



**Department of Electronics Engineering**

Course Number: ELC301

Course Name: Engineering Mathematics - III

Unique CO Number	Course Outcome (CO) Statement
ELC3111	Apply the concept of Laplace transform to solve the real integrals in engineering problems
ELC3112	Apply the concept of inverse Laplace transform of various functions in engineering problems.
ELC3113	Expand the periodic function by using Fourier series for real life problems and complex engineering problems.
ELC3114	Find orthogonal trajectories and analytic function by using basic concepts of complex variables.
ELC3115	Illustrate the use of matrix algebra to solve the engineering problems.
ELC3116	Apply the concepts of vector calculus in real life problems.

Course Number: ELC302

Course Name: Electronics Devices & Circuits -I

Unique CO Number	Course Outcome (CO) Statement
EXC3711	List different devices (Diode, BJT, FETs) in basic electronic circuit design and describe their construction, working, I-V characteristics and applications.
EXC3712	Explain various biasing techniques to bias Diode, BJT and FETs to set the quiescent point in the desired region of its operation
EXC3713	Execute DC analysis of device to find quiescent point on the characteristics.
EXC3714	Illustrate various models (re, hybrid II and h parameter) of devices as its AC equivalent.
EXC3715	Evaluate/estimate amplification factor, Input and output resistance for amplifier and efficiency of rectifier.
EXC3716	Design an amplifier and rectifier circuit to satisfy the given requirement to build an application

Course Number: ELC303

Course Name: Digital Circuit Design

**Department of Electronics Engineering**

Unique CO Number	Course Outcome (CO) Statement
ELC3311	To define the various terms used in the design of digital circuits.
ELC3312	To express the given Boolean expression.
ELC3313	To apply different reduction techniques for Boolean expression.
ELC3314	To analyze various combinational and sequential circuits and simulate digital circuits using Verilog.
ELC3315	To decide appropriate MSI IC's, PLD's for implementation of digital circuits.
ELC3316	To design and implement Synchronous Finite State machines.

Course Number:ELC304      Course Name: Electrical Network Analysis & Synthesis

Unique CO Number	Course Outcome (CO) Statement
EXC3221	Apply their understanding of network theorems in analyzing complex circuits.
EXC3222	Evaluate the time response of electrical circuits and thereby understand the behavior of electrical networks
EXC3223	Evaluate the frequency response of electrical circuits and thereby understand the behavior of electrical networks
EXC3224	Evaluate the inter-relationship among various circuit parameters and solve complex networks using these parameters
EXC3225	Synthesize electrical networks for a given network function .
EXC3226	Design various types of filters.



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Unique CO Number	Course Outcome (CO) Statement
ELC3321	Recall and define instrument characteristics as well as interpret errors in measurements.
ELC3322	Examine and Measure various variables or value of unknown element.
ELC3323	Illustrate digital instruments like digital voltmeter, signal generator, wave analyzer
ELC3324	Explain various components of oscilloscopes.
ELC3325	Select appropriate transducer for measurement of distance, temperature and pressure.
ELC3326	Develop a calibration scheme for given instrument.

Course Number-ELL301      Course Name: Electronics Devices & Circuits -I Laboratory

Unique CO Number	Course Outcome (CO) Statement
EXL3711	Analyze forward and reverse characteristics of PN junction and Zener diode.
EXL3712	Understand Zener as a voltage regulator.
EXL3713	Analyze various clipper and clamper circuits.
EXL3714	Calculate the ripple factor of full wave rectifier
EXL3715	Analyze transfer and output characteristics of JFET
EXL3716	Analyze AC and DC performance of CE and CS amplifier

Course Number:      ELL302                      Course Name: Digital Circuit Design Lab

Unique CO Number	Course Outcome (CO) Statement
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EXL3311	Use the design steps of combinational circuits.
EXL3312	Use the design steps of sequential circuits.
EXL3313	Implement combinational and sequential circuits.
EXL3314	Analyze combinational and sequential circuits.
EXL3315	Simulate digital circuits.
EXL3316	Test and debug the simulation.

Course Number: ELL303      Course Name: Electrical Instruments Measurement Lab

Unique CO Number	Course Outcome (CO) Statement
EXL3321	Demonstrate the instrument characteristics as well as interpret errors in measurements
EXL3322	Measure various variables or value (R, L and C) of unknown element..
EXL3323	Illustrate digital instruments like digital voltmeter, signal generator, wave analyzer
EXL3324	Explain various functions of oscilloscopes.
EXL3325	Choose appropriate transducer for measurement of distance, temperature and pressure
EXL3326	Develop a calibration scheme for given instrument.

Course Number: ELL304      Course Name: Object Oriented Programming Methodology

Unique CO Number	Course Outcome (CO) Statement
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EXL3631	Recall fundamental programming constructs to resolve problems.
EXL3632	Summarize the concept of class, object and packages.
EXL3633	Demonstrate the use of strings, arrays and methods
EXL3634	Analyse OOPM feature of inheritance and interface
EXL3635	Recommend requirement of exception handling and multithreading.
EXL3636	Generate applets and develop GUI based application.

Course Number: ELM301      Course Name: Mini Project -1(A)

Unique CO Number	Course Outcome (CO) Statement
EXL3351	Identify problems based on societal /research needs
EXL3352	Apply Knowledge and skill to solve societal problems in a group.
EXL3353	Draw the proper inferences from available results through theoretical/ experimental/simulations.
EXL3354	Analyze the impact of solutions in societal and environmental context for sustainable development.
EXL3355	Use standard norms of engineering practices
EXL3356	Excel in written and oral communication.