The Bombay Salesian Society's
Don Bosco Institute of Technology, Mumbai
(An Autonomous Institute Affiliated to University of Mumbai)
Department of Electronics and Telecommunication Engineering

Syllabus for Internal Assessment 2 (IA-2) for EVEN Semester of AY 2025-26

Date: 18 May to 22 May 2026

BE – SEM VIII			
Course Code	**Course Name**	**Faculty Incharge**	**Syllabus Content**
ECC801	Optical Communication and Networks	Prof. Poonam Chakraborty	**Module 3 Optical Communication Systems** 3.1 Working principle and characteristics of sources (LED, LASER), and optical amplifiers3.2 Working principle and characteristics of detectors (PIN, APD), noise analysis in detectors,coherent and non-coherent detection, receiver structure, bit error rate of optical receivers, andreceiver performance.3.3 Point to point links system considerations, link power budget, and rise time budget **Module 4: Optical Network system Components and Optical Networks** 4.1 Couplers, isolators, circulators, multiplexers, filters, fiber gratings, febry perot filters, arrayed waveguide grating, switches and wavelength converters. 4.2 SONET and SDH standards, architecture of optical transport networks(OTNs), networktoppologies, protection schemes in SONET/SDH and wavelength routed architecture. 4.3 Operational principle of WDM, WDM network elements and Architectures, Introduction toDWDM, Solitons.
ECCDLO 8013	Wireless Networks	Dr. Aparna Telgote	**3.1 Wireless Local Area Network:** Equipment, Topologies, Technologies, Applications, Main features of IEEE 802.11 a, b, i and n, Protocol Architecture of WLAN 3.2 Wireless Adhoc Networks: Features, Advantages & Applications Mobile Adhoc Networks: Network Architecture, MAC Protocol **4.0 Wireless Metropolitan & Vehicular Adhoc Networks** 4.1 WMAN (IEEE 802.16): Introduction, WMAN Network Architecture, Network Protocols, Broadband Wireless Networks, Applications 4.2 Vehicular Adhoc Networks (VANETs): Characteristics, Protocols & Applications **5.0 Wireless Wide Area Networks** 5.1 Planning and Design of Wireless Networks: Radio design for a cellular network 5.2 Receiver Sensitivity: Link budget for GSM and CDMA Systems, HSDPA
ECCDLO 8023	Network Management in Telecommunication	Prof. Poonam Chakraborty	**Module 3: Internet Management (SNMP)** 3.1 SNMP Verson 1 3.1 SNMP Version 2 3.3 SNMP version 3 3.4 RMON **Module 4: Broadband Network Management** 4.1 Broadband networks and services, ATM Technology – VP, VC, ATM Packet, Integrated service, ATM LAN emulation 4.2 ATM Network Management – ATM network reference model 4.3 M1, M2, M3, M4 interface. ATM digital exchange interface management

ILO 8012	Finance Management	Prof. Prasad Padalkar	**Module 4: Capital Budgeting:** Meaning and Importance of Capital Budgeting; Inputs for Capital Budgeting Decisions; Investment Appraisal Criterion—Accounting Rate of Return, Payback Period, Discounted Payback Period, Net Present Value(NPV), Profitability Index, Internal Rate of Return (IRR), and Modified Internal Rate of Return (MIRR) **Module 5: Capital Structure;** Overview of Capital Structure Theories and Approaches— Net Income Approach, Net Operating Income Approach; Traditional Approach, and Modigliani-Miller Approach. Relation between Capital Structure and Corporate Value; Concept of Optimal Capital Structure **Module 6: Dividend Policy:** Meaning and Importance of Dividend Policy; Factors Affecting an Entity's Dividend Decision; Overview of Dividend Policy Theories and Approaches— Gordon's Approach, Walter's Approach, and Modigliani- Miller Approach
ILO 8029	Environmental Management	Dr. Vinod Gokarna	**Module 3:** Concepts of Ecology: Ecosystems and interdependence between living organisms, habitats, limiting factors, carrying capacity, food chain, etc. **Module 4:** Scope of Environment Management, Role and functions of Government as a planning and regulating agency Environment Quality Management and Corporate Environmental Responsibility. **Module 5:** Total Quality Environmental Management, ISO-14000, EMS certification.
HCSC801	H&M: Application Security	Prof. Aruna Khubalkar	**Module 3: Secure Coding Practices :** Security Requirements, Encryption, Never Trust System Input, Encoding and Escaping, Third-Party Components, Security Headers: Seatbelts for Web Apps, Securing Your Cookies, Passwords, Storage, and Other Important Decisions, HTTPS Everywhere, Framework Security Features, File Uploads, Errors and Logging, Input Validation and Sanitization, Authorization and Authentication, Parameterized Queries, Least Privilege, Requirements Checklist **Module 4: Secure Application Design and Architecture:** Secure Software Development Lifecycle Averting Disaster Before It Starts, Team Roles for Security, Security in the Software Development Lifecycle, Design Flaw vs. Security Bug, Secure Design Concepts, Segregation of Production Data,Application Security Activities **Module 6: Threat Modeling :** Objectives and Benefits of Threat Modeling, Defining a Risk Mitigation Strategy, Improving Application Security, Building Security in the Software Development Life Cycle Existing Threat Modeling Approaches Security, Software, Risk-Based Variants Threat Modeling Within the SDLC Building Security in SDLC with Threat Modeling, Integrating Threat Modeling Within the Different Types of SDLCs,
HAIMLC801 AI & ML	H&M: AI&ML: Text, Web and Social Media Analytics	Prof. Udaychandra A. Nayak	Web Usage Mining: 4.1 Data Collection and Pre-processing, Sources and types of Data, Data Modelling, Sessionand Visitor Analysis, Cluster Analysis and Visitor segmentation, Association andCorrelation Analysis, Analysis of Sequential and Navigational Patterns, Classification and Prediction based on Web User Transactions.5.0 Social Media Mining: 5.1 Introduction, Challenges, Types of social Network Graphs5.2 Mining Social Media: Influence and Homophily, Behaviour Analytics, Recommendationin Social Media: Challenges, Classical recommendation Algorithms, Recommendationusing Social Context, Evaluating recommendations.6.0 Opinion Mining and Sentiment Analysis: 6.1 The problem of opinion mining,6.2 Document Sentiment Classification: Supervised, Unsupervised6.3 Opinion Lexicon Expansion: Dictionary based, Corpus based6.4 Opinion Spam Detection: Supervised Learning, Abnormal Behaviours, Group SpamDetection.

HDSC801 Data Science	H&M: Data Science: Text, Web and Social Media Analytics	Ms. Hiteshree Shirtavde	**4.0 Web Usage Mining:** 4.1 Data Collection and Pre-processing, Sources and types of Data, Data Modelling,Session and Visitor Analysis, Cluster Analysis and Visitor segmentation, Associationand Correlation Analysis, Analysis of Sequential and Navigational Patterns,Classification and Prediction based on Web User Transactions. **5.0 Social Media Mining:** 5.1 Introduction, Challenges, Types of social Network Graphs 5.2 Mining Social Media: Influence and Homophily, Behaviour Analytics,Recommendation in Social Media: Challenges, Classical recommendation Algorithms,Recommendation using Social Context, Evaluating recommendations. **6.0 Opinion Mining and Sentiment Analysis:** 6.1 The problem of opinion mining,6.2 Document Sentiment Classification: Supervised, Unsupervised 6.3 Opinion Lexicon Expansion: Dictionary based, Corpus based 6.4 Opinion Spam Detection: Supervised Learning, Abnormal Behaviours, Group SpamDetection.

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