The Bombay Salesian Society's

Don Bosco Institute of Technology

Department of Electronics and Telecommunication Engineering
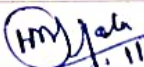### SE Syllabus- Internal Assessment – 1

Even Semester-: AY 2024-25

Date: 10/2/2025

Day-Date	Course Code	Course Name	Syllabus
20 February 2025	ECC401	Engineering Mathematics-IV	**Module 1: Complex Integration** 1.1: Line integral and Cauchy's Integral formula, Cauchy Integral theorem. 1.2: Taylor and Laurent Series 1.3: Definition of Singularity, Poles of f(z), Residues, Cauchy Residue Theorem. **Module 2: Statistical Techniques:** 2.1: Karl Pearson's correlation coefficient. 2.2: Spearman's Rank correlation coefficient. 2.3: Lines of regression 2.4: Fitting of first and Second degree curves
21 February 2025	ECC404	Signals & Systems	**Module1: Introduction to signals and systems** 1.1 Definition, Basic Elementary signals - exponential, sine, step, impulse, ramp, rectangular, triangular. Operations on signals. 1.2 Classification of Signals: analog and discrete time signals 1.3 Even and odd signals 1.4 periodic and non-periodic signals 1.5 energy and power signals. 1.6 Systems and Classification of systems: System representation, continuous time and discrete systems, 1.7 System with and without memory, causal and non-causal system, linear and nonlinear system, time invariant and time variant system, stable system. **Module 2: Time domain analysis of Continuous Time and Discrete Time systems** 2.1 Use of convolution integral for analysis of LTI systems, properties of convolution integral 2.2 Use of convolution sum for analysis of LTI systems, properties of convolution sum **Module 4: Laplace Transform and Continuous time LTI systems** 4.1 Need of Laplace Transform, Concept of Region of Convergence, 4.2 Properties of Laplace Transform with proof and with numericals 4.3 Relation between continuous time Fourier Transform and Laplace Transform, unilateral Laplace Transform 4.4 Inverse Laplace transforms 4.5 Analysis of continuous time LTI systems using Laplace Transform: Causality and stability of systems in s-domain, 4.6 Total response of a system.
22 February 2025	ECC402	Microcontrollers	**Module1: Overview of Microprocessor based System** 1.1 Overview of microcomputer systems and their building blocks, Memory Interfacing, Steps taken by the microprocessor to fetch and executes an instruction from the memory 1.2 Concepts of Program counter register, Reset, Stack and stack pointer , Subroutine, Interrupts and Direct Memory Access 1.3 Concept of RISC & CISC Architecture 1.4 Harvard & Von Neumann Architecture **Module 2: The Memory Systems** 2.1 Classification of Memory : Primary and Secondary 2.2 Types of Semiconductor memories 2.3 Cache Memory 2.4 Virtual Memory Concept with Memory Management Unit with Segmentation and Paging (Address Translation Mechanism) **Module 3: 8051 Microcontroller** 3.1 Comparison between Microprocessor and Microcontroller 3.2 Features, architecture and pin configuration 3.3 CPU timing and machine cycle 3.4 Input / Output ports 3.5 Memory organization

24 February 2025	ECC403	Linear Integrated Circuits	**Module 1: Introduction to Operational Amplifier** 1.1 Block diagram of Op-Amp. Ideal and practical characteristics of op-amp. 1.2 Configurations of Op-Amp: Open loop and closed loop configurations of Op-amp, Inverting and Non-inverting configuration of Op-amp and buffer. 1.3 Summing amplifier, difference amplifiers and Instrumentation amplifier using Op-amp. **Module 2: Linear Applications of Operational Amplifier** 2.1: Voltage to current and current to voltage converter. 2.2: Integrator & differentiator (ideal & practical), Active Filters: First and Second order active low pass, high pass, band pass, band reject and Notch filters.
25 February 2025	ECC405	Principles of Communication Engineering	**Module 1: Basics of Communication System** **Unit 1.1-** Block diagram, electromagnetic spectrum, signal bandwidth and power, types of communication channels, Introduction to time and frequency domain. Basic concepts of wave propagation. **Unit -1.2-** Types of noise, signal to noise ratio, noise figure, noise temperature and Friss formula. **Module 2: Amplitude Modulation and Demodulation** **Unit -2.1-** Basic concepts, need for modulation, waveforms (time domain and frequency domain), modulation index, bandwidth, voltage distribution and power calculations. **Unit -2.2-** DSBFC: Principles, low-level and high-level transmitters, DSB suppressed carrier, Balanced modulators with diode (Ring modulator and FET) and SSB systems. **Unit -2.3-** Amplitude demodulation: Diode detector, practical diode detector, Comparison of different AM techniques, Applications of AM and use of VSB in broadcast television.

Ms.Hemalata Mote/ Mr.kishore B   11/2/2025   11/2/2025   Ms. Madhavi Pednekar   Ms. Pratibha Dumane

IA- Exam Coordinator   Head of EXTC   Dean Academics