The Bombay Salesian Society's

Don Bosco Institute of Technology

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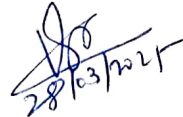SE Syllabus- Internal Assessment – II

Even Semester-: AY 2024-25   **Date: 28/3/2025**

Day-Date	Course Code	Course Name	Syllabus
11 April 2025	ECC401	Engineering Mathematics- IV	**Module 3: Probability Distributions** 3.1 Baye's Theorem, Random variable: Probability distribution for discrete and continuous random variables, Density function and distribution function. 3.2 Expectation, mean and variance. 3.3 Probability distribution: Poisson & normal distribution. **Module 4: Linear Algebra: Vector Spaces:-** 4.1 Vectors in n-dimensional vector space, norm, dot product, The CauchySchwarz inequality (with proof), Unit vector. 4.2 Orthogonal projection, Orthonormal basis, Gram-Schmidt process for vectors. 4.3 Vector spaces over real field, subspaces. **Module 5: Linear Algebra: Quadratic Forms** 5.1 Reduction of Quadratic form to diagonal form using congruent Transformation.
15 April 2025	ECC402 •	Microcontrollers	**Module 3: 8051 Microcontroller** 3.6 Counters and timers 3.7 Interrupts 3.8 Serial data input and output **Module 4: 8051 Assembly Language Programming and Interfacing** 4.1 Addressing modes 4.2 Instruction set 4.3 Need of Assembler & Cross Assemble, Assembler Directives 4.4 Programs related to: arithmetic, logical, delay subroutine , input, output, timer, counters, port, serial communication, and interrupts 4.5 Interfacing with LEDs, Relay and Keys
	ECC404	Signals & Systems	**Module:5 Z-Transforms** 5.1 Need of z-Transform, z-Transform of finite and infinite duration sequences, Concept of Region of Convergence, z-Transform properties, Standard z-transform pairs, relation between z- transform and discrete time Fourier Transform, one sided z- Transform. Inverse z-Transform: Partial Fraction method only. 5.2 Analysis of discrete time LTI systems using z-Transform: Systems characterized by Linear constant coefficient difference equation, Transfer Function, plotting Poles and Zeros of a transfer function , causality and stability of systems, Total response of a system. **Module:3 Fourier Analysis of Continuous and Discrete Time Signals and Systems** 3.1 Fourier transform of periodic and non-periodic functions, Properties of Fourier Transform, Inverse Fourier Transform Frequency Response: computation of Magnitude and Phase Response

28/3/2025

28/03/2025

Ms.Hemalata Mote/ Mr.kishore B   Ms. Madhavi Pednekar   Ms. Pratibha Dumane   Dr. Sudhakar Mande

IA- Exam Coordinator   HOD EXTC   Dean Academics   Principal

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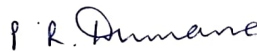| Day-Date	Course Code	Course Name	Syllabus
16 April 2025	ECC403	Linear Integrated Circuits	**Module 2:-Linear Applications of Opamp** 2.3 Positive Feedback,Barhausen's criteria,Sine wave oscillator,RC Phase shift oscillator, Wein Bridge Oscillator. **Module 3:Non-Linear Application of Opamp** 3.1 Comparators:Inverting,Non-inverting,Zero crossing Detector,window Detector. 3.2 Schmitt Triggers: Inveting and Non-invering Schmitt Trigger. 3.3 Waveform Generators:Square wave and Triangular Wave generator. Basic of Precision Rectifiers: Half Wave and Full Wave Precision rectifiers. Peak Detector **Module 4: Timer IC 555 and its Applications** 4.1 Functional Block diagram and working of IC 555 4.2 Design of Astable and Monostable multivibrator using IC 555
17 April 2025	ECC405	Principles of Communication Engineering	**Module 4- Radio Receivers** 4.1 Characteristics of radio receivers, TRF, Super - heterodyne receiver block diagram, tracking and choice of IF, AGC and its types and Communication receiver. **Module 5- Analog and Digital Pulse Modulation & Demodulation** 5.1 Sampling theorem, Nyquist criteria, Sampling techniques, aliasing error and aperture effect. 5.2 PAM, PWM, PPM generation, detection and applications. Basics of PCM system and differential PCM system. Concepts of Delta modulation (DM) and Adaptive Delta Modulation (ADM). **Module 6- Multiplexing & De-Multiplexing** 6.1 Frequency Division Multiplexing transmitter & receiver block diagram and applications. Time Division Multiplexing transmitter & receiver block diagram and applications

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