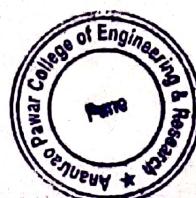


Second Year
Electronics & Telecommunication
Engineering(2019Course)Course Outcome &
Course Outcomes

| Sr.No. | Name of the subject | Engineering Mathematics -III |
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| 1 | Course Objectives 1 | To make the students familiarize with concepts and techniques in Ordinary differential equations, Fourier Transform, Z-Transform, Numerical methods, Vector calculus and functions of a Complex variable. |
| | Course Objectives 2 | The aim is to equip them with the techniques to understand advanced level mathematics and its applications that would enhance analytical thinking power, useful in their disciplines |
| | Course Outcomes 1 | Solve higher order linear differential equation using appropriate techniques For modelling , analyzing of electrical circuits and control systems. |
| | Course Outcomes 2 | Apply concept of Fourier transform & Z-transform and its applications to continuous & discrete systems, signal & image processing and Communication systems. |
| | Course Outcomes 3 | Obtain Interpolating polynomials, numerically differentiate and integrate functions, numerical solutions of differential equations using single step and multi-step iterative methods used in modern scientific computing. |
| | Course Outcomes 4 | Perform vector differentiation & integration, analyze the vector fields and apply to electro-magnetic fields & wave theory. |
| | Course Outcomes 5 | Analyze Complex functions, conformal mappings, Contour integration applicable to electrostatics, digital filters, signal and image processing |
| 2 | Name of the subject | Electronic Circuits |
| | Course Objectives 1 | Semiconductor device MOSFET, its characteristics, parameters & applications. |
| | Course Objectives 2 | Concepts of feedbacks in amplifiers & oscillators |
| | Course Objectives 3 | Operational amplifier, concept, parameters & applications. |
| | Course Objectives 4 | ADC, DAC and interface between analog & digital domains. |
| | Course Objectives 5 | Voltage to current and current to voltage converters. |
| | Course Objectives 6 | Concepts, characteristics & applications of PLL. |
| | Course Outcomes 1 | Assimilate the physics, characteristics and parameters of MOSFET towards its |



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| | | Application as amplifier. |
| CourseOutcomes2 | | Design MOSFET amplifiers, with and without feedback, & MOSFET oscillators, For given specifications. |
| CourseOutcomes3 | | Analyze and assess the performance of linear and switching regulators, with Their variants, towards applications in regulated power supplies. |
| CourseOutcomes4 | | Explain internal schematic of Op-Amp and define its performance parameters. |
| CourseOutcomes5 | | Design, Build and test Op-amp based analog signal processing and Conditioning circuits towards various real time applications. |
| CourseOutcomes6 | | Understand and compare the principles of various data conversion techniques and PLL with their applications. |

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| 3 | Name of the subject | Digital Circuits |
| | Course Objectives 1 | The fundamental principles of two-valued logic and various devices used to Implement logical operations on variables. |
| | Course Objectives 2 | Boolean algebra, Karnaugh maps and its application to the design and characterization of digital circuits |
| | Course Objectives 3 | To analyze logic processes and implement logical operations using Combination all logic circuits. |
| | Course Objectives 4 | The principles of logic design and use of simple memory devices, flip-flops, and sequential circuits |
| | Course Objectives 5 | Concepts of sequential circuits and to analyze sequential systems in terms of State machines. |
| | Course Objectives 6 | System design approach using programmable logic devices. |
| | Course Outcomes 1 | Identify and prevent various hazards and timing problems in a digital design. |
| | Course Outcomes 2 | Use the basic logic gates and various reduction techniques of digital logic circuit. |
| | Course Outcomes 3 | Analyze, design and implement combinational logic circuits. |
| | Course Outcomes 4 | Analyze, design and implement sequential circuits. |
| | Course Outcomes 5 | Differentiate between Mealy and Moore machines. |
| | Course Outcomes 6 | Analyzedigital system design using PLD. |

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| 4 | Name of the Subject | Electrical Circuits |
| | Course Objectives 1 | To analyze simple DC and AC circuits with circuit simplification techniques. |
| | Course Objectives 2 | To formulate and analyze driven and source free RL and RC circuits. |
| | Course Objectives 3 | To formulate & determine network parameters for given network. |
| | Course Objectives 4 | To understand the constructional details, characteristics, features and Application areas of various types of electric motors. |



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| | CourseOutcomes1 | Analyze the simple DC and AC circuit with circuits implification techniques. |
| | CourseOutcomes2 | Formulate and analyze driven and source free RL and RC circuits. |
| | Course Outcomes3 | Formulate & determine network parameters for given network and analyze the given net work using Laplace Transform to find the net work transfer function. |
| | CourseOutcomes4 | Explain construction, working and applications of DC Machines / Single Phase & Three Phase AC Motors. |
| | CourseOutcomes5 | Explain construction, working and applications of special purpose motors & Understand motors used in electrical vehicles. |
| | CourseOutcomes6 | Analyze and select a suitable motor for different applications. |
| 5 | Nameof thesubject | DataStructures |
| | CourseObjectives1 | To learn different sorting and searching algorithms and their analysis. |
| | CourseObjectives2 | To learn linear data structures: Stack and Queue, Linked List and their applications. |
| | CourseObjectives3 | To learn non linear data structures: Tree, Graph and their applications. |
| | CourseObjectives4 | To study the systematic ways of solving problem, various methods of organizing large amount of data. |
| | CourseObjectives5 | To solve problems using data structures such as binary tree, binary search tree, and graph and writing programs. |
| | CourseOutcomes1 | Solve mathematical problems using C programming language. |
| | CourseOutcomes2 | Implement sorting and searching algorithms and calculate their complexity. |
| | CourseOutcomes3 | Develop applications of stack and queue using array. |
| | CourseOutcomes4 | Demonstrate applicability of Linked List. |
| | CourseOutcomes5 | Demonstrate applicability of non linear data structures - Binary Tree with respect to its time complexity. |
| | CourseOutcomes6 | Apply the knowledge of graph for solving the problems of spanning tree and Shortest path algorithm. |
| 6 | Nameof thesubject | Signals & Systems |
| | CourseObjectives1 | To understand the mathematical representation of continuous and discrete Time signals and systems. |
| | CourseObjectives2 | To classify signals and systems into different categories |
| | CourseObjectives3 | To analyze Linear Time Invariant (LTI) systems in time and transform domains. |
| | CourseObjectives4 | To build basics for understanding of courses such as signal processing, Control system and communication. |



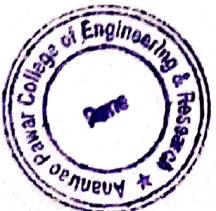
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| CourseObjectives5 | To develop basis of probability and random variables. |
| CourseOutcomes1 | Identify classify basic signals and perform operations on signals. |
| CourseOutcomes2 | Identify, Classify the systems based on their properties in terms of input Output relation and in terms of impulse response and will be able to determine the convolution between two signals. |
| CourseOutcomes3 | Analyze and resolve the signals in frequency domain using Fourier series and Fourier Transform. |
| CourseOutcomes4 | Resolve the signals in complex frequency domain using Laplace Transform, and will be able to apply and analyze the LT systems using Laplace Transforms. |
| CourseOutcomes5 | Define and describe the probability, random variables and random signals. Compute the probability of a given event, model, compute the CDF and PDF. |
| CourseOutcomes6 | Compute the mean, mean square, variance and standard deviation for given Random variables using PDF. |

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| 7 | Name of the subject | Control Systems |
| | CourseObjectives1 | To introduce elements of control systems and their modeling using various Techniques |
| | CourseObjectives2 | To get acquainted with the methods for analyzing the time response and Stability of System |
| | CourseObjectives3 | To introduce and analyze the frequency response and Stability of System |
| | CourseObjectives4 | To introduce concept of root locus, Bode plots, Nyquist plots. |
| | CourseObjectives5 | To introduce State Variable Analysis method. |
| | CourseObjectives6 | To get acquainted with Concept of PID controllers and IoT based Industrial Automation. |
| | CourseOutcomes1 | Determine and use models of physical systems in forms suitable for use in the analysis and design of control systems. |
| | CourseOutcomes2 | Determine the (absolute) stability of a closed-loop control system. |
| | CourseOutcomes3 | Perform time domain analysis of control systems required for stability analysis. |
| | CourseOutcomes4 | Perform frequency domain analysis of control systems required for stability analysis. |
| | CourseOutcomes5 | Apply root-locus, Frequency Plot techniques to analyze control systems. |
| | CourseOutcomes6 | Express and solve system equations in state variable form. |
| | CourseOutcome7 | Differentiate between various digital controllers and understand the role of The controllers in Industrial automation. |

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| 8 | Name of the subject | Principles of Communication Systems |
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| | CourseObjectives1 | To equip/familiarize students with basic mathematical tools for time and Frequency domain analysis of communication signal and systems. |
| | CourseObjectives2 | To acquaint the students with the fundamental principles of modulation Process and different amplitude and angle modulation systems. |
| | CourseObjectives3 | To introduce the students with the concept of Sampling theorem and pulse Modulation techniques PAM, PWM, PPM. |
| | CourseObjectives4 | To impart pre-requisites of digital communications systems and explore digital representation techniques like PCM, DPCM, DM and ADM. |
| | CourseObjectives5 | To highlight the issues in baseband digital transmission such as data Representation, synchronization, multiplexing and ISI. |
| | CourseOutcomes1 | To compute & compare the bandwidth and transmission power requirements by analyzing time and frequency domain spectra of signal Required form modulation schemes under study. |
| | CourseOutcomes2 | Describe and analyze the techniques of generation, transmission and Reception of Amplitude Modulation Systems. |
| | CourseOutcomes3 | Explain generation and detection of FM systems and compare with AM systems. |
| | CourseOutcomes4 | Exhibit the importance of Sampling Theorem and correlate with Pulse Modulation technique (PAM, PWM, and PPM). |
| | CourseOutcomes5 | Characterize the quantization process and elaborate digital representation techniques (PCM, DPCM, DM and ADM). |
| | CourseOutcomes6 | Illustrate waveform coding, multiplexing and synchronization techniques and Articulate the importance in baseband and digital transmission. |
| 9 | Name of the subject | Object Oriented Programming |
| | CourseObjectives1 | Make the students familiar with basic concepts and techniques of object oriented programming in C++ To acquaint the students with the fundamental principles of modulation process and different amplitude and angle Modulation systems. |
| | CourseObjectives2 | Develop an ability to write programs in C++ for problem solving. |
| | CourseOutcomes1 | Describe the principles of object oriented programming. |
| | Course Outcomes2 | Apply the concepts of data encapsulation, inheritance in C++. |
| | CourseOutcomes3 | Understand Operator overloading and friend functions in C++. |
| | CourseOutcomes4 | Apply the concepts of classes, methods in inheritance and polymorphism to Write programs C++. |
| | CourseOutcomes5 | Apply Templates, Namespaces and Exception Handling concepts to write Programs in C++. |
| | CourseOutcomes6 | Describe and use of file handling in C++. |



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| 10 | Name of the subject | Employability Skills Development |
| | Course Objectives 1 | Develop good communication skills – both oral as well as written. |
| | Course Objectives 2 | Encourage creative and critical thinking among students. |
| | Course Objectives 3 | Nurture collaborative behavior to work efficiently in groups. |
| | Course Outcomes 1 | Define personal and career goals using introspective skills and SWOT assessment. Outline and evaluate short-term and long-term goals. |
| | Course Outcomes 2 | Develop effective communication skills (listening, reading, writing, and speaking), self-management attributes, problem-solving abilities and team working & building capabilities in order to fetch employment opportunities and further succeed in the workplace. |
| | Course Outcomes 3 | Be a part of a multi-cultural professional environment and work effectively by enhancing interpersonal relationships, conflict management and Leadership skills. |
| | Course Outcomes 4 | Comprehend the importance of professional ethics, etiquettes & morals and Demonstrate sensitivity towards it throughout certified career. |
| | Course Outcomes 5 | Develop practically deployable skill set involving critical thinking, effective Presentations and leadership qualities to one the opportunities of employability and excel in the professional environment. |
| | Name of the subject | Project Based Learning |
| 11 | Course Objectives 1 | To emphasize project based learning activities that are long-term, Interdisciplinary and student-centric. |
| | Course Objectives 2 | To inculcate independent and group learning by solving real world problem with the help of available resources. |
| | Course Objectives 3 | To be able to develop application based on the fundamentals of electronics and communication engineering by possibly the integration of previously Acquired knowledge. |
| | Course Objectives 4 | To get practical experience in all steps in the life cycle of the development of Electronic systems : specification, design, implementation, and testing. |
| | Course Objectives 5 | To be able to select and utilize appropriate hardware and software tools to Design and analyze the proposed system. |
| | Course Objectives 6 | To provide every student the opportunity to get involved either individually Or as a group so as to develop team skills and learn professionalism. |
| | Course Outcomes 1 | Identify the real-world problem (possibly of interdisciplinary nature) through rigorous literature survey and formulate/set relevant aim and objectives. |
| | Course Outcomes 2 | Contribute to society through proposed solution by strictly following Professional ethics and safety measures. |
| | Course Outcomes 3 | Propose a suitable solution based on the fundamentals of electronics and |



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| | Communication engineering by possibly the integration of previously acquired knowledge. |
| Course Outcomes4 | Analyze the results and arrive at valid conclusion. |
| Course Outcomes5 | Use of technology in proposed work and demonstrate learning in or a land Written form. |
| Course Outcomes6 | Developability to work as an individual and as a team member. |

Sohoj

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Principal

