



Department of Electronics Engineering

Unique Course Number: ELX401

Course Name: Applied Mathematics - IV

Unique CO Number	Course Outcome (CO) Statement
EXC4911	Apply fundamental concepts & Principles of functionals to obtain the extremals using Euler-Lagrange's equations under different cases of a function
EXC4912	Demonstrate the ability to perform calculations involving Dot products, Norms, Cauchy-Schwartz's inequality and the Triangle inequality.
EXC4913	Compute eigen values & eigen vectors of a square matrix and relate their applicability in diagonalising a square matrix, finding a function of a square matrix and deciding Derogatory & Non- Derogatory matrices
EXC4914	Distinguish between discrete and continuous random variable and choose appropriate probability distribution for statistical inference in data analysis and extend the investigation of the relationship between two random variables to quantify the extent or degree to which the variables are correlated
EXC4915	Apply the concept of Correlation and Regression to the Engineering problems
EXC4916	Analyse and synthesize core knowledge of complex analysis to integrate the complex functions by Cauchy's theorem, Cauchy's Integral Formula and Cauchy's Residue theorem by demonstrating the use of singularities, poles, power series and residues at poles

Course Number: ELX402

Course Name: Electronics Devices & Circuit-II

Unique CO Number	Course Outcome (CO) Statement
EXC4311	Understand single stage and multistage amplifier through frequency response
EXC4312	Understand working and also derive expressions for different performance parameters of feedback amplifiers and oscillators
EXC4313	Perform DC and AC analysis of MOSFET differential amplifier



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EXC4314	Compare and analyse various power amplifiers
EXC4315	Explain working and construction details of special semiconductor devices
EXC4316	Select appropriate circuit for the given specifications/application.

Course Number: ELX 403 Course Name: Microprocessors and Applications

Unique CO Number	Course Outcome (CO) Statement
EXC611	To identify and describe Microprocessors
EXC612	To classify and study the concepts of basic microprocessor and Other co-processors
EXC613	To describe the significance of various peripherals interfaced with microprocessor.
EXC614	To examine how to design a microprocessor
EXC615	To illustrate applications using assembly language programs.
EXC616	To investigate the advanced features of processors like pentium processors

Course Number: ELX404 Course Name: Digital System Design

Unique CO Number	Course Outcome (CO) Statement
EXC4711	To recall the fundamentals of sequential and combinational logic design.
EXC4712	To describe the concept of different digital system design techniques.



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EXC4713	To apply the fundamental design procedures for digital system design.
EXC4714	To make use of simulation tool for digital design.
EXC4715	To analyze various types of digital systems.
EXC4716	To explain the applications of digital system design

Course Number: EXC 4511 Course Name: Principles of Communication Engineering

Unique CO Number	Course Outcome (CO) Statement
EXC 4511	Comprehend the need for various components in analog communication systems
EXC 4512	Analyze various analog modulation methods, & study modulators, demodulators circuits for amplitude, frequency & phase modulated systems.
EXC 4513	Analyze the characteristics and function of the radio receivers.
EXC 4514	Identify the characteristics of pulse modulation techniques and study different Pulse modulators and Demodulators
EXC 4515	Understand the importance of Digital modulation techniques and study them.
EXC 4516	Identify the need of multiplexing techniques and recommend the suitable multiplexing system.

Course Number: ELX406

Course Name: LCS

Unique CO Number	Course Outcome (CO) Statement
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EXC4211	Recall the various modeling, transfer function reduction techniques and stability analysis in time and frequency domain.
EXC4212	Compute and compare the various modeling, transfer function reduction techniques .
EXC4213	Compute and compare the various stability analysis methods in time and frequency domain.
EXC4214	Apply the various modeling, transfer function reduction techniques .
EXC4215	Apply the various stability analysis methods in time and frequency domain.
EXC4216	Analyze the various stability analysis methods in time and frequency domain.

LO STATEMENTS

Course Number:ELXL401 Course Name: Electronics Devices & Circuit-II Laboratory

Unique LO Number	Lab Outcome (LO) Statement
EXL4311	Recall the term frequency response of multistage amplifier and feedback amplifier.
EXL4312	Estimate cut off frequency and bandwidth of multistage amplifier and feedback amplifier.
EXL4313	Demonstrate principle of an oscillator .
EXL4314	Analyze differential amplifier ,calculate CMRR.
EXL4315	Compare and compute different power amplifiers and special semiconductor devices
EXL4316	Select the circuit and document the report for mini-project.



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Course Number: ELXL402 Course Name: Microprocessor and Applications Lab

Unique LO Number	Lab Outcome (LO) Statement
EXL 611	To define and study the arithmetic and logical instructions of 8086
EXL 612	To define and study the branching and movement operation instructions of 8086
EXL 613	To describe the set of string instructions for faster operation.
EXL 614	To utilize the instructions in interfacing peripherals with 8086
EXL 615	To utilize assembler and emulator for DOS interrupt
EXL 616	To demonstrate a mini project utilizing all instructions.

Course Number: ELXL403 Course Name: Digital System Design Laboratory

Unique LO Number	Lab Outcome (LO) Statement
EXL4711	Use the design steps of sequential circuits.
EXL4712	Build the sequential circuit on the breadboard.
EXL4713	Identify errors of the implemented circuit.
EXL4714	Simulate the digital circuits.



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Affiliated to University of Mumbai, Approved by D.T.E. & A.I.C.T.E. | Awarded 'A' Grade by D.T.E., M.S. | Electronics Engineering Program Accredited by N.B.A., New Delhi for 2 years w.e.f. 6th Aug., 2014 | Computer Engineering Program Re-Accredited by N.B.A., New Delhi for 3 years w.e.f. 1st July 2019 | Information Technology Program Accredited by N.B.A., New Delhi for 3 years w.e.f. 1st July 2019



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EXL4715	Select the circuit for mini-project.
EXL4716	Document the report for the mini-project.

Course Number: EXC4511 Course Name: Principles of Communication Engineering Laboratory

Unique LO Number	Lab Outcome (LO) Statement
EXL4511	Visualize different waveforms at different junctions for continuous and pulse modulation and demodulation methods.
EXL4512	Draw modulated and demodulated output waveforms at each continuous and pulse modulation and Demodulation Techniques
EXL4513	Compare the difference between each modulation technique
EXL4514	Calculate modulation Index for Amplitude modulation, Frequency and modulation Techniques.
EXL4515	Analyze the digital modulation circuit and draw its waveforms at different junctions.
EXL4516	Analyze applications of different modulation circuits and apply the knowledge to built their own circuit of modulation technique.