

NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE PLAN			
Course Title	Fiber Optics and Communication Laboratory		
Course Code	EC 608	No. of Credits	02
Department	Electronics and Communication Engineering	Faculty	Dr.R.K.jeyachitra
Pre-requisites Course Code	None		
Course Coordinator(s) (if, applicable)	Dr.R.K.jeyachitra		
Other Course Teacher(s)/Tutor(s) E-mail	Mr.S.Radhakrishnan srkrishnan@nitt.edu Ms.C.G.Akalya cgakal@nitt.edu	Telephone No.	jeyachitra@nitt.edu 9443145540
Course Type	Core course for Lab		
COURSE OVERVIEW			
<p>Students get exposure to the fundamentals and advanced level of optical and Communication systems. Course includes series of hardware and software experiments which provide hands - on - experiment needed to master the basic concepts and laboratory techniques of optical fiber and communication technology. The lab is well equipped with computers, Optical simulation, Optical CAD tools such as OPTSIM and Photonics CAD respectively to support a strong research activity in this area.</p>			
COURSE OBJECTIVES			
<ol style="list-style-type: none"> 1.To prepare the students understand the various process and subsystems involved in the optics and communication systems. 2. To enable the students appreciate the different multiplexing technologies in the fiber optics and communication systems. 3. To design optics and communication systems to serve a defined purpose . 			
COURSE OUTCOMES (CO)			

Course Outcomes

1. Understand the modulation and demodulation schemes in the coherent optical systems
2. Understand the various types of the optical amplifiers
3. Analyze various multiplexing techniques used and evaluate the recent advances in this field
4. Compare the merits and demerits, potential applications of microwave semiconductor devices
5. Analyze the operating principle of WDM solutions systems

COURSE TEACHING AND LEARNING ACTIVITIES

S.No.	Week	Topic	Mode of Delivery
1.	I Week	Instruction class	LAB EXERCISE
2.	II Week	Measurement of Numerical Aperture	
3.	III Week	Measurement of attenuation and bending loss in multimode glass fiber	
4.	IV Week	Analog and voice Communication through Optical link	
5.	V Week	Study of BER and Q-factor Measurement	
6.	VI Week	EDFA Design for DWDM	
7.	VII Week	Study the characteristics of AWGN and BSC channels	
8.	VIII Week	BPSK Modulation and demodulation	
9.	IX Week	Convolution Encoder and Decoder	

			LAB EXERCISE
10.	X Week	Orthogonal Frequency Division Multiplexing (OFDM)802.11a.	
11.	XI Week	ISI using MATLAB Simulink.	
12.	XII Week	a.Characteristics of WDM Link. b.Installation of Glomosim.	

COURSE ASSESSMENT METHODS				
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		10
4.	Viva voce-Written exam	One week prior to end semester	60 minutes	30
5.	End Semester Evaluation		90 minutes	25

ESSENTIAL READINGS : Textbooks, reference books Website addresses, journals, etc

Reference:

LAB MANUALS and Supplier manuals are distributed among students.

COURSE EXIT SURVEY (mention the ways in which the feedback about the course is assessed and indicate the attainment also)
Feedback from the students during class committee meetings Anonymous feedback through questionnaire
COURSE POLICY (including plagiarism, academic honesty, attendance, etc.)
<u>CORRESPONDENCE</u>
1. All the students are advised to check their NITT WEBMAIL/group mail/suggested by the course faculty, class representative regularly. All the correspondence (schedule of classes/ schedule of assessment/ course material/ any other information regarding this course) will be done through them only.
2. Queries (if required) to the course teacher shall only be emailed to the email id specified by the teacher.
<u>ATTENDANCE</u>
3. Attendance will be taken by the faculty in all the contact hours. Every student should maintain minimum of 75 % physical attendance in these contact hours along with assessment criteria to attend the end semester examination.
4. Any student, who fails to maintain 75% attendance and misses any lab experiment needs to appear for the compensation classes with regular evaluation process. Student

attendance is compulsory, along with assessment criteria will be eligible for attending the end semester examination.

5. Students not having 75% minimum attendance at the end of the semester , will have to RE DO the course.

ASSESSMENT

6. Attending all the assessments are MANDATORY for every student.
7. Finally every student is expected to score minimum 1/3rd of the top rank holder of the class(including all assessments)to pass the course. otherwise student would declare fail and 'F' grade will be awarded. Further ,he can take up only FORMATIVE ASSESSMENT.

ACADEMIC HONESTY & PLAGIARISM

1. All the students are expected to be genuine during the course work. Taking of information by means of copying simulations, assignments, looking or attempting to look at another student's paper or bringing and using study material in any form for copying during any assessments is considered dishonest.
2. Tendering of information such as giving one's program, simulation work, assignments to another student to use or copy is also considered dishonest.
3. Preventing or hampering other students from pursuing their academic activities is also considered as academic dishonesty.
4. Any evidence of such academic dishonesty will result in the loss of marks on that assessment. Additionally, the names of those students so penalized will be reported to the class committee chairperson and HoD of the concerned department.
5. Students who honestly producing ORIGINAL and OUTSTANDING WORK will be REWARDED.

ADDITIONAL COURSE INFORMATION

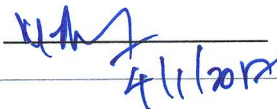
eg.: The Course Coordinator is available for consultation at times that are displayed on the coordinator's office notice board. Queries may also be emailed to the Course Coordinator directly at -----

FOR SENATE'S CONSIDERATION

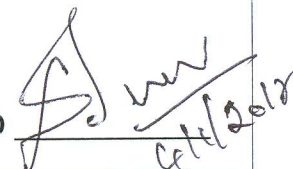
Course Faculty _____



CC-Chairperson _____


4/1/2012

HOD _____


6/1/2012