **Mr. SURYA S,** 2nd year B.E., Mechanical and Automation Engineering student of **AGNI COLLEGE OF TECHNOLOGY,** Chennai, has attended Internship training in our organization from November 26th 2019 to December 02nd 2019.

During this Internship training, he has learned the overview concepts of **MACHINE LEARNING.**

Thanking You.

For APPIN TECHNOLOGY LAB

Authorised Signatory

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Ram Nagar, Coimbatore - 641009.

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Technology Lab

Date: 02/12/2019

INTERNSHIP CERTIFICATE

This is to inform that **Mr. ARUN KUMAR R,** 2nd year B.E., Mechanical and Automation Engineering student of **AGNI COLLEGE OF TECHNOLOGY,** Chennai, has attended Internship training in our organization from November 26th 2019 to December 02nd 2019.

During this Internship training, he has learned the overview concepts of **MACHINE LEARNING.**

Thanking You.

For APPIN TECHNOLOGY L

Authorised Signa

144, Sengupta Street, Near Hotel City Towers,
Ram Nagar, Coimbatore - 641009.

T : 0422 450 2000 • M : +91 - 77080 40308
www.appincoimbatore.com • E: info@appincoimbatore.com

In Association with NPTEL NASSCOM USDLA

appin
Technology Lab

Date: 02/12/2019

INTERNSHIP CERTIFICATE

This is to inform that **Mr. YOKESH RAJ M,** 2nd year B.E., Mechanical and Automation Engineering student of **AGNI COLLEGE OF TECHNOLOGY,** Chennai, has attended Internship training in our organization from November 26th 2019 to December 02nd 2019.

During this Internship training, he has learned the overview concepts of **MACHINE LEARNING.**

Thanking You.

For APPIN TECHNOLOGY

Authorised Signatory

144, Sengupta Street, Near Hotel City Towers,
Ram Nagar, Coimbatore - 641009.

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www.appincoimbatore.com • E: info@appincoimbatore.com

CERTIFIED ISO 9001:2015 COMPANY

In Association with NPTEL

NASSCOM

USDLA

NANO TECH

DATE: 06.12.2019

INTERNSHIP COMPLETION LETTER

We glad to inform you that **MR.G.SURESH** from M&A Department Agni College of Technology, has successfully completed his Internship at **Nanotech Projects** from **27.11.2019 to 06.12.2019**

During Internship, he has exposed the various activities in Arduino Programming

We found him extremely inquisitive and hardworking He was very much Interested to learn to learn the functions of our core division and also willing to put his best efforts and get in to depth of the subject to understand it better.

His association with us was very fruitful and we wish him all the best in his future endeavors.

Authorized signature

NANO TECH INDUSTRIES INNOVATIVE NAGAPATTINAM 611 001

No: 5, 2nd Floor, SKN Tower, Neela West Vadambooki Street, Nagapattinam. Email: 2008nanotech@gmail.com, www.nanotechproject.i
Cell: +91 97500 62955, +91 99944 78565

NANO TECH

DATE: 06.12.2019

INTERNSHIP COMPLETION LETTER

We glad to inform you that **MR.R.MUKILAN** from M&A Department Agni College of Technology, has successfully completed his Internship at **Nanotech Projects** from **27.11.2019 to 06.12.2019**

During Internship, he has exposed the various activities in Arduino Programming

We found him extremely inquisitive and hardworking He was very much Interested to learn to learn the functions of our core division and also willing to put his best efforts and get in to depth of the subject to understand it better.

His association with us was very fruitful and we wish him all the best in his future endeavors.

Authorized signature

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Cell: +91 97500 62955, +91 99944 78565

NANO TECH

DATE: 06.12.2019

INTERNSHIP COMPLETION LETTER

We glad to inform you that **MR.A.AALAN SANTHOSH** from M&A Department Agni College of Technology, has successfully completed his Internship at **Nanotech Projects** from **27.11.2019 to 06.12.2019**

During Internship, he has exposed the various activities in Arduino Programming

We found him extremely inquisitive and hardworking He was very much Interested to learn to learn the functions of our core division and also willing to put his best efforts and get in to depth of the subject to understand it better.

His association with us was very fruitful and we wish him all the best in his future endeavors.

Authorized signature

NANO TECH INNOVATIVE INDUSTRIES NAGAPATTINAM 611 001

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Cell: +91 97500 62955, +91 99944 78565

NANO TECH

DATE: 06.12.2019

INTERNSHIP COMPLETION LETTER

We glad to inform you that **MR.S.NAVANEETHA KRISHNAN** from M&A Department Agni College of Technology, has successfully completed his Internship at **Nanotech Projects** from **27.11.2019 to 06.12.2019**

During Internship, he has exposed the various activities in Arduino Programming

We found him extremely inquisitive and hardworking He was very much Interested to learn to learn the functions of our core division and also willing to put his best efforts and get in to depth of the subject to understand it better.

His association with us was very fruitful and we wish him all the best in his future endeavors.

Authorized signature

NANOTECH INDUSTRIES INNOVATIVE NAGAPATTINAM 611 001

o: 5, 2nd Floor, SKN Tower, Neela West Vadambooki Street, Nagapattinam. Email: 2008nanotech@gmail.com, www.nanotechproject.i
Cell: +91 97508 62955, +91 99944 78565

Diamond Engineering (Chennai) Pvt. Ltd.
Anything in Steel
ISO 9001 : 2015 Certified Company
Intertek

REGISTERED OFFICE / COMMUNICATION
No.501, Vandalur - Kelambakkam Main Road,
Mambakkam, Chennai - 600 127 Tamil Nadu, India
Ph: +91 44 27479149 / 152; Fax +91 44 27479151
Email: finance@decpl.com, taxation@decpl.com
Website : www.decpl.com

DG/PROJ81/ COMPLN/81/19-20 30.11.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that, Mr. HARINIVAS RM of Third Year BE MECHANICAL AND AUTOMATION ENGINEERING from AGNI COLLEGE OF TECHNOLOGY has completed the INPLANT TRAINING in our esteemed organization from 25.11.2019 to 30.11.2019.

During this period his character was good and appreciable in nature.

For Diamond Engineering (Chennai) Pvt. Ltd.

K.Sankara Narayanan
Head – HR

Diamond Engineering (Chennai) Pvt. Ltd.
Anything in Steel
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REGISTERED OFFICE / COMMUNICATION
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Website : www.decpl.com

DG/PROJ81/ COMPLN/87/19-20 30.11.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that, Mr. KISHORE KUMAR M of Third Year BE MECHANICAL AND AUTOMATION ENGINEERING from AGNI COLLEGE OF TECHNOLOGY has completed the INPLANT TRAINING in our esteemed organization from 25.11.2019 to 30.11.2019.

During this period his character was good and appreciable in nature.

For Diamond Engineering (Chennai) Pvt. Ltd.

K.Sankara Narayanan
Head – HR

Diamond Engineering (Chennai) Pvt. Ltd.
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Website : www.decpl.com

DG/PROJ81/ COMPLN/86/19-20 30.11.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that, Mr. VISHNU S of Third Year BE MECHANICAL AND AUTOMATION ENGINEERING from AGNI COLLEGE OF TECHNOLOGY has completed the INPLANT TRAINING in our esteemed organization from 25.11.2019 to 30.11.2019.

During this period his character was good and appreciable in nature.

For Diamond Engineering (Chennai) Pvt. Ltd.

K.Sankara Narayanan
Head – HR

Diamond Engineering (Chennai) Pvt. Ltd.
Anything in Steel
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Email: finance@decpl.com, taxation@decpl.com
Website : www.decpl.com

DG/PROJ81/ COMPLN/80/19-20 30.11.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that, Mr. DHINAKARAN S of Third Year BE MECHANICAL AND AUTOMATION ENGINEERING from AGNI COLLEGE OF TECHNOLOGY has completed the INPLANT TRAINING in our esteemed organization from 25.11.2019 to 30.11.2019.

During this period his character was good and appreciable in nature.

For Diamond Engineering (Chennai) Pvt. Ltd.

K.Sankara Narayanan
Head – HR

Diamond Engineering (Chennai) Pvt. Ltd.
Anything in Steel
ISO 9001 : 2015 Certified Company

REGISTERED OFFICE / COMMUNICATION
No.501, Vandalur - Kelambakkam Main Road,
Mambakkam, Chennai - 600 127. Tamil Nadu, India.
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Email: finance@decpl.com, taxation@decpl.com
Website : www.decpl.com

DG/PROJ81/ COMPLN/88/19-20 30.11.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that, Mr. HARISH KUMAR R of Third Year BE MECHANICAL AND AUTOMATION ENGINEERING from AGNI COLLEGE OF TECHNOLOGY has completed the INPLANT TRAINING in our esteemed organization from 25.11.2019 to 30.11.2019.

During this period his character was good and appreciable in nature.

For Diamond Engineering (Chennai) Pvt. Ltd.

K.Sankara Narayanan
Head – HR

Diamond Engineering (Chennai) Pvt. Ltd.
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Website : www.decpl.com

DG/PROJ81/ COMPLN/82/19-20 30.11.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that, Mr. JARESHIAH SAMUEL S of Third Year BE MECHANICAL AND AUTOMATION ENGINEERING from AGNI COLLEGE OF TECHNOLOGY has completed the INPLANT TRAINING in our esteemed organization from 25.11.2019 to 30.11.2019.

During this period his character was good and appreciable in nature.

For Diamond Engineering (Chennai) Pvt. Ltd.

K.Sankara Narayanan
Head – HR

Diamond Engineering (Chennai) Pvt. Ltd.
Anything in Steel
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Website : www.decpl.com

DG/PROJ81/ COMPLN/83/19-20 30.11.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that, Mr. KARTHIK S of Third Year BE MECHANICAL AND AUTOMATION ENGINEERING from AGNI COLLEGE OF TECHNOLOGY has completed the INPLANT TRAINING in our esteemed organization from 25.11.2019 to 30.11.2019.

During this period his character was good and appreciable in nature.

For Diamond Engineering (Chennai) Pvt. Ltd.

K.Sankara Narayanan
Head – HR

Diamond Engineering (Chennai) Pvt. Ltd.
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Website : www.decpl.com

DG/PROJ81/ COMPLN/84/19-20 30.11.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that, Mr. SARAN RAJ R of Third Year BE MECHANICAL AND AUTOMATION ENGINEERING from AGNI COLLEGE OF TECHNOLOGY has completed the INPLANT TRAINING in our esteemed organization from 25.11.2019 to 30.11.2019.

During this period his character was good and appreciable in nature.

For Diamond Engineering (Chennai) Pvt. Ltd.

K.Sankara Narayanan
Head – HR

Diamond Engineering (Chennai) Pvt. Ltd.
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Mambakkam, Chennai - 600 127 Tamil Nadu, India
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Email: finance@decpl.com, taxation@decpl.com
Website : www.decpl.com

DG/PROJ81/ COMPLN/85/19-20 30.11.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that, Mr. VIGNESHWARAN N of Third Year BE MECHANICAL AND AUTOMATION ENGINEERING from AGNI COLLEGE OF TECHNOLOGY has completed the INPLANT TRAINING in our esteemed organization from 25.11.2019 to 30.11.2019.

During this period his character was good and appreciable in nature.

For Diamond Engineering (Chennai) Pvt. Ltd.

K.Sankara Narayanan
Head – HR

Diamond Engineering (Chennai) Pvt. Ltd.
Anything in Steel
ISO 9001 : 2015 Certified Company

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Website : www.decpl.com

DG/PROJ81/ COMPLN/79/19-20 30.11.2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that, Mr. BHARATH RAJ M of Third Year BE MECHANICAL AND AUTOMATION ENGINEERING from AGNI COLLEGE OF TECHNOLOGY has completed the INPLANT TRAINING in our esteemed organization from 25.11.2019 to 30.11.2019.

During this period his character was good and appreciable in nature.

For Diamond Engineering (Chennai) Pvt. Ltd.

K.Sankara Narayanan
Head – HR

Dalmia
Bharat Cement

newthink! cement! sugar! refractories! power!

DCB/RTC/IPT/01

Date: 30.11.2019

CERTIFICATE

*This is to certify that **Mr. R.Arut selvan** pursuing Second year B.E(mech.) from Agni College of Technology, Chennai has undergone **In-Plant Training** in our Organization from 28.11.2019 to 30.11.2019.*

During the Training Period, his/her Performance, Conduct was found to be Good.

We wish all success for his /her Bright Future.

For DALMIA CEMENT (BHARAT) LTD.,

Authorized Signatory

Dalmia Cement (Bharat) Ltd. Dalmia Dalmiapuram - 621 651

Dalmia Cement (Bharat) Limited
Dalmiapuram, District-Trichy-621 651, Tamil Nadu, India
t 91 4329235123, f 91 4329235111 w www.dalmiacement.com. CIN : U65191TN1996PLC035963
Registred Office : Dalmiapuram, Dist. Tiruchirapalli, Tamil Nadu-621 651, India
A **Dalmia Bharat Group** company, www.dalmiabharat.com

SINTEX-BAPL LTD.
Oragadam Plant
Survey No.131 to 135,Ezhichoor Main Road, Ezhichoor Village,
Sriperumbudur Taluk,Kanchipuram District,Tamilnadu, Pin : 603 204.
Ph : 044-27107742 . E-mail : info@brightautoplast.com www.sintex.in

SINTEX
BAPL

29.11.2019

TO WHOMSOEVER ITMAY CONCERN

This is to Certify that Mr. GOKULNATH. M student of AGNI College of Technology Thalambur Chennai, has successfully completed his internship in SINTEX-BAPL LTD., for the period from 25.11.2019 to 29.11.2019.The student has completed the assignment satisfactorily. Wish him all the best for his future endeavors.

Thanking you,

Yours faithfully,

For SINTEX BAPL Ltd.,

SINTEX - BAPL LTD - PLANT II ORAGADAM

R.Veeralakshmi

Executive- HR

SINTEX-BAPL LTD.
Oragadam Plant
Survey No.131 to 135,Ezhichoor Main Road, Ezhichoor Village,
Sriperumbudur Taluk,Kanchipuram District,Tamilnadu. Pin : 603 204.
Ph : 044-27107742 , E-mail : info@brightautoplast.com www.sintex.in

SINTEX BAPL

29.11.2019

TO WHOMSOEVER ITMAY CONCERN

This is to Certify that Mr. DHINESH.A student of AGNI College of Technology Thalambur Chennai, has successfully completed his internship in SINTEX-BAPL LTD., for the period from 25.11.2019 to 29.11.2019.The student has completed the assignment satisfactorily. Wish him all the best for his future endeavors.

Thanking you,

Yours faithfully,

For SINTEX BAPL Ltd.,

SINTEX - BAPL LTD - PLANT II ORAGADAM

R.Veeralakshmi

Executive- HR

SINTEX-BAPL LTD.
Oragadam Plant
Survey No.131 to 135,Ezhichoor Main Road, Ezhichoor Village,
Sriperumbudur Taluk,Kanchipuram District,Tamilnadu. Pin : 603 204.
Ph : 044-27107742 , E-mail : info@brightautoplast.com www.sintex.in

SINTEX
BAPL

29.11.2019

TO WHOMSOEVER ITMAY CONCERN

This is to Certify that Mr. HARISH. B student of AGNI College of Technology Thalambur Chennai, has successfully completed his internship in SINTEX-BAPL LTD., for the period from 25.11.2019 to 29.11.2019.The student has completed the assignment satisfactorily. Wish him all the best for his future endeavors.

Thanking you,

Yours faithfully,

For SINTEX BAPL LTD.,

SINTEX - BAPL LTD - PLANT II * ORAGADAM *

R.Veeralakshmi

Executive- HR

SINTEX-BAPL LTD.
Oragadam Plant
Survey No.131 to 135,Ezhichoor Main Road, Ezhichoor Village,
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Ph : 044-27107742 , E-mail : info@brightautoplast.com www.sintex.in

SINTEX
BAPL

29.11.2019

TO WHOMSOEVER ITMAY CONCERN

This is to Certify that Mr. JAIKUMAR. M student of AGNI College of Technology Thalambur Chennai, has successfully completed his internship in SINTEX-BAPL LTD., for the period from 25.11.2019 to 29.11.2019.The student has completed the assignment satisfactorily. Wish him all the best for his future endeavors.

Thanking you,

Yours faithfully,

For SINTEX BAPL Ltd.,

SINTEX - BAPL LTD - PLANT II ORAGADAM

R.Veeralakshmi

Executive- HR

SINTEX-BAPL LTD.
Oragadam Plant
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Sriperumbudur Taluk,Kanchipuram District,Tamilnadu. Pin : 603 204.
Ph : 044-27107742 , E-mail : info@brightautoplast.com www.sintex.in

29.11.2019

TO WHOMSOEVER ITMAY CONCERN

This is to Certify that Mr. PHILIP SOLOMON.I student of AGNI College of Technology Thalambur Chennai, has successfully completed his internship in SINTEX-BAPL LTD., for the period from 25.11.2019 to 29.11.2019.The student has completed the assignment satisfactorily. Wish him all the best for his future endeavors.

Thanking you,

Yours faithfully,

For SINTEX BAPL Ltd.,

R. Veeralakshmi

Executive- HR

SINTEX - BAPL LTD - PLANT II ORAGADAM

SINTEX-BAPL LTD.
Oragadam Plant
Survey No.131 to 135,Ezhichoor Main Road, Ezhichoor Village,
Sriperumbudur Taluk,Kanchipuram District,Tamilnadu. Pin : 603 204.
Ph : 044-27107742 , E-mail : info@brightautoplast.com www.sintex.in

SINTEX
BAPL

29.11.2019

TO WHOMSOEVER ITMAY CONCERN

This is to Certify that Mr. JAIKISHAN. J student of AGNI College of Technology Thalambur Chennai, has successfully completed his internship in SINTEX-BAPL LTD., for the period from 25.11.2019 to 29.11.2019.The student has completed the assignment satisfactorily. Wish him all the best for his future endeavors.

Thanking you,

Yours faithfully,

For SINTEX BAPL Ltd.,

SINTEX - BAPL LTD - PLANT II ORAGADAM

R.Veeralakshmi

Executive- HR

Canada: 10 Ozark Ct, Brampton, Ontario, Canada L6Y 0L4 +1 647 298 7285
HQ: 340 S Lemon Ave, #6493, Fremont, CA, USA 91789 +1 925 395 3684
Sales HQ: 3, Cuff Road, Singapore 209 714 +65 9383 0420
India R&D: Papani Apt, 62nd St, Ashok Nagar, Chennai 600 083 +91 87 90 878 222
HR@FixNix.co | FixNix.co

FixNix InfoSec Solutions Pvt Ltd

30-April-2020
Chennai, India.

Experience Letter

Dear Aravind.R,

This is to certify that Mr. Aravind was working as a Web developer from 02/08/2019 to 30/04/2020

During his tenure in our organization, we have found him to be a self-starter who is sincere, motivated, duty bound, and a highly committed team player with strong conceptual, knowledge, dedicated and hardworking and were to our expectation.

He ably handled major responsibilities and found him to be hardworking and very productive. We at FixNix InfoSec Solutions Pvt. Ltd wish all success in his future endeavors

Happy Nixing!!!

FixNix Inc. General Corporation SEAL 2014 DELAWARE

S. Shanmugavel.

Shanmugavel Sankaran

Director, FixNix Inc

Canada: 10 Ozark Ct, Brampton, Ontario, Canada L6Y 0L4 +1 647 298 7285
HQ: 340 S Lemon Ave, #6493, Fremont, CA, USA 91789 +1 925 395 3684
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India R&D: Papani Apt, 62nd St, Ashok Nagar, Chennai 600 083 +91 87 90 878 222
HR@FixNix.co | FixNix.co

FixNix InfoSec Solutions Pvt Ltd

30-April-2020
Chennai, India.

Experience Letter

Dear Nagaraj G,

This is to certify that Mr. Nagaraj was working as a Web developer from 02/08/2019 to 30/04/2020

During his tenure in our organization, we have found him to be a self-starter who is sincere, motivated, duty bound, and a highly committed team player with strong conceptual, knowledge, dedicated and hardworking and were to our expectation.

He ably handled major responsibilities and found him to be hardworking and very productive. We at FixNix InfoSec Solutions Pvt. Ltd wish all success in his future endeavors

Happy Nixing!!!

FixNix Inc. General Corporation SEAL 2014 DELAWARE

S. Shanmugavel.

Shanmugavel Sankaran

Director, FixNix Inc

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India R&D: Papani Apt, 62nd St, Ashok Nagar, Chennai 600 083 +91 87 90 878 222
HR@FixNix.co | FixNix.co

FixNix InfoSec Solutions Pvt Ltd

30-April-2020
Chennai, India.

Experience Letter

Dear Nivi,

This is to certify that Mr. Nivi was working as a Web developer from 02/08/2019 to 30/04/2020

During her tenure in our organization, we have found her to be a self-starter who is sincere, motivated, duty bound, and a highly committed team player with strong conceptual, knowledge, dedicated and hardworking and were to our expectation.

She ably handled major responsibilities and found her to be hardworking and very productive. We at FixNix InfoSec Solutions Pvt. Ltd wish all success in her future endeavors

Happy Nixing!!!

FixNix Inc. General Corporation SEAL 2014 DELAWARE

S. Shanmugavel.

Shanmugavel Sankaran

Director, FixNix Inc

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India R&D: Papani Apt, 62nd St, Ashok Nagar, Chennai 600 083 +91 87 90 878 222
HR@FixNix.co | FixNix.co

FixNix InfoSec Solutions Pvt Ltd

30-April-2020
Chennai, India.

Experience Letter

Dear Vetri.E,

This is to certify that Mr. Vetri was working as a Web developer from 02/08/2019 to 30/04/2020

During his tenure in our organization, we have found him to be a self-starter who is sincere, motivated, duty bound, and a highly committed team player with strong conceptual, knowledge, dedicated and hardworking and were to our expectation.

He ably handled major responsibilities and found him to be hardworking and very productive. We at FixNix InfoSec Solutions Pvt. Ltd wish all success in his future endeavors

Happy Nixing!!!

FixNix Inc. General Corporation SEAL 2014 DELAWARE

S. Shanmugavel.

Shanmugavel Sankaran

Director, FixNix Inc

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India R&D: Papani Apt, 62nd St, Ashok Nagar, Chennai 600 083 +91 87 90 878 222
HR@FixNix.co | FixNix.co

FixNix InfoSec Solutions Pvt Ltd

30-April-2020
Chennai, India.

Experience Letter

Dear Vinodhini.R,

This is to certify that Mr. Vinodhini was working as a Web developer from 02/08/2019 to 30/04/2020

During her tenure in our organization, we have found her to be a self-starter who is sincere, motivated, duty bound, and a highly committed team player with strong conceptual, knowledge, dedicated and hardworking and were to our expectation.

She ably handled major responsibilities and found her to be hardworking and very productive. We at FixNix InfoSec Solutions Pvt. Ltd wish all success in her future endeavors

Happy Nixing!!!

FixNix Inc. General Corporation SEAL 2014 DELAWARE

S. Shanmugavel.

Shanmugavel Sankaran

Director, FixNix Inc

ANOOR CLOUD
TECHNOLOGIES PVT LTD

Telephone : +91 2433 1828
Website : anoorcloud.com

05th July

Ms. Stephi S.R,

No.5, Silverstar Street,

Suleeswaranpatti, Pollachi,

Coimbatore – 642 006

Dear Stephi,

We are pleased to confirm your acceptance of an internship position as a **Trainee** with Anoor Cloud Technologies. Your duties and assignments for this position will be those described to you in your orientation with the assigned supervisor. The Duration of the internship will be from **5th July 2019 – 5th January 2020.**

We look forward to working with you and offer a very warm welcome.

For Anoor Cloud Technologies (P) Ltd,

Director

ANOOR CLOUD TECHNOLOGIES PVT. LTD. CHENNAI

Temple Towers, 2nd Floor, 672/476, Anna Salai, Nandanam, Chennai - 600 035

ANOOR CLOUD
TECHNOLOGIES PVT LTD

Telephone : +91 2433 1828
Website : anoorcloud.com

05th July

Ms. Varshini Sree J.K,

8/48 Kavimani nagar, 3rd street,

Kovilambakkam, Chennai – 600 129

Dear Varshini,

We are pleased to confirm your acceptance of an internship position as a **Trainee** with Anoor Cloud Technologies. Your duties and assignments for this position will be those described to you in your orientation with the assigned supervisor. The Duration of the internship will be from **5th July 2019 – 5th January 2020.**

We look forward to working with you and offer a very warm welcome.

For Anoor Cloud Technologies (P) Ltd,

Director

ANOOR CLOUD TECHNOLOGIES PVT. LTD. CHENNAI