



## Course Outcomes (CO)

(R 2013)

Branch: M.E,Communication Systems

Course Code: C101 Course Name: MA7158 Applied Mathematics for Communication Engineers

C101.1	To achieve an understanding of the basic concepts of algebraic equations and method of solving them.
C101.2	To familiarize the students with special functions and solve problems associated with engineering applications.
C101.3	Concepts on vector spaces, linear transformation, inner product spaces, eigen values and generalized eigenvectors.
C101.4	Apply various methods in linear algebra to solve system of linear equations
C101.5	Could develop a fundamental understanding of linear programming models, able to develop a linear programming model from problem de Problems

Course Code: C102 Course Name: CU7101 Advanced Radiation Systems

C102.1	Ability to understand antenna concepts
C102.2	Ability to design antenna for various applications
C102.3	Knowledge of modern antenna design

Course Code: C103 Course Name: CU7102 Advanced Digital Communication Techniques

C103.1	Develop the ability to understand the concepts of signal space analysis for coherent and non coherent receivers
C103.2	Conceptually appreciate different Equalization techniques
C103.3	Possess knowledge on different block codes and convolutional codes
C103.4	Comprehend the generation of OFDM signals and the techniques of multiuser detection.

Course Code: C104 Course Name:AP7101 Advanced Digital Signal Processing

C104.1	State Parseval's theorem, WK theorem, principle of orthogonality, spectral factorization theorem, Widrow Hoff LMS algorithm and Shan
C104.2	Explain various noise types, Yule-Walker algorithm, parametric and non-parametric methods, Wiener and Kalman filtering, LMS and RMS algorithms, Levinson Durbin algorithm, adaptive noise cancellation and adaptive echo cance
C104.3	Calculate mean, variance, auto-correlation and PSD for WSS stochastic processes, and derive prediction error criterion, Wiener-Hoff equa equations.
C104.4	Design AR, MA, ARMA models, Weiner filter, anti aliasing and anti imaging filters, and develop FIR adaptive filter and polyphase filter structures.
C104.5	Simulate spectral estimation algorithms and basic models on computing platform.

Course Code: C105 Course Name:CU7103 Optical Networks

C105.1	Design and Analyze Network Components
C105.2	Assess and Evaluate optical networks

Course Code: C106 Course Name: CU7001 Real Time Embedded Systems

C106.1	Explain different protocols
C106.2	Discuss state machine and design process models
C106.3	Outline embedded software development tools and RTOS

Course Code: C107 Course Name:CU7111 Communication Systems Laboratory

C107.1	Measure and analyze various transmission line parameters.
C107.2	Design Microstrip patch antennas.

C107.3	Implement the adaptive filtering algorithms
C107.4	To generate and detect digital communication signals of various modulation techniques using MATLAB.
C107.5	Evaluate cellular mobile communication technology and propagation model.

Course Code:C201 Course Name:CU7201 Wireless Communication Networks

C202.1	Analyze MIMO system
C202.2	Discuss millimeter wave communication
C202.3	Demonstrate software defined radio and cognitive radio

Course Code:C202 Course Name:CU7202 MIC and RF System Design

C202.1	Capability to design RF circuits
C202.2	To be able to analyze RF circuits

Course Code: C203 Course Name:AP7301 Electromagnetic Interference and Compatibility

C203.1	Identify Standards
C203.2	CompareEMI test methods
C203.3	Discuss EMImitigation techniques

Course Code:C204 Course Name:CU7005 Cc

C204.1	Compare MAC and network layer design for cognitive radio
C204.2	Discuss cognitive radio for Internet of Things and M2M technologies

Course Code: C206 Course Name: DS7201 Advanced Digital Image Processing

C206.1	Explain the fundamentals digital image processing.
C206.2	Describe image various segmentation and feature extraction techniques for image analysis.
C206.3	Discuss the concepts of image registration and fusion.
C206.4	Explain 3D image visualization.

Course Code:C207 Course Name:NC7101 High Performance Networks

C207.1	Discuss advanced network concepts
C207.2	Outline traffic modeling
C207.3	Evaluate network security

Course Code: C209 Course Name:CU7211 Innovative system design laboratory

C209.1	Utilize ARM and FPGA
C209.2	Demonstrate design of ALU in FPGA using VHDL and Verilog
C209.3	Assess flash controller programming data flash with erase, verify and fusing
C209.4	Explain design, simulation and analysis of signal integrity

Course Code:C301 Course Name: CU7301 Advanced satellite based systems

C301.1	Navigation, Tracking and safety systems
C301.2	Inertial navigation and differential GPS systems
C301.3	Remote sensing systems and techniques
C301.4	Broadcast systems

Course Code:C302 Course Name: NC7202 Wireless ADHOC and Sensor networks

C302.1	Identify different issues in wireless adhoc and sensor networks
C302.2	To analyze protocols developed for adhoc and sensor networks
C302.3	To identify nd address the security threats in ad hoc and sensor networks

Course Code:C303 Course Name: NC7201 Communication network security

C303.1	Classify the symmetric encryption techniques
C303.2	illustrate various public key cryptographic techniques
C303.3	Discuss authentication applications

Course Code:C304 Course Name: CU7311 Project Work I

C304.1	Able to practice Project Management principles while developing a hardware.
C304.2	Able to take up any challenging practical problems
C304.3	Able to find solution by formulating proper methodology.

Course Code:C401 Course Name: CU7411 Project Work II

C401.1	Demonstrate a sound technical knowledge of their selected project topic
C401.2	Undertake problem identification, formulation and solution.
C401.3	Design engineering solutions to complex problems utilising a systems approach