Mahavir Education Trust's

SHAH & ANCHOR KUTCHHI ENGINEERING COLLEGE

Chembur, Mumbai - 400 088

UG Program in Electronics & Telecommunication Engineering

Academic Year:- 2019-20

Semester - IV

Unique Course Number: 1.ECC401 Course Name: Applied Mathematics - IV

Unique CO Number	Course Outcome (CO) Statement
1.ECC4011	Apply fundamental concepts & Principles of functionals to obtain the extremals using Euler-Lagrange's equations under different cases of a function
1.ECC4012	Demonstrate the ability to perform calculations involving Dot products, Norms, Cauchy-Schwartz's inequality and the Triangle inequality.
1.ECC4013	Compute eigen values & eigen vectors of a square matrix and relate their applicability in diagoalising a square matrix, finding a function of a square matrix and deciding Derogatory & Non-Derogatory matrices
1.ECC4014	Apply the concept of Correlation and Regression to the Engineering problems
1.ECC4015	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
1.ECC4016	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

Unique Course Number: 2.ECC402 Course Name: Electronic Devices & Circuits - II

Unique CO Number	Course Outcome (CO) Statement
2.ECC4021	Understand the types, construction & operation of MOSFETs
2.ECC4022	Analyze various multistage and large signal Amplifier circuits

2.ECC4023	Examine power amplifier circuits based on different parameters
2.ECC4024	Remember concept of feedback and different types of feedback topologies
2.ECC4025	Evaluate frequency response to understand behavior of BJT and FET multistage amplifiers.
2.ECC4026	Design Amplifier and Oscillator circuits

Unique Course Number:2.ECC403 Course Name: Linear Integrated Circuits

Unique CO Number	Course Outcome (CO) Statement
2.ECC4031	**Recall** fundamental principles, configuration and working of FETs and Amplifier
2.ECC4032	**Understand** the fundamentals and areas of applications for the integrated circuits
2.ECC4033	**Apply** knowledge of practical circuits to solve real life problems
2.ECC4034	**Analyze** different practical circuits of op-amp and other ICs
2.ECC4035	**Evaluate** operations of DAC and ADC and it's applications
2.ECC4036	**Design** practical circuits that perform the desired operations with OP-AMP, special purpose IC and voltage regulator

Unique Course Number: 3.ECC404 Course Name:Signals and Systems

Unique CO Number	Course Outcome (CO) Statement
3.ECC4041	Recall the concepts and properties of various transforms
3.ECC4042	Understand the signal representations and classify them

3.ECC4043	Understand the system properties and classify them
3.ECC4044	Apply properties of transforms to continuous and discrete time systems
3.ECC4045	Analyze the system in time domain
3.ECC4046	Analyze the system in frequency domain

Unique Course Number: 5.ECC405 Course Name: Principles of Communication Engineering

Unique CO Number	Course Outcome (CO) Statement
5.ECC4051	Understand the basic concept of communication and identify the type and effect of noise and solve basic communication problems.
5.ECC4052	Understand the various types of Analog modulation and demodulation techniques in communication system.
5.ECC4053	Differentiate between various modulation techniques.
5.ECC4054	Analyze transmitter and receiver circuits.
5.ECC4055	Evaluate the effect of change in modulation index on power requirement of a system.
5.ECC4056	Explain the concept of Multiplexing and Demultiplexing.

Unique Course Number: 2.ECL402 Course Name: Electronic Devices & Circuits - II Laboratory

Unique CO Number	Course Outcome (CO) Statement
2.ECL4021	Analyze the characteristics of N channel MOSFET.
2.ECL4022	Determine frequency response and voltage gain of multistage amplifiers.
2.ECL4023	Compare efficiencies of different types of power amplifiers.

2.ECL4024	Explain the concept of feedback in amplifier and their characteristics.
2.ECL4025	Implement different oscillator circuits for various frequencies.
2.ECL4026	Design and implement Mini project.

Unique Course Number2.ECl403 Course Name: Linear Integrated Circuits Laboratory

Unique CO Number	Course Outcome (CO) Statement
2.ECL4021	**Recall** working principle of FETs and Amplifier
2.ECL4022	**Understand** working of various types of amplifier using Op-amp
2.ECL4023	**Apply** practical knowledge in waveform generation circuits
2.ECL4024	**Analyze** different active filters, Timer Circuit and Data converter circuits
2.ECL4025	**Evaluate** behavior of Integrated circuits using Simulation Tools(e.g. multisim, PsPice)
2.ECL4026	**Design** and implement Mini-Project

Unique Course Number: 5.ECL4031 Course Name: Principles of Communication Engineering Laboratory

Unique CO Number	Course Outcome (CO) Statement
5.ECL4031	Demonstrate AM Modulation and Demodulation process.
5.ECL4032	Demonstrate FM Modulation and Demodulation process.
5.ECL4033	Implement different Pulse Modulation and Demodulation techniques.

5.ECL4034	Implement Multiplexing and Demultiplexing of the signal.
5.ECL4035	Simulate Double sideband suppressed carrier Modulation and demodulation using Matlab .
5.ECL4036	Design and implement Mini-Project