



**Methodist College of Engineering and Technology**  
**Department of Electronics and Communication Engineering**

**Course Outcomes**

**AY: 2018-19**

**III Semester**

S No	Course Code	Course Title	CO No.	Course Outcome	TAXONOMY
1	BS 301 MT	EM III - Engineering Mathematics- III	CO1	Find solutions of first order and second order partial differential equations.	Remember
			CO2	Apply Fourier series to find solutions of partial differential equations.	Apply
			CO3	Solve complex and real integrals using residue theorem.	Apply
			CO4	Analyze a given function in the form of Fourier series	Analyze
			CO5	Determine the analyticity of a complex functions and expand functions as Taylor and Laurent series.	Evaluate
			CO6	Classify types of partial differential equations and find their solution.	Evaluate
2	PC 301 EC	Electronic Devices	CO1	Explain the operation of semiconductor devices	Understand
			CO2	Apply the V-I characteristics of Bipolar Junction Transistor in CB,CE & CC configurations, FETs, MOSFETs and various Biasing techniques of BJT and FET in various Electronic Device circuit applications	Apply
			CO3	Make use of biasing techniques in the design process of amplifier circuits	Apply
			CO4	Analyze simple amplifier circuits ( BJT and FET) using small signal low frequency model	Analyze
			CO5	Design simple amplifier circuits using BJT and FET	Create
			CO6	Design half wave and full wave rectifiers without and with filters	Create
3	PC 302 EC	Switching Theory and Logic Design	CO1	Understand the basic concepts related to number system and their conversion.	Understand
			CO2	Analyze the boolean logic equations and simplify using K-map and tabular method .	Analyse
			CO3	Analyze the different combinational circuits and impliment them using IC's.	Analyse
			CO4	Understand the operation of flip flops and converting one flip flop to another.	Understand
			CO5	Analyze the cocepts of sequential circuits .	Analyse
			CO6	Design the counter using different IC's.	Create
4	PC 303 EC	Signal Analysis & Transform Techniques	CO1	Understand the basic concepts related to continuous time signals and systems, mathematical representation of periodic signals.	Understand
			CO2	Understand the basic concepts related to continuous time signals and systems, mathematical representation of aperiodic signals	Understand
			CO3	Analyze basic concepts related to discrete time signals and systems, mathematical representation discrete time signals.	Analyse

			CO4	Define convolution, correlation operations on continuous and discrete time signals	Remember
			CO5	Evaluate the concept of Z transform and its properties	Evaluate
			CO6	Evaluate the concept of L transform and its properties	Evaluate
5	PC 304 EC	Network Analysis and Synthesis	CO1	Study of symmetrical and asymmetrical networks and their electrical properties, T to PI conversion vice versa	Study
			CO2	Design concepts of different filters(low pass, high pass, band pass, band stop)with different types like K, m-derived, composite	Design
			CO3	Design different Types of Attenuator and Equalizers	Design
			CO4	Study and construct RLC circuits using Laplace Transformations	Study
			CO5	Design concepts of Network synthesis and checking Hurwitz polynomials, Positive real function	Design
			CO6	Realize LC, RC,RL Networks by synthesis	Realize
6	MC 306ME	Elements of Mechanical Engineering	CO1	Understand the thermodynamics concepts to design thermal systems.	Understand
			CO2	Evaluate and compare the performances of prime movers like I.C engines, heat exchangers	evaluate
			CO3	Analyze the different modes of heat transfer i.e. conduction,convection and radiation.	analyze
			CO4	Analyze and understand the working of machines like lathe,milling,grinding,drilling machines	Analyze
			CO5	Evaluate the velocity ratio of gear drives,belt drives to design the gears and belt drives.	Evaluate
			CO6	Analyze the belt transmission system after evaluating its parameters like length of belt,power transmission ratio of tensions.	Analyze
7	PC 351 EC	Electronic Devices and Logic design Lab	CO1	Understand and Analyze different types of diodes, their operation and characteristics.	Analyze
			CO2	Analyze the performance evaluation of half wave and full wave rectifiers without filters and with filters	Analyze
			CO3	Design and Analyze the various DC bias circuits of BJT and FET	Design
			CO4	To analyze frequency response of amplifier circuits and able to measure the ac characteristics of amplifier circuits	Analyze
			CO5	Design and analyze the basic logic circuits	Design
			CO6	Design and Analyze the ADDER/SUBTRACTOR circuits and conversion of one flip flop to another	Design
8	ES 352 EE	Electrical Engineering Lab	CO1	Justify the statements of basic electrical circuits	Evaluate
			CO2	Examine the performance of different electrical machines	Analyze
			CO3	Identify the electrical machines requirements	Apply
			CO4	Find the response of different electrical circuits	Remember
			CO5	Determine parameters of electrical machines and equipment	Evaluate
			CO6	Test for efficiency of electrical machines	Analyze

Coordinator

Head of the Department



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**Course Outcomes**

**AY: 2018-19**

**IV Semester**

S.no	Course Code	Course Title	CO No.	Course Outcome	TAXONOMY
1	BS 405 MT	Applied Mathematics	CO1	Find vector spaces, subspaces, basis and dimension	Remember
			CO2	Apply numerical methods to find solutions of algebraic and transcendental equations.	Apply
			CO3	Solve ordinary differential equation by using numerical methods.	Apply
			CO4	Analyze the given data by calculating the coefficients of correlation and regression.	Analyze
			CO5	Determine the rank correlation coefficient using the specified formula.	Evaluate
			CO6	Classify types of linear programming problems and find their solutions.	Evaluate
2	PC 401 EC	Analog Electronic Circuits	CO1	Explain Different Transistor Models and their applications and Different Coupling Techniques	Understand
			CO2	Explain the Frequency response for Various Transistors	Understand
			CO3	Identify different types of negative feedback and its characteristic analysis	Apply
			CO4	Make use of positive feedback in different types of oscillators.	Apply
			CO5	Analyse different power amplifiers interms of efficiency and figure of merit	Analyze
			CO6	Analyse different tuned amplifiers and their stability analysis	Analyze
3	PC 402 EC	Pulse, Digital and Integrated Circuits	CO1	Explain the response of RC, RL, RLC, Attenuator circuits for the sinusoidal, pulse, step, square, ramp inputs	Understand
			CO2	Explain the clipping and clamping circuits, and apply the concept of clipping, clamping circuits to various applications. Apply the concept of voltage comparator to various applications.	Apply
			CO3	Design and Analyze Bistable, Monostable and Astable Multivibrators using transistors. Analyze and Design Sweep circuits using UJT and SCR40	Analyze
			CO4	Categorize different ICs, IC package types. Explain DTL, TTL, ECL logic families and their characteristics	Understand
			CO5	Explain the MOS logic families and their characteristics. Analyze and Design the interfacing circuit between CMOS and TTL logic familes, Apply the concept of transmission gate to implement various circuits	Evaluate

			CO6	Design various pulse ,digital and integrated circuits	Create
4	PC 403 EC	Probability Theory and Stochastic Processes	CO1	Explain definitions of Probability,Axioms,Joint Probability, Conditional Probability, Total Probability, Bayes' Theorem, Independent Events, Random Variable, Conditions of a Random Variable.	Understand
			CO2	Apply the concepts, theorems to derive probability distribution & probability density functions. Expectations,Moments & characteristic functions of Random variable	Applying
			CO3	Make use of Properties of distribution & density functions to solve Mean ,Variance for - Binomial, Poisson, Uniform, Gaussian, Exponential, Rayleigh Distributions.	Applying
			CO4	Explain Multiple random variables i.e Joint density,Joint distribution,Central Limit Theorem, expected values of Multiple random variables.	Understand
			CO5	Explain concepts of Random process, and its properties.variance, co variance, correlation & auto correaltion.Power & cross power density spectrum and its properties.	Understand
			CO6	Examine different types of Noises and response to a random signal	Evaluating
			5	PC 404 EC	Electromagnetic Theory and Transmission Line
CO2	Analyze the Wave Equations for good conductors and good dielectrics, and evaluate the uniform plane wave Characteristics for several practical media of interest.	Apply, Analyze			
CO3	Establish the proof and estimate the polarization features, reflection and transmission coefficients for uniform plane wave propagation, distinguish between Brewster and Critical Angles, and acquire knowledge of their applications.	Applying, Analyzing			
CO4	Determine the Transmission Line parameters for different lines, characterize the distortions and estimate the characteristics for different lines.	Remember, Analyze			
CO5	Analyze the RF Line features and configure them as SC, OC Lines, $\lambda/2$ , $\lambda/4$ and $\lambda/8$ Lines and design the same for effective impedance transformation.	Analyze, Evaluate, Create			
CO6	Study the Smith Chart profile and stub matching features, and gain ability to practically use the same for solving practical problems.	Remember, Analyze, Create			
6	ES 406 CE	Environmental Studies	CO1	Synthesize popular media reports/articles discussing environmental issues, and verbally discuss and defend their positions on scientific issues	Create
			CO2	Able to list common and adverse human impacts on biotic communities, soil, water, and air quality and suggest	Remember

				sustainable strategies to mitigate these impacts	
			CO3	Apply mathematical concepts, including statistical methods, to field and laboratory data to study scientific phenomena.	Apply
			CO4	Design and execute a scientific project.	Create
			CO5	Understand the importance of Environmental legislation policies.	Understand
			CO6	Categorize the types of environmental pollution and the various treatment technologies for the diminution of environmental pollutants and contaminants.	Analyze
			CO6	Categorize the types of environmental pollution and the various treatment technologies for the diminution of environmental pollutants and contaminants.	Analyze
7	PC 451 EC	Analog Electronic Circuits Lab	CO1	Analyse BJT, FET amplifiers	Analyze
			CO2	Analyse Multivibrators	Analyze
			CO3	Understand Filter Circuits	Understand
			CO4	Identify Different Feedback Amplifiers.	Apply
			CO5	Design Oscillator circuits	Create
			CO6	Analyse Power Amplifiers.	Analyze
8	PC 452 EC	Pulse, Digital and Integrated Circuits Lab	CO1	Understand High pass and Low pass RC circuits for different time constants and verify their responses for a square wave input of given frequency.	Understand
			CO2	Study the various clipper circuits and to plot the output waveforms for a sinusoidal input of given peak amplitude	Apply
			CO3	Analyze different types of clamper circuits.	Analyze
			CO4	Design a transistor switch circuit and observe the waveforms	Analyze
			CO5	Analyze different Multivibrators and explain the operation of the same	Evaluate
			CO6	Design different Sweep circuits and able to generate sweep waveform	Apply

Coordinator

Head of the Department



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**AY: 2018-19**

**V Semester**

S.no	Course Code	Course Title	CO No.	Course Outcome	TAXONOMY
1	PC501EC	Linear ICs and Applications	CO1	Understand the internal operation of Op-Amp and its specifications	Understand
			CO2	Analyze and design linear applications like adder, subtractor, instrumentation amplifier and etc. using Op-Amp.	Analyze
			CO3	Classify various active filter configurations based on frequency response and construct using 741 OpAmp	Classify
			CO4	Operate 555 timers in different modes like bistable, monostable and astable operations and study their applications.	Operate
			CO5	Different techniques of A to D and D to A conversion techniques	Differentiate
			CO6	Understand the internal operation of Voltage regulators by using IC and its specifications.	Understand
2	PC502EC	Analog Communication	CO1	Explain and analyze the various continuous modulation systems	Understand
			CO2	Demonstrate and contrast the different Angle modulation schemes	Analyze
			CO3	Illustrate and compare the pulse modulation systems	Apply
			CO4	Interpret with differentiate types of transmitters and receivers used for particular application.	Understand
			CO5	Identify the noises present in continuous wave modulation systems and analyze Signal to Noise ratio in each system.	Analyze
			CO6	Students able to Discriminate the design skills to illustrate the different modulation systems and method to implement different communication systems.	Apply
3	PC503EC	Digital Signal Processing	CO1	Students will be able to identify the importance of DSP in real time processing	Apply
			CO2	Students will be able to compute DFT & apply its properties in problem solutions , also optimize the calculation using FFT algorithm	Apply

			CO3	Students will be able to design, evaluate & construct FIR filters to satisfy desired frequency response by hand	Create
			CO4	Students will be able to design, evaluate & construct IIR filters on the basis of an analogue design by hand	Create
			CO5	Students will be able to compute & comprehend sampling rate conversions & their applications	Evaluate
			CO6	Students will be able to understand the importance of DSP processor applications and also comprehend the architecture, addressing modes & instruction set of TMS processor	Apply
4	PC504EC	Automatic Control Systems	CO1	Students will be able understand control system fundamentals & build mathematical model using transfer function	Understand
			CO2	Students will be able to construct Root locus Technique and thus assess system stability in time domain	Construct
			CO3	Students will be able to construct Bode plots and thus assess system stability in frequency domain	Construct
			CO4	Students will be able to learn the importance of compensation networks in control systems	Importance
			CO5	Students will be able to understand the digital control system and its importance	Importance
			CO6	Students will be able to understand state space representation and hence determine stability, controllability and observability of a system in state space domain	Determine
5	PC505EC	Computer Organization & Architecture	CO1	Explain Mathematical operations on Fixed point & Floating Point Digital Data and apply on digital arithmetic algorithms	Apply
			CO2	Illustrate the operation of a Digital Computer through Instruction Formats, Instruction Cycle , micro programmed control.	Understand
			CO3	Understand Central processing unit of a computer Different instructions for Data Transfer and manipulation.	Understand
			CO4	Explain different types of Processing Techniques, CISC –RISC Processors and latest trends in Microprocessors	Understand
			CO5	Understand I/O Interfacing of a computer through different modes of transfer , Asynchronous data transfer, DMA and I/O Processor.	Understand
			CO6	Understand memory hierarchy, different types of memories used in computers and memory management	Understand

6	PC506EC	Digital System Design with Verilog HDL	CO1	Describe Verilog HDL and Write a verilog HDL code for the digital circuits in gate level and dataflow modeling.	Understand
			CO2	Write a verilog HDL code for the digital circuits in switch level and behavioral modeling	Apply
			CO3	Analyze and synthesize synchronous sequential circuits and design the sequence detector using Moore and Mealy FSM	Analyze
			CO4	Analyze the Asynchronous sequential circuits & describe the ASM chart for the digital circuits	Analyze
			CO5	Explain SPLDS, CPLDs and Design various combinational circuits by using PLDs	Apply
			CO6	Explain FPGA and ASIC and describe ASIC / FPGA design flow	Evaluate
7	MC901EG	Gender Sensitization	CO1	Develop a better understanding of important issues related to gender in contemporary India.	Understand
			CO2	To change the basic dimensions of the biological. Sociological, psychological and legal aspects of gender through discussions, facts, everyday life, literature and film	Apply
			CO3	To analyze how gender discrimination works in our society and how to counter it.	Analyze
			CO4	To identify and plan better ways of working and living together as equals.	Apply
			CO5	To develop a sense of appreciation of women in all walks of life	Evaluate
			CO6	To enable in developing good interpersonal relationships at work places and to develop a sustain interest in gender equality	Create
8	PC551EC	IC Applications lab	CO1	Study and performance Of various parameters of op-amp & Construct linear and non-linear applications circuits .	Apply
			CO2	Design and Analyze different filters & their frequency comparision. (theoretical & practical)	<b>Create, Analyze</b>
			CO3	Design different multivibrators and their comparision. (theoretical & practical) by using IC 555	Apply
			CO4	Design sequential circuit synchronous & asynchronous counters	Apply
			CO5	Verify Flip-Flop conversions and latches using gates and ICs.	Understand
			CO6	Study Measurement of propagation delay, fan-out, Noise margin and transfer Characteristics of TTL and CMOS IC gates and open collector / drain gates.	Apply
9	PC552EC	Systems and Signal	CO1	Illustrate basics of signal processing using Matlab Software	Understand, Analyze



		Processing Lab	CO2	Illustrate various Signal Processing Algorithms like DFT,IDFT,FFT,IFFT	Analyze
			CO3	Analyze FIR Filters with specific magnitude and phase requirements	Analyze
			CO4	Analyze IIR Filters with specific magnitude and phase requirements	Analyze
			CO5	Illustrate basics of Multi rate signal processing	Understand
			CO6	Analyze digital filters using DSP Processors	Understand
			10	PC553EC I	Industrial Visit
CO2	Provides an opportunity to plan, organize and engage in active learning experiences both inside and outside the classroom	Apply			
CO3	Provides an insight into the real working environment of the Industry.Helps them to see their future place in the working world	Analyze			
CO4	This also serves as a relation building process between institutes and industry	Evaluate			
CO5	Helps to enhance their interpersonal skills and communications	Analyze			
CO6	Using the case study approach within the visit to bring out critical thinking among students	Create			

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**AY: 2018-19**

**VI Semester**

<b>S.no</b>	<b>Course Code</b>	<b>Course Title</b>	<b>CO No.</b>	<b>Course Outcome</b>	<b>TAXONOMY</b>
1	PC601EC	Digital Communication	CO1	Understand the concepts different types of digital modulation techniques PCM, DPCM, DM and ADM and compare their performance by SNR.	understanding
			CO2	Able to learn the classification of channels and Source coding methods	Remembering
			CO3	Analyze the different types of Error control codes along with their encoding/decoding algorithms	Analyzing
			CO4	Analyze performance of different Digital Carrier Modulation schemes of Coherent and Non-coherent type based on Probability of error	Analyze
			CO5	Understand the base band modulation and matched filter concepts	understand
			CO6	Applying the generation of PN sequence using Spread Spectrum and characterize the Acquisition Schemes for Receivers to track the signals	Apply
2	PC602EC	Antennas and wave propagation	CO1	Illustrate the basic principles of antennas and learn the antenna terminology.	Understand
			CO2	Design different types of wire antennas and make proficient in analytical skills for understanding practical antennas.	Apply
			CO3	Design different types of antennas for various frequency ranges and get updated with latest developments in the practical antennas.	Create
			CO4	Apply the principles of antennas, to design antenna arrays and measure various parameters of antennas.	Analyse
			CO5	Identify and understand the suitable modes of Radio Wave propagation used in current practice.	Evaluate
			CO6	Analyze the structure of atmosphere for the wave propagation	Analyse
3	PC603EC	Microprocessor and Microcontroller	CO1	Understand the generalized architecture of microprocessors and microcontrollers. Learn about 8086 Microprocessor and 8051	Understand

				Microcontroller- different types of addressing modes, instruction set and interrupts.	
			CO2	Build Interfacing diagram of memory, peripherals using 8086 Microprocessor and 8051 Microcontroller.	Apply
			CO3	Apply 8086 Microprocessor and 8051 Microcontroller instruction set for writing simple assembly language programs.	Apply
			CO4	Explain the algorithm and program for interfacing different peripherals to 8086 microprocessor and 8051 Microcontroller.	Analyse
			CO5	Write an Assembly/C language program for interfacing different peripherals by using different software tools to 8086 microprocessor and 8051 Microcontroller.	Evaluate
			CO6	Design Interfacing of real time applications like ADC, DAC, LCD and stepper motor with 8086 microprocessor and 8051 microcontroller.	Create
4	HS604EC	Managerial Economics & Accountancy	CO1	Understand the responsibility of a manager and fundamental concepts of Managerial Economics.	Understanding
			CO2	Understand demand analysis and determinants of demand.	Understanding
			CO3	Analyse production & markets and compute the future sales level.	Analysing
			CO4	Understand the features, merits, uses & limitations of Pay back , ARR,NPV, PI & IRR methods of capital budgeting.	Understanding
			CO5	Understand the Principles of accounting and prepare Journal, Ledger, Trial balance, manufacturing	Understanding
			CO6	Analyse the analytical problems that arise in day to day decisions.	Analysing
5	PE – I (PE 672 EC)	Data Communication and computer networking	CO1	Students able to get conceptual foundation for the study of data communications using the open Systems interconnect (OSI) model for layered architecture.	Understanding
			CO2	Students able to select network protocols and internetworking based on application requirement	Applying
			CO3	Students able to Understand the Network security and Internet applications	Understanding
			CO4	Students able to Understand the concepts of switched communication networks	Understanding

			CO5	Students able to Understand the performance of different layer protocols for error and flow control	Understanding
			CO6	Students able to Understand various routing protocols and network security.	Understanding
6	OE – I (OE601CE)	Disaster Management	CO.1	Analyze the different public health aspects of disaster events at local and global levels, even when limited information is available.	Analyze
			CO.2	Evaluate the environmental, social, cultural, economical, legal and organizational aspects influencing vulnerabilities and capacities to face disasters and to know different types of environmental hazards	Evaluate
			CO.3	Examine different types of natural and man-made disasters, theoretically and practically in the processes of disaster management and relate their interconnections.	Analyze
			CO.4	Interpret endogenous and exogenous hazards and their harmful effects to the environment through case studies in India.	Understand
			CO.5	Organize strategies for mitigation in future scenarios with available risk reduction techniques.	Applying
			CO.6	Demonstrate different aspects of the emergencies and disaster events into the potential and limitations of science and its role in society and people's responsibility for how it is used.	Understand
7	PC 411 EC	Optical Fiber Communication(Elective - I)	CO1	Students will able to learn concepts of propagation through optical fiber modes and configurations.	Understanding
			CO2	Students will able to learn Losses in fibers and dispersion through optical fiber	Applying
			CO3	Students will able to understand the operating principles of light sources and detectors used in optical transmitters and receivers	Creating
			CO4	Students will able to analyze and design an optical link in view of loss and dispersion	Analysing
			CO5	Students will able to learn the concepts of different types of networks.	Evaluating
			CO6	Students will able to learn the different types of detectors with their responses	Analyse
8	PC652EC	Microprocessor and Microcontroller Lab	CO1	Understand the architecture and its components of 8086 Microprocessor & 8051 Microcontrollers and develop algorithms for simple programs.	Understand

			CO2	Apply the instruction set of 8086 Microprocessor & 8051 Microcontrollers and develop simple programs.	Apply
			CO3	Explain the usage of Branching, string instructions and Assembler Directives of 8086 Microprocessor for String Manipulations.	Apply
			CO4	Design and Develop interfacing applications by input/output, serial communication devices using 8086 Microprocessor	Evaluate
			CO5	Design algorithms and different programs for SFRs using C cross compilers for 8051 Microcontroller	Analyse
			CO6	Design and Develop interfacing application by input/output ports, serial communication devices using C cross compilers for 8051 Microcontroller	Create
9	MC (MC953 SP)	Mandatory Course (sports)	CO1	Students can develop an understanding in various sports and games	Create
			CO2	Students can create an environment ,this encourages the students to actively participate in various sports and games	Create
			CO3	Students can develop the spirit of sportsmanship & leadership qualities	Create
			CO4	Students can analyze the benefits of physical exercises to maintain a good physical and mental health .	Analyse
			CO5	Students can make use of sports for development of concentration	Apply
			CO6	Students can identify their career in various sports and games	Apply
10	PC653EC	Summer Internship*	CO1	Students can Able to select a Practical problem and find solution by using current technologies	Understand
			CO2	Student can go through training for implementing the project	Apply
			CO3	Students can Able to design/develop a small and simple product in hardware or software.	Design
			CO4	Students can Able to complete the task or realize a pre-specified target, with limited scope	Design
			CO5	Students can Able to learn to find alternate viable solutions for a given problem and evaluate these alternatives with reference to pre-specified criteria	Apply
			CO6	Students can Able to implement the selected solution and document the same	Create
11	PC651EC	communication lab	CO1	Understand and simulate modulation and demodulation of AM and FM	Apply

			CO2	Construct pre-emphasis and de-emphasis at the transmitter and receiver respectively	Create
			CO3	Understand and simulate the PAM,PWM&PPM circuits	Apply
			CO4	Understand baseband transmission (i.e., PCM, DPCM, DM, and ADM) generation and detection	Analyse
			CO5	Understand and simulate digital modulation (i.e., ASK, FSK, BPSK, ) generation and detection	Analyse
			CO6	Generation and Detection of PCM and Digital modulation Schemes (ASK, FSK, BPSK) by using MATLAB	Apply

Coordinator

Head of the Department



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**AY: 2018-19**

**4 th Year I Semester**

S.no	Course Code	Course Title	CO No.	Course Outcome	TAXONOMY
1	EC 401	Microwave Engineering	CO1	Describe the propagation characteristics of Guided waves in different modes	Understand, Analyze
			CO2	Evaluate different characteristics for Rectangular & Circular Waveguides & Cavity Resonators.	Apply, Analyze
			CO3	Analyze microwave circuits using scattering parameters	Apply, Analyze
			CO4	Design and analysis of microwave guides	Analyze, Create
			CO5	Understand the principle, operation and characteristics of microwave tubes and oscillators	Remember, Analyze
			CO6	Analyze the principle, operation and characteristics of microwave solid state devices including strip lines.	Analyze, Evaluate
2	EC 402	VLSI Design	CO1	Students will able to learn MOS Technology	Understand
			CO2	Students will able to Make use of Different CMOS Technologies	Apply
			CO3	Students will able to Design Layouts for Low Power Gates	Create
			CO4	Students will able to Design Combinational and Sequential Circuits	Create
			CO5	Students will able to know about Interconnect Concept	Evaluate
			CO6	Students will able to Analyse Single Stage CMOS amplifiers using current mirrors	Analyze
3	EC 403	Electronic Instrumentation	CO1	Describe the fundamental concepts and principles of instrumentation	Understand
			CO2	Identify and explain different types of transducers	Understand
			CO3	Draw and interpret types of transducers	Analyze
			CO4	Design and analyse digital voltmeters and prioritize the instruments	Design
			CO5	Identify and classify types of biomedical instruments	Understand
			CO6	Understanding of electronic instrumentation and measurement in the real time world	Understand
4	EC 411	Elective – I (Optical	CO1	Students will able to learn concepts of propagation through optical fiber modes and configurations.	Understand

		Communication)	CO2	Students will able to learn Losses in fibers and dispersion through optical fiber	Apply
			CO3	Students will able to understand the operating principles of light sources and detectors used in optical transmitters and receivers	Create
			CO4	Students will able to analyze and design an optical link in view of loss and dispersion	Analyze
			CO5	Students will able to learn the concepts of different types of networks.	Evaluate
			CO6	Students will able to learn the different types of detectors with their responses	Analyze
5	EC 421	Elective – II(Embedded Systems)	CO1	Understand the basic concepts of embedded systems, the selection procedure of Processors, characteristics, and design process in the embedded domain.	Understand
			CO2	Differentiate architectural features of advanced controllers, instruction sets for programming embedded system design. Apply architectural features of ARM processor for embedded products.	Apply
			CO3	Make use of serial, parallel bus protocols for developing of embedded system products. Also Apply network enabled protocols.	Apply
			CO4	Analyze testing and hardware software co- design issues pertaining to design of an Embedded System. Examine all software development tools for embedded system.	Analyse
			CO5	Assess the goal of embedded systems in real time design applications. Know about the RTOS based embedded system design concepts. Compare Testing methods and Debugging techniques.	Evaluate
			CO6	Design and develop embedded product in real time design applications by applying steps in design process for hardware and software of embedded product.	Create
6	ME 472	Industrial Administration and Financial Management	CO1	Understand types of various business organizations, organization structures, and functions of management and the importance of plant layouts.	Understand
			CO2	Understand and Apply the concept of Work Study (method study and time study) techniques for calculation of standard time in a plant, and the concept of performance rating factors & types of ratings.	Apply
			CO3	Understand the concepts of Quality control, process control, material control, Production Planning control and by use of control charts Evaluate whether the quality of a product or process in a plant.	Evaluate
			CO4	Understand and Apply the optimization techniques like Linear Programming, Assignment and Project management & Material Management techniques for	Apply



				e optimum utilization of the resources.	
			CO5	Know the different terminology used in Financial Management, understand and apply break even analysis and different techniques of capital budgeting involved in running an industrial organization.	Apply
			CO6	Know the different terminology used in Financial Management, understand and apply break even analysis and different techniques of capital budgeting involved in running an industrial organization.	Apply
7	EC 431	Microwave Lab	CO1	Analyze frequency, Wave length, SWR and Impedance for Reflex klystron Oscillator by using its equation	Analyze
			CO2	Evaluate of mode characteristics of Reflex klystron and V-I Characteristics of Gunn diode.	Evaluate
			CO3	Analyze of the characteristics of Circulator, Isolator, Directional Coupler, Tees like (Magic tee, E & H plane tees) using the Scattering parameters.	Analyze
			CO4	To analyze the radiation pattern of antenna	Analyze
			CO5	Generate the Radiation pattern of different antennas like Yagi-Uda and Horn Antenna and measure the gain of the antennas.	Analyze
			CO6	Familiarize with the EM simulation software	Design
8	EC 432	Embedded C and VLSI Design Lab	CO1	Understand different architecture of ARM processor, its components and Concept of RTOS	Understand
			CO2	Develop algorithms for simple programs based on RTOS using embedded C for ARM Processors	Analyze
			CO3	Design and Develop interfacing Real Time applications using input/output pins, serial communication devices for ARM processors	Create
			CO4	Understand Layout design Rules	Understand
			CO5	Make use of Layouts	Apply
			CO6	Design of Simple Gates using Layouts	Create
9	EC 433	Project Seminar	CO1	Student able to choose intrested topic and subject area in the wide spectrum of course	Understand
			CO2	Students are able to identify the applicability of modern software tools and technology	Create
			CO3	Students are able to deliver presentation based on the preparation	Analyse
			CO4	Students are able to develop communication skills and stage performance	Understand
			CO5	Students are able to present the results from the work comprehensively through presentation.	Understand
			CO6	Students are able to correct himself to improve	Create

				presentation skills.	
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Coordinator

Head of the Department



**Methodist College of Engineering and Technology**  
**Department of Electronics and Communication Engineering**

**Course Outcomes**

**AY: 2018-19**

**4 th Year II Semester**

S.no	Course Code	Course Title	CO No.	Course Outcome	Taxonomy
1	EC 451	Data Communication Computer Networks	CO1	Students able to get conceptual foundation for the study of data communications using the open Systems interconnect (OSI) model for layered architecture.	Understand
			CO2	Students able to select network protocols and internetworking based on application requirement	Apply
			CO3	Students able to Understand the Network security and Internet applications	Understand
			CO4	Students able to Understand the concepts of switched communication networks	Understand
			CO5	Students able to Understand the performance of different layer protocols for error and flow control	Understand
			CO6	Students able to Understand various routing protocols and network security.	Understand
2	EC 464	Elective – III (Radar Systems)	CO1	Demonstrate and understand the factors detecting the radar using radar range equation	Understand
			CO2	Illustrate various types of radars and their variation displays in radars	Understand
			CO3	Explain different types of MTI radars and Non coherent MTI radar	Understand
			CO4	Design radar systems to undertake measurements and verify the performance of radars	Design
			CO5	Design of radar antennas for various radar systems	Design
			CO6	Illustrate and differentiating on various radar tracking methods of radar systems	Understand
3	CE 601	Elective – IV (Disaster Mitigation and Management)	CO1	Attain knowledge on various types, stages, phases in disaster with international & national policies & programmes with reference to the disaster reduction	Understand
			CO2	Understand various types of natural disaster, their occurrence, Effects, Mitigation and Management Systems in India	Understand
			CO3	Understand different types of manmade disasters, their occurrence, Effects, Mitigation and Management Systems in India	Understand
			CO4	Explain the utility of geographic information systems (GIS), Remote sensing technology in all phases of disaster mitigation and management	Understand

			CO5	Understand on the concepts of risk, vulnerability, warning and forecasting methods in disaster management	Understand
			CO6	Understand the role of education and training in disaster prevention.	Understand
4	EC 481	General Seminar	CO1	Students are able prepare comprehensive report based on literature survey/Topics related to different subjects in the semester	Understand
			CO2	Students are able to identify the applicability of modern software tools and technology	Create
			CO3	Students are able to deliver presentation based on the preparation	Analyse
			CO4	Students are able to develop communication skills and stage performance	Understand
			CO5	Students are able to answer queries posed by the listeners.	Understand
			CO6	Students are able to correct himself to improve presentation skills.	Create
5	EC 482	Project	CO1	Students are able to prepare comprehensive report based on literature survey	Create
			CO2	Students are able to select a suitable problem relevant to power systems with an attention to real life problems faced by the society	Remember
			CO3	Students are able to find solution either through simulation or through practical work.	Analyse
			CO4	Students are able to get awareness about industry standards and develop expert connections to validate the project outcome	Apply
			CO5	Students are able to present the results from the work comprehensively through presentation.	Evaluate
			CO6	Students are able to present his/her work in a conference or publish the work in a peer reviewed journal	Evaluate