M.G.M'S COLLEGE OF ENGINEERING, NANDED

Department of Electronics and Telecommunications Engineering

Course Outcome Statements

After successful completion of course, students will be able to

TY ECT Odd Semester (2020-21)	
C 301 EFT	
C301.1	Understand the fundamental laws of electromagnetism, such as Maxwell's equations, and their physical interpretations.
C301.2	Develop competency in using mathematical tools such as vector calculus, coordinate systems, and differential equations to solve electromagnetic problems.
C301.3	Solve the problems related to static electric and magnetic fields, including behavior of charges and currents in free space and in materials.
C301.4	Determine reflection, transmission of electromagnetic waves in different media, including wave polarization and energy flow.
C301.5	Identify the waveguides, transmission lines, and their applications in guiding and transmitting electromagnetic waves.
C302 CSE	
C302.1	Identify and demonstrate open loop and closed loop systems mathematically and derive their transfer function
C302.2	Determine time response and frequency response of the system for various input signals
C302.3	Evaluate concept of stability of control system by applying different methods.
C302.4	Analyse performance of different type of controllers
C302.5	Evaluate state variable analysis of control systems
C302.6	Evaluate and Design Different digital controllers and control systems.
C303 CA	
C303.1	Identify the functional units and machine instructions of a digital computer
C303.2	Understand the Processor organization and different number formats
C303.3	Illustrate the concepts of ALU and control logic design

C303.4	understand the memory organization and differentiate between the types of memory
C303.5	Identify system organization and standard I/O Interfaces
C303.6	Summarize the Concept of parallel processing and pipelining
C304 DSP	
C304.1	Understand discrete time signals and basics of Digital signal processing
C304.2	Compute and analyze the frequency response of Discrete time signals using DFT and FFT
C304.3	Compare Z-Transform , Laplace transform and Fourier transform
C304.4	Design different filter structures for FIR and IIR system
C304.5	Illustrate multi-rate signal processing and its applications
C305 MAA	
C305.1	Identify and formulate control, security and monitoring system using microcontroller.
C305.2	Design cost effective real time system to serve engineering solution for society.
C305.3	Analyze the performance of Embedded System using modern tools.
C305.4	Design Multidisciplinary applications using microcontroller..
C306 DSCA	
C306C.1	Analyze different programming methodologies and define asymptotic notations to analyze performance of algorithms.
C306C.2	Apply appropriate data structures like arrays, linked list, stacks and queues to solve real world problems efficiently.
C306C.3	Represent and manipulate data using nonlinear data structures like trees and graphs to design algorithms for various applications.
C306C.4	Illustrate and compare various techniques for searching and sorting.
C306C.5	Illustrate various hashing techniques.
C307 CSEL	
C307.1	Represent a system in the form of transfer function in MATLAB considering it's zeros, poles and gain.
C307.2	Analyze the plots of time and frequency responses of SISO and MIMO systems.
C307.3	Assess gain and phase margin to examine the effect of stability margins on closed loop response characteristics of a control system
C307.4	Evaluate the Time Domain response analysis of first and second order systems using Matlab.
C307.5	Design lead-lag compensator and different digital controllers for the given system using modern tools.

C308 DSPL	
C308.1	Identify Standard discrete time signals
C308.2	Illustrate various properties of signals in Discrete time domain in a team
C308.3	Compute and analyze the frequency response of Discrete time signals using DFT and FFT.
C308.4	Design FIR filter using different windowing techniques.
C309 MAAL	
C309.1	Identify and formulate control, security and monitoring system using microcontroller.
C309.4	Design cost effective real time system to serve engineering solution for society.
C309.2	Analyze the performance of Embedded System using modern tools.
C309.3	Design Multidisciplinary applications using microcontroller
C310 Mini Project Lab	
C310.1	Develop the ability to find out solutions to small technical issues in various fields
C310.2	Identify problem definition and provide solution using electronics fundamentals
C310.3	Design and test the electronic circuit along with team members
C310.4	Demonstrate the use and working of the circuit to peers, teachers, examiners and maintain documentation of the same
C311 Seminar	
C311.1	Identify recent technical topics from interested domains
C311.2	Analyze the applicability of modern software tools and technology
C311.3	Develop Presentation and Communication skills
C311.4	Develop Technical report preparation skills
C312 Field Training	
C312.1	Develop and introspect a planned approach towards his career & life in general.
C312.2	Explain the use of functional and chronological resume
C312.3	Ability to think and develop confidence in group discussions.
C312.4	Aware of the personal interview through mock interviews or various kinds of interviews.

TY ECT Even Semester	
C313 AWP	
C313.1	Understand electromagnetic waves propagating in different media.
C313.3	Compute the characteristics parameters of an antennas, their optimum values and their measurements.
C313.2	Analyze of Different types of antenna arrays &its characteristics
C313.4	Design and develop the antennas as per the requirement
C313.5	Apply the Knowledge of various modes of radio propagation to real life communication systems.
C314 CNCC	
C314.1	Understand and explore the basics of Computer Networks and Various Protocols
C314.2	Analyse a network and schedule the flow of information
C314.3	Understand the network security issues in ad hoc networks
C314.4	Find the shortest path by using Routing
C314.5	Apply the different protocols used at application layer i.e. HTTP, SNMP, SMTP, FTP, TELNET and VPN.
	C315 DIP
C315.1	Compare different methods for image acquisition, storage and representation in digital devices and computers
C315.2	Interpret the role of image transforms in representing, highlighting, and modifying image features
C315.3	Illustrate the mathematical principles in digital image enhancement and apply them in spatial domain and frequency domain
C315.4	Apply various methods for segmenting image and identifying image components
C316A CMOS	
C316.1	Analyze the static behavior, dynamic behavior, secondary effects of MOSFET.
C316.2	Compute the performance of Basic Digital Circuit i.e. inverter .
C316.3	Design combinational and sequential circuits using different design techniques.
C316.4	Examine digital design techniques in terms of quality metrics of digital circuits

C316.5	Construct digital circuits & compute the response by using modern tools.
C316.6	Create the data path for the processor using best digital circuit design technique.
C316F AP	
C316F.1	Build an application using Android development environment.
C316F.2	Experiment with the method of storing, sharing and retrieving the data in Android Applications.
C316F.3	Examine responsive user interface across wide range of devices.
C316F.4	Utilize Android Studio to create simple and complex applications and Access location based services
C317A DSD	
C317A.1	Design digital circuits using k-map simplification and understand the code converters.
C317A.2	Understand the working of multiplexer, adder, subtractor, encoder, decoder circuits
C317A.3	Design synchronous circuits like Pulse train generator, Pseudo Random Binary Sequence generator
C317A.4	Understand logic families and Programmable Logic Devices
C317.5	Understand and implement logic using PLD
C317E Python Programming	
C317E.1	Demonstrate proficiency in handling Numbers, Strings and functions to solve computational problems.
C317E.2	Apply common operations involved in file handling and Exception handling
C317E.3	Recognize various data structures in python such as string, List, Tuple, Set and Dictionary.
C317E.4	Develop solutions for real-time applications using Python concepts.
C317E.5	Execute different problem statements applying fundamentals of Python programming, conditional statements, control statements, loops, OOP concepts and standard library in Python.
C318 ESD	
C318.1	Develop effective communication ability (through resume writing, cover letter and delivering effective presentation)
C318.2	Build interpersonal skills and understand the importance of professional etiquettes
C318.3	Understand the elements of sentence writing and write e-mail, story and technical documents
C318.4	Develop the skill needed for job interview, group discussion, listening skills etc.

C318.5	Understand the problem solving model and build the attitude of problem solving
C319 CNCCL	
C319.1	Explain the components requirement of networks and link layer service
C319.2	Classify the Media Access Control Protocols and different Internetworking
C319.3	Demonstrate various types of routing techniques
C319.4	Outline the mechanisms involved in the transport layer
C320A CMOSDL	
C320A.1	Analyze the static behavior, dynamic behavior, secondary effects of MOSFET using simulation software.
C320A.2	Design the layout for inverter & Compute the performance of Basic Digital Circuit i.e. inverter using micro wind software.
C320A.3	Design& analyze of combinational, sequential circuit using different design techniques & observe the performance for the same using simulation software.
C320A.4	Compute the performance of digital circuits by designing the layout for the different digital circuits & compare it in terms of quality metrics of digital circuits.
C320A.5	Design the layout for the ALU & Compute its response using modern tools.
C320A.6	Design of the data path modules for the processor using digital circuit design techniques and observe the response using simulation software.
C320F APL	
C320F.1	Understand the purpose different development tools for Android
C320F.2	Design a graphical user interface
C320F.3	Integrate an applications with pre-existing third party libraries
C320F.4	Utilize Android Studio to create simple and complex applications and Access location based services
C321A DSDL	
C321A.1	Design Combinational Logic Ckt
C321A.2	Design encoder, decoder, MUX, DEMUX, Adder, Subtractor circuits
C321A.3	Design synchronous sequential circuits
C321A.4	Analyze logic families and PLDs
C321E PL	
C321E.1	Implement python programming constructs to build small to large scale applications
C321E.2	Implement the problems in terms of real -world objects using OOPs technology.

C321E.3	Evaluate and handle the errors during runtime involved in a program
C321E.4	Extract and import packages for developing different solutions for real time problems.
C322 MPL	
C322.1	Develop the ability to find out solutions to small technical issues in various fields
C322.2	Identify problem definition and provide solution using electronics fundamentals
C322.3	Design and test the electronic circuit along with team members
C322.4	Demonstrate the use and working of the circuit to peers, teachers, examiners and maintain documentation of the same