

Branch Name:	Signal Processing and Communication
Program Code:	ET214
Course Name:	Optical Networks and Photonic Switching Practical
Course Code:	2ET2140209P
Pre-requisite Course:	Basic Knowledge and Fundamentals of Optical Communication Engineering

Course Objectives:

1. The main purpose of this course is to introduce important areas of communication networks, mainly optical networks and photonic switching.
2. This course will enable the students to acquire a solid understanding of foundations of optical network technologies, systems, network issues as well as economic deployment considerations and also photonic switching.

Teaching and Examination Scheme:

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								
					Theory (Marks)				Practical (Marks)				Total (Marks)
	SEE		CCE		SEE		CCE						
	L	T	P	Total	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
1	-	-	2	2	-	-			10	25	10	25	50

Subject Contents

Sr. No	Topic	Total Hours	Weight (%)
1	Multiplexing Techniques Propagation of light energy in optical fibers: Loss and Bandwidth windows	2	8
2	Transmission basics -Intermodal dispersion	2	8
3	Chromatic dispersion, Non linear effect	2	8
4	Network evolution	2	8
5	Types of Optical networks	4	18
6	First and second generation optical networks	4	18
7	Network Components: Couplers, Isolators and Circulators,	2	8
8	Multiplexers and Filters: Fiber gratings	2	8
9	Fabry Perot Filters	2	8
10	EDFA	4	8

List of Reference Books:

1. "Handbook of Photonics", Mool C. Gupta, CRC Press, 1997

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Understand the various components of optical networks.	1 Remembering 2 Understanding
CLO2	Acquire a solid foundation of design issues of the optical network as well photonic switching.	2 Understanding 5. Evaluate 3 Applying
CLO3	Understand interpret and analyze Optical components and photonic packet switching.	4 Analyze 2 Understanding

Mapping of CLOs with POs & PSOs

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes(PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CLO1	H				L	M							H	M	L	
CLO2	H		M	M	L					L		H		M	L	
CLO3		M	H		L									H		L

H: High, M: Medium, L: Low