

**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI**

COURSE PLAN – PART I			
Name of the programme and specialization	B.Tech – Electronics and Communication Engineering		
Course Title	Fiber Optic Communication Laboratory		
Course Code	ECLR18	No. of Credits	01
Course Code of Pre-requisite subject(s)	ECPC28		
Session	July 2018	Section (if, applicable)	A / ✓B
Name of Faculty	Dr. R. K. JEYACHITRA	Department	Electronics and Communication Engineering
Email	jeyachitra@nitt.edu	Telephone No.	0431 2503320
Name of Course Coordinator(s) (if, applicable)	-		
E-mail	-	Telephone No.	-
Course Type	<input checked="" type="checkbox"/> Core course	<input type="checkbox"/> Elective course	
Syllabus (approved in BoS)			
<p>List of Experiments</p> <ol style="list-style-type: none"> 1. Characteristics of Laser Diode & LED 2. Characteristics of Photo Detector 3. Characteristics of Avalanche Photodiode (APD) 4. Measurement of Attenuation and Bending Loss 5. Measurement of Numerical Aperture 6. Analog and Voice Communication through Optical Link 7. Photonics CAD 8. Fiber Dispersion Measurement 9. Study of BER and Q-factor Measurement 10. Study of Optical Receiver Sensitivity Characteristics <p>Reference:</p> <p>Lab manuals and Supplier manuals are distributed among students.</p>			

COURSE OBJECTIVES	
To understand the characteristics of optical fibers, optical sources and photodetectors, to realize the analog and voice communication links and to comprehend the effects and performance of fiber optic communication systems.	
COURSE OUTCOMES (CO)	
Course Outcomes	Aligned Programme Outcomes (PO)
At the end of the course student will be able to	
1. Understand the characteristics of optical sources and photodetectors in the fiber optic communication systems	PO1, PO2, PO3, PO4, PO9, PO10 and PO12
2. Establish the analog and voice communication through the optical fibers	PO1, PO2, PO3, PO4, PO6, PO9, PO10 and PO12
3. Understand the various propagation effects of the optical fibers	PO1, PO2, PO4, PO7, PO9, PO10 and PO12
4. Analyze the performance parameters of the fiber optic communication systems	PO1, PO2, PO4, PO9, PO10 and PO12
5. Analyze the operating principle of WDM systems	PO1, PO2, PO3, PO4, PO5, PO9, PO10 and PO12

COURSE PLAN – PART II			
COURSE OVERVIEW			
Students get exposure to the fundamentals and advance level of optical communication systems. Course includes series of hardware and software experiments which provide hands-on-experiment needed to understand the basic concepts and laboratory techniques of fiber optic communication. The lab is well equipped with computers, optical simulation softwares, Optical CAD tools such as OPTSIM and Photonics CAD respectively.			
COURSE TEACHING AND LEARNING ACTIVITIES			
S.No.	Week/Contact Hours	Topic	Mode of Delivery
1	I WEEK	Instruction class	LAB EXERCISE
2	II WEEK	Characteristics of Laser Diode & LED	
3	III WEEK	Characteristics of Photo Detector	
4	IV WEEK	Characteristics of Avalanche Photodiode (APD)	
5	V WEEK	Measurement of Attenuation and Bending Loss	
6	VI WEEK	Measurement of Numerical Aperture	

7	VII WEEK	Analog and Voice Communication through Optical Link	LAB EXERCISE
8	VIII WEEK	Photonics CAD	
9	IX WEEK	Fiber Dispersion Measurement	
10	X WEEK	Study of BER and Q-factor Measurement	
11	XI WEEK	Study of Optical Receiver Sensitivity Characteristics	

COURSE ASSESSMENT METHODS (shall range from 4 to 6)

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Observation	To be submitted every week while coming to the lab		15
2	Record	To be submitted every next week after completion of experiment		20
3	Performance and Conduction	Every Lab session		05
4	Viva voce (WRITTEN TEST)	One week prior to the end semester	60 Minutes	30
5	End semester evaluation		90 Minutes	30

COURSE EXIT SURVEY (mention the ways in which the feedback about the course shall be assessed)

- Feedback from the students during class committee meetings.
- Individual Subject feedback through MIS website at the end of the semester.

COURSE POLICY (preferred mode of correspondence with students, compensation assessment policy to be specified)

MODE OF CORRESPONDENCE (email/ phone etc)

1. All the students are advised to check their NITT WEBMAIL regularly. All the correspondence (schedule of classes/ schedule of assessment/ course material/ any other information regarding this course) will be done through their webmail only.
2. Queries (if required) to the course teacher shall only be emailed to the email id specified by the teacher.

COMPENSATION ASSESSMENT POLICY

- **No Compensation Assessment** for Assessment 4 and 5.
- It is advised to complete the missed experiments in the redo lab session.

ATTENDANCE POLICY (A uniform attendance policy as specified below shall be followed)

- **At least 75% attendance in each course is mandatory.**
- **A maximum of 10% shall be allowed under On Duty (OD) category.**
- Students with **less than 65% of attendance** shall be prevented from writing the final assessment and **shall be awarded 'V' grade.**

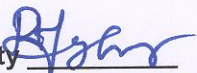
ACADEMIC DISHONESTY & PLAGIARISM

- Possessing a mobile phone, carrying bits of paper, talking to other students, copying from others during an assessment will be treated as punishable dishonesty.
- Zero mark to be awarded for the offenders. For copying from another student, both students get the same penalty of zero mark.
- The departmental disciplinary committee including the course faculty member, PAC chairperson and the HoD, as members shall verify the facts of the malpractice and award the punishment if the student is found guilty. The report shall be submitted to the Academic office.

The above policy against academic dishonesty shall be applicable for all the programmes.

ADDITIONAL INFORMATION

FOR APPROVAL

Course Faculty  CC-Chairperson  HOD 
(D.Y.R.K. JEYACHITRA)

Guidelines:

- a) The number of assessments for a course shall range from 4 to 6.
- b) Every course shall have a final assessment on the entire syllabus with at least 30% weightage.
- c) One compensation assessment for absentees in assessments (other than final assessment) is mandatory. Only genuine cases of absence shall be considered. Details of compensation assessment to be specified by faculty.
- d) The passing minimum shall be as per the regulations.
- e) Attendance policy and the policy on academic dishonesty & plagiarism by students are uniform for all the courses.
- f) Absolute grading policy shall be incorporated if the number of students per course is less than 10.
- g) Necessary care shall be taken to ensure that the course plan is reasonable and is objective.