



Progressive Education Society's

Modern College of Engineering, Shivajinagar, Pune-05.

Department of Electronics and Computer Engineering

COURSE OUTCOMES (SE ECE 2019 PATTERN SYLLABUS)

C201 : Engineering Mathematics III

C201.1	Solve higher order linear differential equation using appropriate techniques for modeling and analyzing electrical circuits
C201.2	Solve problems related to Fourier transform, Z-transform and applications to Communication systems and Signal processing
C201.3	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.
C201.4	Perform vector differentiation and integration, analyze the vector fields and apply to Electro-Magnetic fields
C201.5	Analyze conformal mappings, transformations and perform contour integration of complex functions in the study of electrostatics and signal processing

C201 : Electronic Circuits

C202.1	Assimilate the physics, characteristics and parameters of MOSFET towards its application as amplifier
C202.2	Design MOSFET amplifiers, with and without feedback, & MOSFET oscillators, for given specifications.
C202.3	Analyze and assess the performance of linear and switching regulators, with their variants, towards applications in regulated power supplies
C202.4	Explore and deploy basic configurations of Op-amp with negative feedback, with focus on relevant parameters
C202.5	Design, Build and test Op-amp based analog signal processing and conditioning circuits towards various real time applications
C202.6	Understand and compare the principles of various data conversion techniques and PLL with their applications

C203 : Digital Circuits

C203.1	Identify and prevent various hazards and timing problems in a digital design
C203.2	Use the basic logic gates and various reduction techniques of digital logic circuit
C203.3	Analyze, design and implement combinational logic circuits.
C203.4	Analyze, design and implement sequential circuits
C203.5	Differentiate between Mealy and Moore machines.
C203.6	Analyze digital system design using PLD



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C204 : Data Structure and Algorithm

204.1	Develop programs using C programming language
204.2	Implement sorting and searching algorithms and calculates its complexity
204.3	Develop applications of stacks and queues using array.
204.4	Demonstrate applicability of linear data structures
204.5	Design height balanced Binary Tree and analyze its time complexity.
204.6	Demonstrate applicability of Non linear data structures with real time application.
204.7	Design height balanced Binary Tree and analyze its time complexity.
204.8	Apply the knowledge of graph for solving the problems of spanning tree and shortest path algorithm.

C205 : Computer Organization

205.1	Demonstrate computer architecture concepts related to design of modern processors, memories and I/Os
205.2	Analyze the principles of computer architecture using examples drawn from commercially available computers
205.3	Evaluate various design alternatives in processor organization.

C206 : Electronic Circuits Lab

C206.1	Demonstrate MOSFET characteristics and its applications by analysis.
C206.2	Verify parameters of linear adjustable voltage regulator for given specifications.
C206.3	Determine Performance parameters of Op-amp and its applications.
C206.4	Evaluate performance of converters and PLL.

C207: Digital Circuits Lab

C207.1	Implement different Combinational Circuits like Multiplexer and Demultiplexer
C207.2	Build BCD adder, Subtractor and Comparator
C207.3	Construct different Sequential Circuits like Shift register and counter
C207.4	Compare theoretical and practical parameters for TTL and CMOS

C208: Data Structure and Algorithm Lab

C208.1	Solve various problem statements using C programming language.
C208.2	Construct C programs for implementation of linear data structures (Stack, Queue, and Linked list)
C208.3	Apply concepts of linear data structure to implement its application.
C208.4	Demonstrate non-linear data structures (tree, graph) for solving given problem using C.



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C209: Computer Organization Lab

C209.1	Demonstrate 8086 architecture concepts from programmers perspective
C209.2	Understand the complete instruction set of 8086 and apply them in practice
C209.3	Apply the knowledge of 8086 to construct assembly language code for data transfer operations, string operations, arithmetic and logical operations

C210: Electronic Skill Development Lab

C210.1	Examine the electronic components using test equipment.
C210.2	Illustrate basic electronics applications using Arduino board
C210.3	Implement electronic circuits using simulation software.
C210.4	Calculate power budget of given electronic circuit.

C211: Signals & Systems

C211.1	Identify, classify basic signals and perform operations on signals...
C211.2	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.
C211.3	Analyze and resolve the signals in frequency domain using Fourier series and Fourier Transform
C211.4	Resolve the signals in complex frequency domain using Laplace Transform, and will be able to apply and analyze the LTI systems using Laplace Transforms
C211.5	Define and Describe the probability, random variables and random signals. Compute the probability of a given event, model, compute the CDF and PDF.
C211.6	Compute the mean, mean square, variance and standard deviation for given random variables using PDF

C212: Principles of Programming Language

C212.1	To analyze the strengths and weaknesses of programming languages for effective and efficient program development.
C212.2	To inculcate the principles underlying the programming languages enabling to learn new programming languages.
C212.3	To grasp different programming paradigms
C212.4	To use the programming paradigms effectively in application development



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C213 : Object Oriented Programming

C213.1	Describe the principles of object oriented programming
C213.2	Apply the concepts of data encapsulation, inheritance in C++.
C213.3	Understand Operator overloading and friend functions in C++.
C213.4	Apply the concepts of classes, methods inheritance and polymorphism to write programs C++.
C213.5	Apply Templates, Namespaces and Exception Handling concepts to write programs in C++
C213.6	Describe and use of File handling in C++.

C214 : Principles of Communication Systems

C215.1	To compute & compare the bandwidth and transmission power requirements by analyzing time and frequency domain spectra of signal required for modulation schemes under study
C215.2	Describe and analyze the techniques of generation, transmission and reception of Amplitude Modulation Systems.
C215.3	Explain generation and detection of FM systems and compare with AM systems.
C215.4	Exhibit the importance of Sampling Theorem and correlate with Pulse Modulation technique (PAM, PWM, and PPM).
C215.5	Characterize the quantization process and elaborate digital representation techniques (PCM, DPCM, DM and ADM).
C215.6	illustrate waveform coding, multiplexing and synchronization techniques and articulate their importance in baseband digital transmission

C215 : System Programming & Operating Systems

C215.1	Demonstrate the knowledge of Systems Programming and Operating Systems
C215.2	Formulate the Problem and develop the solution for same.
C215.3	Compare and analyze the different implementation approach of system programming operating system abstractions.
C215.4	Interpret various OS functions used in Linux / Ubuntu

C216 : Signals & System Lab

C216.1	Plot the signals, magnitude and phase spectrum and aliasing effect.
C216.2	Sketch the response of system to verify commutative property of convolution.
C216.3	Observe the effect of Gibb's Phenomenon.
C216.4	Analyze the system using various Modeling Techniques.



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C216.5	Simulate the system to determine stability using time and frequency response.
C216.6	Explain the effect of P, PI, PD and PID controller on the step response

C217 : Communication Lab

C217.1	Demonstrate various modulation techniques.
C217.2	Verify the Sampling Theorem and aliasing effect
C217.3	Demonstrate various line coding techniques and their spectral analysis.
C217.4	Simulate PCM, DM system, sampling of a signal, scrambling and descrambling

C218 : Object Oriented Programming Lab

C218.1	Write C++ program for the given problem using function and reference variable.
C218.2	Demonstrate classes, objects and operator overloading using C++.
C218.3	Execute programming skills using inheritance in C++.
C218.4	Demonstrate use of namespace, exception and file handling using C++.

C219 : Employability Skills Development

C219.1	Describe individual skill sets and importance of soft skills
C219.2	Demonstrate good verbal, non-verbal and written communication skills.
C219.3	Employ professional ethics and leadership skills for better employment and
C219.4	Apply creative and critical thinking for problem solving.

C220 : Project Based Learning

C220.1	Identify the real world problem (possibly of interdisciplinary nature) through a rigorous literature survey and formulate/set relevant aim and objectives...
C220.2	Contribute to society through proposed solution by strictly following professional ethics and safety measures
C220.3	Propose a suitable solution based on the fundamentals of electronics and communication engineering by possibly the integration of previously acquired knowledge.
C220.4	Analyze the results and arrive at valid conclusion.
C220.5	Use of technology in proposed work and demonstrate learning in oral and written form
C220.6	Develop ability to work as an individual and as a team member



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