



The Bombay Salesian Society's

Don Bosco Institute of Technology

Department of Electronics and Telecommunication Engineering

BE SYLLABUS- INTERNAL ASSESSMENT – I

Even Semester:- AY 2024-25

Date: 10/2/2025

BE (EXTC) - SEM VIII

Date	Course Code	Course Name	Syllabus
20 February 2025	ECCB01	Optical Communication and Networks	<p>Mod 1: Optical Fiber Communication Technology 1.1 Block diagram, advantages, loss and bandwidth window, ray theory transmission, total internal reflection, acceptance angle, numerical aperture, and skew rays.</p> <p>1.2 Types of fibers according to refractive index profile and mode transmission.</p> <p>1.3 Fiber material, fiber cables and fiber fabrication, fiber joints, fiber connectors, splices.</p> <p>Mod 2: Transmission Characteristic of Optical Fiber 2.1 Attenuation, absorption, linear and nonlinear scattering losses, bending losses 2.2 Measurements of attenuation, dispersion</p>
21 February 2025	ECCDLO 8013	Wireless Networks (DLO)	<p>1.0 Overview of wireless networks</p> <p>1.1 Wireless Networks: Architecture, Classifications, Switching technology, Communication Problems, Reference Models. Networking issues and Networking Standard.</p> <p>1.2 Wireless Body Area Networks: Properties, Network Architecture, Network components and Applications</p> <p>2.0 Wireless Personal Area Networks</p> <p>2.1 WPAN: Bluetooth (802.15.1): Radio Specifications, Protocol Stack, Link Types, Security, Topologies, Applications.</p> <p>2.2 ZigBee (802.15.4): Radio Specifications, Components, Topologies, Protocol Stack, Applications.</p> <p>2.3 RFID: Radio Specifications, Architecture, Types and applications.</p> <p>2.4 Near Field Communication & UWB (802.15.3 a): Introduction and working.</p> <p>2.5 6LoWPAN: Features, Architecture, protocol stack and applications</p> <p>3.0 Wireless Local Area Network & Wireless Adhoc Networks</p> <p>3.1 Wireless Local Area Network: Equipment, Topologies, Technologies, Applications, Main features of IEEE:802.11a,b, i and n, Protocol Architecture of WLAN</p>
22 February 2025	ECCDLO8023	Network Management in Telecommunication(DLO)	<p>Mod 1: Introduction of Network Management 1.1 Introduction of Network Management: Introducing Network Design Concepts, Challenges of IT managers.</p> <p>1.2 Network Management: Goals, organization and functions</p> <p>1.3 Network management architecture and organization network management perspectives</p> <p>Mod 2: OSI Network Management 2.1 Network management standards</p> <p>2.2 Network management models</p> <p>2.3 Organization model</p> <p>2.4 Information model</p> <p>2.5 Communication model and functional model</p> <p>2.6 Abstract syntax notation – encoding structure, macros functional model CMIP/CMISE</p>
	ILO 8011	Project Management	<p>Module 1: Project Management Foundation: Definition of a project, Project Vs Operations, Necessity of project management, Triple constraints, Project life cycles (typical & atypical) Project phases and stage gate process. Role of project manager, Negotiations and resolving conflicts, Project management in various organization structures.</p> <p>Module2 :Initiating Projects: How to get a project started, Selecting project strategically, Project selection models (Numeric /Scoring Models and Non-numeric models), Stages of team development & growth (forming, storming, norming & performing), team dynamics. Module3: Networking and Scheduling techniques. PERT, CPM</p>
	ILO 8012	Finance Management	<p>Unit 1 Overview of Indian Financial System: Characteristics, Components and Functions of Financial System. Financial Instruments: Meaning, Characteristics and Classification of Basic Financial Instruments – Equity Shares, Preference Shares, Bonds-Debentures, Certificates of Deposit, and Treasury Bill</p> <p>Unit 2 Concepts of Returns and Risks: Measurement of Historical Returns and Expected Returns of a Single Security and a Two-security Portfolio; Measurement of Historical Risk and Expected Risk of a Single Security and a Two-security Portfolio.</p>
	ILO 8019	Environmental Management	<p>Module 1: Introduction to Environmental Management-Environmental Management, Sustainable Development, Energy Scenario, Environmental issues relevant to India,</p> <p>Module 3: Concepts Of Ecology Ecosystems Limiting factors, Carrying capacity,</p> <p>Module 5: Total Quality Environmental Management, ISO-14000, EMS certification</p>

25 February 2025

HioTC801	Industrial IoT	<p>Module 1: Overview of Industry 4.0 and Industrial Internet of Things, Industry 4.0: Industrial Revolution: Phases of Development, Evolution of Industry 4.0, Environment impacts of industrial revolution, Industrial Internet, Basics of CPS, CPS and IIOT, Design requirements of Industry 4.0, Drivers of Industry 4.0, Sustainability Assessment of Industries, Smart Business Perspective, Cyber security, Impacts of Industry 4.0, Industrial Internet of Things: Basics, IIOT and Industry 4.0, Industrial Internet Systems, Industrial Sensing, Industrial Processes, IIOT Challenges – Identifying Things within the internet, Discovering Things and the Data they possess, Managing massive amount of data, Navigating Connectivity Outages, IIOT Edge - Leveraging the Power of Cloud Computing, Communicating with Devices on the Edge, Determining a Request Response Model.</p> <p>Module 4: Examining Middleware Transport Protocols (TCP/IP, UDP, RTP, CoAP), Middleware Software Patterns (Publish Subscribe Pattern, Delay Tolerant Networks), Software Design Concepts – Application Programming Interface – A Technical Perspective, Why Are APIs Important for Business? Web Services, IIOT Middleware Platforms – Middleware Architecture</p> <p>IIOT WAN Technologies and Protocols - IIoT Device Low-Power WAN Optimized Technologies for M2M, SigFox, LoRaWAN, nWave, Dash7 Protocol, Ingénue RPMA, Low Power Wi-Fi, LTE Category-M, Weightless, Millimeter Radio</p>
HCSC801	Application Security	<p>Module 1: Introduction to Application Security, Threats, and Attacks Introduction to Web Application Reconnaissance, Finding Subdomains, API Analysis, Identifying Weak Points in Application Architecture Offense: Cross-Site Scripting (XSS), Cross-Site Request Forgery (CSRF), XML External Entity (XXE) Injection, Injection Attacks, Denial of Service (DoS), Cross-Origin Resource Sharing Vulnerabilities</p> <p>Module 2: Defence and tools Securing Modern Web Applications, Secure Application Architecture, Reviewing Code for Security, Vulnerability Discovery, Defending Against XSS Attacks, Defending Against CSRF Attacks, Defending Against XXE, Defending Against Injection attacks, Defending Against DoS, Defending against CORS based attacks</p>
HAIMLC801	Text, Web and Social Media Analytics	<p>MODULE 1: Introduction Introduction to Text Mining: Introduction, Algorithms for Text Mining, Future Directions Information Extraction from Text: Named Entity Recognition, Relation Extraction, Unsupervised Information Extraction Text Representation: tokenization, stemming, stop words, NER, Ngram modelling</p> <p>MODULE 2: Clustering and Classification Text Clustering: Feature Selection and Transformation Methods, distance based Clustering Algorithms, Word and Phrase based Clustering, Probabilistic document Clustering Text Classification: Feature Selection, Decision tree Classifiers, Rulebased Classifiers, Probabilistic based Classifiers, Proximity based Classifiers. Text Modelling: Bayesian Networks, Hidden Markovian Models, Markov random Fields, Conditional Random Fields</p> <p>MODULE 3: Web-Mining: Introduction to WebMining: Inverted indices and Compression, Latent Semantic Indexing, Web Search, Meta Search: Using Similarity Scores, Rank Positions Web Spamming: Content Spamming, Link Spamming, hiding Techniques, and Combating Spam</p>

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