



NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

Department: Physics

COURSE PLAN			
Name of the program and specialization	B.Tech. 1 st Year – Electronics and Communication Engineering		
Course Title	Physics Lab		
Course Code	PHIR12	No. of Credits	2
Course Code of Pre-requisite subject(s)	NIL		
Session	July 2022	Section (if, applicable)	A
Name of Faculty	Rohini P- Research Scholar, Dept. of. Physics	Department	Physics
Official Email	413119011@nitt.edu	Telephone No.	7592979375
Name of Course Coordinator(s) (if, applicable)			
Official E-mail		Telephone No.	
Course Type (please tick appropriately)	<input checked="" type="checkbox"/> Core course <input type="checkbox"/> Elective course		
Syllabus (approved in BoS)			
Laboratory Experiments <ol style="list-style-type: none"> 1. Wavelength of laser using diffraction grating 2. Radius of curvature of lens – Newton’s Rings 3. Dispersive power of a prism – Spectrometer. 4. Wavelengths of white light – Spectrometer 5. Numerical aperture of an optical fiber 6. Field along the axis of a circular coil 7. Calibration of voltmeter – Potentiometer 8. Rigidity modulus of the material of a wire & moment of inertia of annular ring - Torsional pendulum with ring 			
COURSE OBJECTIVES			
<ol style="list-style-type: none"> 1. To introduce the spirit of experiments to verify physics concepts such as reflection, refraction, diffraction and interference on light matter interaction. 2. To perform experiments to estimate the materials properties and to check their suitability in science and engineering. 3. To familiarize Physics concepts and to design instruments and experimental set up for better and accurate measurements. 			



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4. To teach and apply knowledge to measure and verify the values of certain constants in Physics.

Course Outcomes

On completion of this course, the students will be able to,

1. Know how to calibrate a galvanometer and convert it into a current and voltmeters.
2. To make experimental setup to verify certain Physics concepts of wave and particle nature of light.
3. Understand the light propagation in fibers, light matter interaction and use of lasers in science and engineering.
4. Acquire knowledge, estimate and suggest materials for engineering applications.

COURSE PLAN – PART II			
COURSE TEACHING AND LEARNING ACTIVITIES			
Sl. No.	Week/Contact Hours	Topic	Mode of Delivery
1.	22 nd November 2022	Introduction to the course & Demonstration of optics experiments	Black board and demonstration in the laboratory
2.	29 th November 2022	Wavelength of laser using diffraction grating	Laboratory
3.	06 th December 2022	Radius of curvature of lens – Newton's Rings	Laboratory
4.	13 th December 2022	Dispersive power of a prism – Spectrometer.	Laboratory
5.	20 th December 2022	Wavelengths of white light – Spectrometer	Laboratory
6.	27 th December 2022	Quiz 1 & Revision of the experiments	Laboratory
7.	3 rd January 2023	Demonstration non- optics experiments	Black board and demonstration in the laboratory
8.	10 th January 2023	Numerical aperture of an optical fiber	Laboratory
9.	17 th January 2023	Field along the axis of a Circular coil	Laboratory
10.	24 th January 2023	Calibration of voltmeter – Potentiometer	Laboratory
11.	31 st January 2023	Rigidity modulus of the material of a wire & moment of inertia of annular ring - Torsional pendulum with ring	Laboratory
12.	07 th February 2023	Quiz 2 & Revision of the experiments	Laboratory
13.	As per NITT Schedule	Final assessment	Laboratory



COURSE ASSESSMENT METHODS				
Sl. No.	Mode of Assessment	Week/Date	Duration	% Weightage
1.	Quiz 1	27 th December 2022	30 min	10%
2.	Quiz 2	07 th February 2023	30 min	10%
3.	Internal Assessment	29 th November 2022 - 07 th February 2023	--	40%
4.	Final Assessment *	As per NITT Schedule	3 hr	40%

*mandatory; refer to guidelines on page 4

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

Feedback from the students will be taken twice (mid-semester and end of the semester) on the depth of the knowledge gained, effectiveness of the methodology adopted, and scope of improvement.

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

- 100% attendance is required to complete the experiments.
- 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.

FOR APPROVAL

Course Faculty


02/1/22

CC- Chairperson



HOD

