TECHNO INDIA UNIVERSITY
WESTBENGAL

EM 4, Sector V, Salt Lake, Kolkata-700091, West Bengal, India
Phone: +91 9836544416/17/18/19, Fax: +91 33 2357 1097

2-Year Master of Technology (M.Tech) Curriculum and Syllabus for Electronics & Communication Engineering (ECE)

Third Semester

Sl No	Code	Subject	Contacts			Credits
			L	T	P	
A. Theory						
1	TIU-PEC-T201	Optical Communication & Fibre Optics	3	1	0	4
2	TIU-PMG-T209	Project Management	3	0	0	3
B. Sessionals						
1	TIU-PES-S299	Entrepreneurship Skill Development	0	0	0	2
2	TIU-PEC-P299	Project Phase - I	0	0	2	14
3	TIU-PEC-V299	Project Viva Voce - I	0	0	0	4
4	TIU-PEC-S299	Seminar	0	0	2	2
Total						29

External Expert	HOD	Registrar	Dean	VC

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Optical Communication & Fibre Optics
TIU-PEC-T201
L-T-P: 3-1-0

Credits: 4

Introduction to optical communications systems, Brief overview of optical fibres, sources and photodetectors; Optical transmitters: LED driver circuits: saturated transistor and emitter-coupled configurations, Laser driver circuits, mean and peak power control circuits, temperature control circuits; Optical receivers using direct detection: PIN-based receivers, APD-based receivers, Receiver noise processes, Receiver circuits: preamplifiers - Transimpedance and high-input-impedance amplifiers; Digital optical communication links: BER in quantum limit, BER analysis for PIN-based and APD-based receivers in presence of shot and thermal noise components, Link design Power budget and rise-time budget, Line coding schemes; SONET/SDH: Limitations of PDH multiplexing, SONET/SDH layers, SONET/SDH frame structure, SONET/SDH physical layer, Elements of SONET/SDH infrastructure; Analog optical communication links: RIN, SNR analysis and limiting conditions, Multichannel AM and FM, Subcarrier multiplexing; Elements of coherent optical communication systems: Fundamental concepts and requirements for lasers, Frequency alignment and polarization control schemes, PSK, FSK, DPSK generation and demodulation techniques.

Recommended Textbooks:
1. J. M. Senior, “Optical Fiber Communications: Principles and Practice”, Pearson
2. G. Keiser, “Optical Fiber Communications”, McGraw Hill

Project Management
TIU-PMG-T209
L-T-P: 3-0-0 **Credits: 3**

Module- I
Project Feasibility Analysis: Technical feasibility, commercial and financial viability, Environment Analysis.
Project Engineering: Project Management Techniques: Network Techniques, PERT, CPM, Project Scheduling Crashing, PERT / COST, Line of Balance (LOB).

Module- II
Projects Financing alternatives, Sources of finance, their advatages, Choice of Financing mix, Capital budgeting.
Project Organisation, management and control: Project organisation and control staffing, monitoring: cost, time and control and progress monitoring techniques.

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Module- III

Costing: Fixed and variable cost. Marginal Costing, Break even analysis, Overhead allocation Techniques.

Product and service pricing: Availability and quality based pricing for services. Capacity planning and expansion, capacity decision considering and models.

Recommended Textbooks:

1. Prasanna Chandra, “Project Engineering and Management”, Prentice-Hall
2. W. D. Jerome & L. D. Ferdinand, “Management guide to PERT / CPM”, Prentice Hall

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