

# ENGINEERING COLLEGE JYOTHI NAGAR, CHEMPERI - 670632, KANNUR, KERELA

Affiliated to APJ Abdul Kalam Technological University, Approved by AICTE ISO 9001: 2015 Certified | Accredited by Institution of Engineers (India), NBA, NAAC Ph: 0490 2212240, 2213399 Email: office@vjec.ac.in Website: www.vjec.ac.in

**NAAC Cycle 2** 

Criterion: 2.6.1

#### 2.6.1 Dissemination of COs, POs and PSOs .

SI. No.	Contents
1	Geo-tagged photos for dissemination of COs, POs and PSOs
2	Course Outcomes in internal assessment question paper



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#### Geo-tagged photos for dissemination of COs, POs and PSOs



Fig: Geo- tagged photo of POs and PEOs displayed at ECE staff room



Fig: Geo- tagged photo of POs displayed at Laboratory



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Fig: Geo- tagged photo of COs displayed at Laboratory



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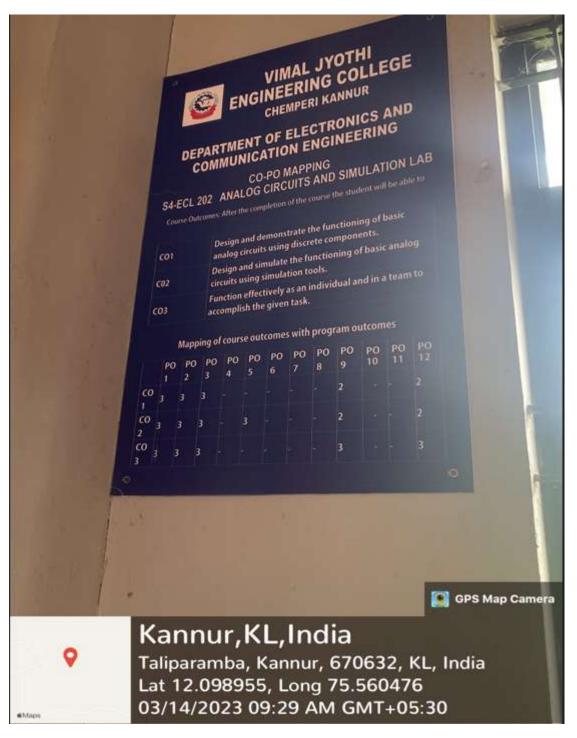


Fig: Geo- tagged photo of COs displayed at Laboratory



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Fig: Geo- tagged photo of POs displayed at HOD room



Fig: Geo- tagged photo of POs and PSOs displayed at S8 ECE class room



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**NAAC Cycle 2** 

Name	
PRN No.	
Signature	



Sign	natu	ıre						
Series Test		Test	2	Year/Semester		4th Year-Semester 7		
Subject Date of Exam Starting time		t	ECT413-OPTICAL FIBER COMMUNICATION	Branch		EC		
		f Exam	17 Oct 2023         Duration           02:00 PM         Max. Marks		1Hour s 60			
		g time						
			PART A	,				
			Answer All Questions					
Q.N	lo			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Marks	со	Level	
1		Discuss	s your understanding on dispersion in optical fib	re cable?	3	CO2	L2	
2		Draw the diagram of a star coupler and write the significance of it.			3	CO2	L2	
3		Differentiate fiber splices and fiber connectors.		3	CO2	L2		
4	1	Consider a silicon avalanche photodiode has a quantum efficiency of 70 percent at a wavelength of 950nm. Suppose $0.5\mu W$ of optical power produces a multiplied photocurrent of $15\mu A$ . Find (a) the primary photocurrent? (b) the multiplication factor?			3	соз	L3	
5		Differentiate direct modulation and external modulation in laser diode		3	соз	L2		
6		Draw a	nd explain the energy band diagram of PIN phot	odiode	3	CO3	L2	
			PART B					
			Answer 3 out of 6 question	u(s).				
Q.No					Marks	со	Level	
7	2		explain intrinsic and extrinsic absorption losses is optical fibre cable?	n silica	7	CO2	L2	
7	D 1		hort note on elastic- tube splicing method in the ith a neat sketch?	optical	7	CO2	L2	
	50-10		OR	18				
8	а	Raman	various nonlinear scattering process such as stir scattering and stimulated Brillouin scattering in ommunication?		8	CO2	L2	
8	b	Differe	ntiate Raman process and Brillouim process		6	CO2	L2	



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Criterion: 2.6.1

				1 1	
9	а	Explain macro bending and micro bending losses with neat diagrams.	7	CO2	L2
9	b	An optical fiber has an attenuation coefficient of 0.5dB/km at 1310nm. Find the optical power at 25km if 500µW of optical power is launched into the fiber.	7	CO2	L2
	**** ***	OR		10 00	
10	а	Explain the working principle of avalanche photodetector. Also draw the structure of APD.	8	CO3	L2
10	b	Write a note on photo detector noise	6	CO3	L2
	100 10	*		100 100	
11	а	What is a heterojunction? Explain the working of heterojunction LED with a neat sketch?	7	соз	L2
11	b	Explain briefly the structure and working principle of a distributed feedback laser diode with neat sketch?	7	соз	L2
		OR		W W	
12	а	Photons of 1300nm wavelength are incident on a pin photodiode at a rate of $5*10^{10}~S^{-1}~$ and the electrons are collected at a rate of $2*10^{10}~S^{-1}~$ . Calculate the quantum efficiency and responsivity of the diode.		CO3	L2
12	b	Expalin external modulation in LASER diode using Mach-Zehnder waveguide interferometer.	7	соз	L2

CO2: Solve problems of transmission characteristics and losses in optical fiber

CO3: Discuss the constructional features and the characteristics of optical sources and detectors

\*Level: Knowledge level based on Blooms Taxonomy [ L2. Understanding, L3. Applying ]