Course Outcomes (CO)

(R 2017)

Branch: B.E, Mechatronics Engineering

Course Code: C101 Course Name: HS8151 Communicative English

C101.1	Read articles of a general kind in magazines and newspapers.
C101.2	Participate effectively in informal conversations; introduce themselves and their friends and express opinions in English.
C101.3	Comprehend conversations and short talks delivered in English.
C101.4	Write short essays of a general kind.
C101.5	Write personal letters and emails in English.

Course Code: C102 Course Name: MA8151 Engineering Mathematics-I

C102.1	Use both the limit definition and rules of differentiation to differentiate functions
C102.2	Evaluate integrals both by using Riemann sums and by using the Fundamental Theorem of Calculus
C102.3	Evaluate integrals using techniques of integration, such as substitution, partial fractions and integration by parts.
C102.4	Apply differentiation to solve maxima and minima problems.
C102.5	Determine convergence/divergence of improper integrals and evaluate convergent improper integrals.
C102.6	Apply integration to compute multiple integrals, area, volume, integrals in polar coordinates, in addition to change of order and change of variables.
C102.7	Apply various techniques in solving differential equations.

Course Code: C103 Course Name: PH8151 Engineering Physics

C103.1	The students will gain knowledge on the basics of properties of matter and its applications
C103.2	The students will acquire knowledge on the concepts of waves and optical devices and their applications in fibre optics
C103.3	The students will have adequate knowledge on the concepts of thermal properties of the materials and their applications in expansion joints and heat exchangers.
C103.4	The students will get knowledge on advanced physics concepts of quantum theory and its applications in tunnelling microscopes,
C103.5	The students will understand the basics of crystals their structures and different crystal growth techniques.

Course Code: C104 Course Name: CY8151 Engineering Chemistry

C104.1	To make the students conversant with boiler feed water requirements, related problems and water treatment techniques.
C104.2	To develop an understanding of the basic concepts of phase rule and its applications to single and two component systems and appreciate the purpose and significance of alloys.
C104.3	Preparation, properties and applications of engineering materials.
C104.4	Types of fuels, calorific value calculations, manufacture of solid, liquid and gaseous fuels.
C104.5	Principles and generation of energy in batteries, nuclear reactors, solar cells, wind mills and fuel cells.

GE8151 Problem Solving and Python Programming

C105.1	Develop algorithmic solutions to simple computational problems
C105.2	Read, write, execute by hand simple Python programs.
C105.3	Structure simple Python programs for solving problems.
C105.4	Decompose a Python program into functions.
C105.5	Represent compound data using Python lists, tuples, dictionaries. Read and write data from/to files in Python Programs.

Course Code: C106 Course Name: GE8152 Engineering Graphics

C106.1	Ability to familiarize with the fundamentals and standards of Engineering graphics
C106.2	Ability to perform freehand sketching of basic geometrical constructions and multiple views of objects
C106.3	Ability to Project orthographic projections of lines and plane surfaces
C106.4	Ability to draw projections of solids and development of surfaces

C106.5	Ability to visualize and to project isometric and perspective sections of simple solids

Course Code: C107 Course Name: GE8161 Problem Solving and Python Programming Lab

C107.1	Write, test, and debug simple Python programs.
C107.2	Implement Python programs with conditionals and loops.
C107.3	Develop Python programs step-wise by defining functions and calling them.
C107.4	Use Python lists, tuples, dictionaries for representing compound data.
C107.5	Read and write data from/to files in Python.

Course Code: C108 Course Name: BS8161 Physics & Chemistry Lab

C108.1	To provide the basic practical exposure to all the engineering and technological streams in the field of physics with properties of matter and liquids.
C108.2	To provide the basic practical exposure to all the engineering and technological streams in the field of optics.
C108.3	The students are able to know about the thermal physics .
C108.4	To gain the knowledge about crystalline materials.
C108.5	To develop the knowledge of fiber optics cables optics and its applications

Course Code: C109 Course Name: HS8251 Technical English

C109.1	Read technical texts
C109.2	Write area- specific texts effortlessly.
C109.3	Listen lectures in their area of specialization.
C109.4	Comprehend talks in their area of specialisation
C109.5	Speak appropriately and effectively in varied formal and informal contexts.

Course Code: C110 Course Name: MA 8251 Engineering Mathematics-II

C110.1	Eigen values and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices.
C110.2	Gradient, divergence and curl of a vector point function and related identities.
C110.3	Evaluation of line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification.
C110.4	Analytic functions, conformal mapping and complex integration.
C110.5	Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.

Course Code: C111 Course Name: PH8251 Material Science

C111.1	The students will have knowledge on the various phase diagrams and their applications
C111.2	The students will acquire knowledge on Fe-Fe2C phase diagram various microstructures and alloys
C111.3	The students will get knowledge on mechanical properties of materials and their measurements
C111.4	The students will gain knowledge on magnetic dielectric, and superconducting materials and properties of materials
C111.5	The students will understand the basics of ceramics , composites and nano materials

Course Code: C112 Course Name: BE8253 Basic Electrical, Electronics and Instrumentation Engineering

C112.1	Understand the basic eelctric circuits and various theroms
C112.2	Understand the concepts of AC circuits
C112.3	Understanding the working principles of electrical machines
C112.4	Understand the concepts of various electronic devices
C112.5	Choose appropriate instruments for electrical measurement for a specific application

Course Code: C113 Course Name: GE8291 Environment science and engineering

C113.1	Public awareness of environment at infant stage.
C113.2	Pollution controlling aids
C113.3	Development and improvement in standard of living has lead to serious environmental disasters.

C113.4	Ignorance and incomplete knowledge has lead to misconceptions. Knowledge about water conservation methods.
C113.5	World's Population related problems and AIDS

Course Code: C114 Course Name: GE8292 Engineering Mechanics

C114.1	Ability to illustrate the vectorial and scalar representation of forces and moments
C114.2	Ability to analyse the rigid body in equilibrium
C114.3	Ability to evaluate the properties of surfaces and solids
C114.4	Ability to calculate dynamic forces exerted in rigid body
C114.5	Ability to determine the friction and the effects by the laws of friction

Course Code: C115 Course Name: GE8261 Engineering Practices Laboratory

C115.1	Ability to Fabricate carpentry components and pipe connections including plumbing works
C115.2	Ability to Use welding equipments to join the structures
C115.3	Ability to Carry out the basic machining operations
C115.4	Ability to Make the models using sheet metal works
C115.5	Ability to Illustrate on centrifugal pump, Air conditioner, operations of smithy, foundry and fittings

Course Code: C201 Course Name: MA8353 Transforms and Partial Differential Equations

C201.1	Understand how to solve the given standard partial differential equations.
C201.2	Solve differential equations using Fourier series analysis which plays a vital role in engineering applications.
C201.3	Appreciate the physical significance of Fourier series techniques in solving one and two dimensional heat flow problems and one dimensional wave equations.
C201.4	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.
C201.5	Use the effective mathematical tools for the solutions of partial differential equations by using Z transform techniques for discrete time systems.

Course Code: C202 Course Name: CE 8395 Strength of Materials for Mechanical Engineer

C202.1	To understand the basics of Stress-Strain relationships and the deformation of solids
C202.2	To gain the fundamental knowledge on Transverse loading of beams and the stress distribution.
C202.3	To understand the torsional stresses developed in the shafts and the deflection in springs.
C202.4	To understand the methods of finding deflection of the beams
C202.5	To understand the stresses and deformation developed in the thin and thick cylinders

Course Code: C203 Course Name: CE 8394 Fluid Mechanics and Machinery

C203.1	To understand the basics concepts of fluid properties and their applications.
C203.2	To gain the fundamental knowledge on fluid flow through pipes of various section and its losses and boundary layer concept.
C203.3	To formulate equations for model and prototype for various applications and analysing it dimensionally.
C203.4	To understand the working principle of various pumps and its performance evaluation and comparison.
C203.5	To understand the working principle of various turbine and its performance evaluation and comparison.

Course Code: C204 Course Name: EC 8392 Digital Electronics

C204.1	Use digital electronics in the present contemporary world
C204.2	Design various combinational digital circuits using logic gates
C204.3	Do the analysis and design procedures for synchronous and asynchronous sequential circuits
C204.4	Use the semiconductor memories and related technology
C204.5	Use electronic circuits involved in the design of logic gates

Course Code: C205 Course Name: MT 8301 Electrical Machines and Drives

C205.1	Get the basic knowledge about the Electric circuits and transformers.
C205.2	Understand the various types of electrical motors.
C205.3	Know about speed control and starting methods DC and induction motors

C205.4	Understand about various types of electrical drives
C205.5	Get exposure with solid state drives

Course Code: C206 Course Name: MT 8302 Analog Devices and Circuits

206.1	Apply the various switching devices in electronic circuits.
206.2	Work with various applications of amplifiers
206.3	Design various circuits using ICs.
206.4	Test and measure different parameters available in electronic circuits.
206.5	Explain the principles of various display devices.

Course Code: C207 Course Name: CE 8381Strength of Materials and Fluid Mechanics and Machinery Laboratory

207.1	Ability to perform Tension, Torsion, Hardness, Compression, and Deformation test on Solid materials.
207.2	Utilize appropriate materials in design considering engineering properities, sustainablity
207.3	Perform Tension, Torsion, Hardness, Compression, and Deformation test on Solid materials.
207.4	Use the measurement equipments for flow measurement.
207.5	Perform test on different fluid machinery.

Course Code: C208 Course Name: MT 8311 Electrical Machines and Drives Laboratory

208.1	Test and assess the performances of the DC motors and single phase AC motor for varying load.
208.2	Control the speed of AC and DC motor.
208.3	Analyze and present the findings of experimental observations in both written and oral format.
208.4	Understand about various types of electrical drives
208.5	Get exposure with solid state drives

Course Code: C209 Course Name: HS 8381 Interpersonal Skills / Listening speaking

209.1	Ability to Listen and respond appropriately
209.2	Ability to participate in group discussions
209.3	Ability to make effective presentations
209.4	Ability to give information and converse with accuracy
209.5	Participate confidently in conversations both formal and informal

Course Code: C210 Course Name: ME 8392 Manufacturing Technology

210.1	To understand the basic concepts of metal cutting, different types of machine tools, tool materials, single point cutting tool geometry and cutting fluids used in manufacturing.
210.2	To understand the working principle of types of turning machine and its operations along with power and machining time estimation.
210.3	To understand working principles and applications of shaping, drilling, boring, milling and gear generating machines.
210.4	To enrich the knowledge of abrasive process, types of grinding and broaching machines.
210.5	Ability to understand the evolution, types, features and gaining the CNC programming knowledge, and micro machining.

Course Code: C211 Course Name: MT 8491Microprocessors and Microcontrollers

211.1	Distinguish the feature of the 8085 microprocessor, Hardware Architecture and PIN diagram.
211.2	Demonstrate programming proficiency using the various addressing modes and data transfer instructions of 8085 microprocessor
211.3	Acquaint the knowledge on architecture and programming of Microcontroller 8051.
211.4	Illustrate the interrupts handling and demonstrate peripherals applications in different IC and Know about A/D and D/A converters.
211.5	Apply the programming concepts to interface the hardware units with microprocessor and Microcontroller

Course Code: C212 Course Name: MT 8492 Kinematics of Machinery

212.1	To apply fundamentals of mechanism for the design of new mechanisms
212.2	To analyze the velocity and acceleration at any point in a link of mechanisms for optimum design
212.3	To understand the kinematics and design of cam and follower mechanism.
212.4	To gain the knowledge on kinematics of gears and its applications in gear trains.
212.5	To apply the effect of friction in belt drives, rope drives, brakes, clutches, screw jacks and bearings.

Course Code: C213 Course Name: MT 8401 Thermodynamics and Heat Transfer

213.1	Understand the basic concepts associated first law of thermodynamics
213.2	Understand basic concepts associated with second law of thermodynamics
213.3	Describing the working of I.C engines and to determine its performance parameters
213.4	Basic principles of refrigeration, air conditioning and psychometric chart
213.5	Distinguishing the various modes of heat transfer and its applications

Course Code: C214 Course Name: MT 8411 Microprocessors and Microcontrollers Laboratory

214.1	Solve the arithmatic operations using microprocessor and various on chip and off chip interfacing
214.2	Design the digital and analog hardware interface for microprocessor based systems
214.3	Solve the arithmatic operations using microcontroller and various on chip and off chip interfacing
214.4	Design the digital and analog hardware interface for microcontroller based systems
214.5	Able to design and implement simple mechatronics system

Course Code: C215 Course Name: ME 8461 Manufacturing Technology Laboratory

215.1	Ability to use different machine tools to create complicated channels and Develop CNC part programming
215.2	Ability to use different machine tools to manufacturing gears.
215.3	Ability to use different machine tools for finishing operations
215.4	Ability to measure various cutting forces on a cutting tool
215.5	Ability to manufacture tools using cutter grinder

Course Code: C216 Course Name: ME 8391 Computer Aided Machine Drawing

216.1	Follow the drawing standards, Fits and Tolerances
216.2	Re-create part drawings, sectional views and assembly drawings as per standards
216.3	Recognise the part drawing and 30 model
216.4	Ability to understand the sectional views
216.5	Illustrate various machines components through drawings

Course Code: C217 Course Name:HS 8461 Advanced Reading and Writing

217.1	Ability to read and evaluate texts critically
217.2	Ability to write different types of essays
217.3	Ability to write reports and winning job applications
217.4	Ability to organize ideas, projects and to write e-mails.
217.5	Ability to display critical thinking in various professional contexts.

Course Code: C301 Course Name:EE 8552 Power Electronics

301.1	Ability to understand the working of power semi conductor devicess
301.2	Ability to analyse AC-DC converters
301.3	Ability to analyse DC-DC converters
301.4	Ability to analyse DC-AC converters
301.5	Ability to analyse AC-AC converters

Course Code: C302 Course Name:MT 8591 Sensors and Instrumentation

302.1	Familiar with various calibration techniques and signal types for sensors.
302.2	Apply the various sensors in the Automotive and Mechatronics applications
302.3	Describe the working principle and characteristics of force, magnetic and heading sensors.
302.4	Understand the basic principles of various pressure and temperature, smart sensors.
302.5	Ability to implement the DAQ systems with different sensors for real time applications.

Course Code: C303 Course Name:ME 8594 Dynamics of Machines

303.1	Calculate static and dynamic forces of mechanisms.
303.2	Calculate the balancing masses and their locations of reciprocating and rotating masses.
303.3	Compute the frequency of free vibration.
303.4	Compute the frequency of forced vibration and damping coefficient.

303.5	Calculate the speed and lift of the governor and estimate the gyroscopic effect on automobiles, ships and airplanes.

Course Code: C304 Course Name:EC 8391 Control Systems Engineering

304.1	Identify the various control system components and their representations.
304.2	Analyze the various time domain parameters.
304.3	Analysis the various frequency response plots and its system.
304.4	Apply the concepts of various system stability criterions.
304.5	Design various transfer functions of digital control system using state variable models.

Course Code: C305 Course Name:OMF 111 Product Design and Development

305.1	Able to design some products for the given set of applications
305.2	Able to learn about concept generation and selection.
305.3	Able to learn about product architeture.
305.4	Able to learn about industrial design.
305.5	Able to make a prototype of a problem and hence product design and development can be achieved

Course Code: C306 Course Name:MT 8511 Power Electronics Laboratory

306.1	Ability to use SCR, MOSFET, TRIAC in electronics
306.2	Ability to use UJT,RRC,firing circuits
306.3	Ability to perform characteristics study of AC-DC
306.4	Ability to perform characteristics study of choppers
306.5	Ability to perform characteristics study of inverters and AC-AC converters

Course Code: C307 Course Name:MT 8512 Sensors and Instrumentation Laboratory

307.1	Generate appropriate design procedure, suitable for signal conversion to interface with computer.
307.2	Design appropriate circuits by using conventional formulas used in signal conditioning and conversion.
307.3	Implement their design in bread board and test it.
307.4	Generate appropriate design procedure to obtain a required measurement data for temperature, force, humidity, displacement and sound.
307.5	Log the data in computer using LABVIEW/ MATLAB/PSILAB.

Course Code: C308 Course Name:ME 8481 Dynamics Laboratory

308.1	Ability to demonstrate the principles of kinematics of machinery.
308.2	Ability to demonstrate the principles of dynamics of machinery.
308.3	Ability to use the measuring devices for dynamic testing.
308.4	Ability to study the parameters of kinematics of machinery.
308.5	Ability to study the parameters of dynamics of machinery.

Course Code: C309 Course Name:HS 8581 Professional Communication

309.1	Ability to Listen and respond appropriately
309.2	Ability to participate in group discussions
309.3	Ability to make effective presentations
309.4	Ability to give information and converse with accuracy
309.5	Participate confidently in conversations both formal and informal

Course Code: C310 Course Name:ME 8591 Applied Hydraulics and Pneumatics

310.1	Understanding operating principles and constructional features of hydraulic and pneumatic systems.
310.2	Knowledge with selection of hydraulic / pneumatic components
310.3	Understanding the design of hydraulic circuit and its applications
310.4	Understanding the design of pneumatic circuit and its applications
310.5	Understanding of designing and layout of Hydraulic Power package and trouble shooting.

Course Code: C311 Course Name:MT 8601 Design of Mechatronics System

311.1	Understand the basics and key elements of Mechatronics design process
311.2	Familiar with basic system modelling
311.3	Understand the concepts of engineering system and dynamic response of the system
311.4	Realize the concepts of real time interfacing and data acquisition
311.5	Understanding the concepts of design of Mechatronics system through case studies

Course Code: C312 Course Name:ME 8593 Design of Machine Elements

312.1	To understand and analyze stresses and strains in machine elements.
312.2	To analyze and design the components for power transmission.
312.3	To analyze the various stress developed in temporary and permanent joints.
312.4	To design the energy storing elements, like springs & flywheel.
312.5	To design and implement the various types of standard bearings.

Course Code: C313 Course Name:MT 8602 Industrial Automation

313.1	Choose appropriate PLC and explain the architecture, installation procedures and trouble shooting.
313.2	Develop PLC programs using various functions of PLCs for a given application.
313.3	Explain the application development procedures in SCADA and manage data, alarm and storage.
313.4	Distinguish DCS, SCADA and PLC and explain the architecture of DCS
313.5	Describe the controller elements and program methods.

Course Code: C314 Course Name:MG 8591 Principles of Management

314.1	Understand the definition of management, evolution of management, types of business organization and role of managers in a business entity.
314.2	Know and understand the planning strategy, setting an objective oriented planning, tools and techniques applied for planning and decision
314.3	Understand the organization structure, roles, delegation of authority. Understand the human resource planning, recruitment process, training and development.
314.4	Understand the importance of directing workforce, motivation to employees, job enrichment, essentials of communication between entities of business.
314.5	Understand and generate budget controls, productivity improvement and control framework for achieving the above objectives.

Course Code: C315 Course Name:ME6602 Automobile Engineering

315.1	Understand the various vehicle structure and Components of IC engine.
315.2	Gain Knowledge in various auxiliary systems used in an automobile.
315.3	Understand the principle and application of Transmission systems in an automobile.
315.4	Demonstrate the use of steering, braking and suspension systems in an automobile
315.5	Apply the advantages of various alternative energy sources.

Course Code: C316 Course Name:MT 8611 Applied Hydraulics and Pneumatics laboratory

316.1	Select the actuators and valves for the design of fluid power circuits.
316.2	Design and simulate the fluid power circuits using software tool.
316.3	Test the simulated using Automation Studio
316.4	Design and simulate fluid circuits controlled by PLC
316.5	Understanding the image processing technique using LAB VIEW Software

Course Code: C317 Course Name:MT 8612 Industrial Automation Laboratory

317.1	Carryout wiring connections and troubleshoot in different PLC
317.2	Develop simple applications using LD, ST and FBD mode of programming.
317.3	Use timers and counter functions of PLC to construct simple applications.
317.4	Integrate and control process station with PLC.
317.5	Develop SCADA application using open source software and Perform speed control on AC motor using VFD and PLC.

Course Code: C318 Course Name:ME 8682 Design and Fabrication Project

318.1	Identify a topic in advanced areas of Mechanical Engineering

318.2	Identify methods and materials to carry out experiments/develop code
318.3	Review literature to identify gaps and define objectives & scope of the work
318.4	Reorganize the procedures with a concern for society, environment and ethics
318.5	Generate and implement innovative ideas for social benefit

Course Code: C401 Course Name:ME 8691 Computer Aided Design and Manufacturing

401.1	Explain the 2D and 3D transformations, clipping algorithm, Manufacturing models and Metrics
401.2	Explain the fundamentals of parametric curves, surfaces and Solids
401.3	Summarize the different types of Standard systems used in CAD
401.4	Apply NC & CNC programming concepts to develop part Programme for Lathe & Milling Machines
401.5	Summarize the different types of techniques used in Cellular Manufacturing and FMS

Course Code: C402 Course Name:MT 8701 Robotics and Machine Vision System

402.1	To understand the functions of the basic components of a Robot.
402.2	To study the use of various types of End of Effectors
402.3	To understand the working of sensors and machine vision system
402.4	To impart knowledge in Robot Kinematics and Programming
402.5	To learn Robot safety issues and economics.

Course Code: C403 Course Name:MT 8791 Embedded System Design

403.1	Explain the need of embedded systems and their development procedures.
403.2	Summaries the concepts involved in Real time operating systems.
403.3	Use various tools for developing embedded applications.
403.4	Explain the construction, addressing modes and instructions sets of PIC micro controller.
403.5	Conduct experiments with I/O systems used in embedded systems.

Course Code: C404 Course Name:MT 8002 Advanced Manufacturing Technology

404.1	understand the basics and working of various sheet metal & forming processes.
404.2	Knowledge on various non traditional machining processes with applications.
404.3	understand the various type of surface finishing and surface hardening process.
404.4	understand the concept of EDM & ECM with application.
404.5	understand the work and tool holding devices used for various machine tools.

Course Code: C405 Course Name:GE8071 DISASTER MANAGEMENT

405.1	Differentiate the types of disasters, causes and their impact on environment and society
405.2	Assess vulnerability and various methods of risk reduction measures as well as mitigation.
405.3	Draw the hazard and vulnerability profile of India, Scenarious in the Indian context, Disaster damage assessment and management.
405.4	Able to gain a preliminary understanding of approaches of Disaster Risk Reduction (DRR)
405.5	Able to develop rudimentary ability to respond to their surroundings with potential disaster response in areas where they live, with due sensitivity .

Course Code: C406 Course Name:OAT 751 Production of Automotive Components

406.1	Understand the concept of engine components Manufacturing processes.
406.2	Knowledge on selection of suitable manufacturing processes for automotive components.
406.3	Understand the basics of chassis components.
406.4	Understand the concept of various body components used in automobiles.
406.5	Knowledge on various engineering materials used in automobile component manufacturing.

Course Code: C407 Course Name:MT 8711 Computer Aided and Manufacturing Laboratory

407.1	Model and assemble a given three dimensional engineering components
407.2	Perform various analyses on simple structures for the application of different loads.
407.3	Generate CNC programs for a given components to work with CNC machines

Course Code: C408 Course Name:MT 8781 Robotics Laboratory

408.1	Able to write Robot programming and simulation for pick and place , Colour identification .
408.2	Able to write Robot programming and simulation for Shape identification
408.3	Able to write Robot programming and simulation for machining (cutting, welding) and writing practice .
408.4	Able to write Robot programming and simulation for any industrial process (Packaging, Assembly)
408.5	Able to write Robot programming and simulation for multi process.

Course Code: C409 Course Name:MT 8801 Automotive Electronics

409.1	Know the importance of emission standards in automobiles.
409.2	Understand the electronic fuel injection/ignition components and their function.
409.3	Choose and use sensors and equipment for measuring mechanical quantities, temperature and appropriate actuators
409.4	Diagnose electronic engine control systems problems with appropriate diagnostic tools.
409.5	Analyses the chassis and vehicle safety system.

Course Code: C410 Course Name:MG 8091Enterperunership Development

410.1	Able to understand the basics about entrepreneurship
410.2	Able to understand the objectives of motivation.
410.3	Able to understand the basics of business.
410.4	Able to understand the basics about financing and accounts.
410.5	Able to gain knowledge and skills needed to run a business successfully.

Course Code: C411 Course Name:MG 8892 Marketing management

411.1	Understand the concept of marketing processes.
411.2	Understand the buying behaviour of customers.
411.3	Understand the concept of product pricing.
411.4	Understand the market planning and BCG, GEC grids.
411.5	Understand the concept of advertising, sales and distribution.

Course Code: C412 Course Name:ME 8811 Project Work

412.1	Identify a topic in advanced areas of Mechanical Engineering Identify methods and materials to carry out experiments/develop code
412.2	Review literature to identify gaps and define objectives & scope of the work Reorganize the procedures with a concern for society, environment and ethics
412.3	Generate and implement innovative ideas for social benefit Analyze and discuss the results to draw valid conclusions
412.4	Develop a prototypes/models, experimental set-up and software systems necessary to meet the objectives Prepare a report as per recommended format and defend the work
412.5	Explore the possibility of publishing papers in peer reviewed journals/conference proceedings