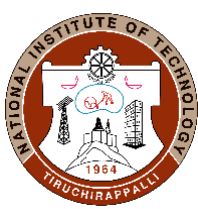


DEPARTMENT OF PHYSICS

COURSE PLAN – PART I			
Name of the programme and specialization	B.Tech. PRODUCTION ENGINEERING		
Course Title	PHYSICS II		
Course Code	PHIR12	No. of Credits	2
Course Code of Pre-requisite subject(s)	NIL		
Session	January 2021	Section (if, applicable)	B
Name of Faculty	Dr. V. Vasanthi	Department	PHYSICS
Official Email	vasanthi@nitt.edu	Telephone No.	NIL
Name of Course Coordinator(s) (if, applicable)	Dr. K. Panneerselvam		
Official E-mail		Telephone No.	0431-2503512
Course Type (please tick appropriately)	<input checked="" type="checkbox"/> Core course	<input type="checkbox"/> Elective course	
<b>Syllabus (approved in BoS)</b>			
<b>Laboratory Experiments</b>			
<ol style="list-style-type: none"> <li>1. Determination of rigidity modulus of a metallic wire</li> <li>2. Radius of curvature of lens – Newton’s Rings</li> <li>3. Dispersive power of a prism – Spectrometer.</li> <li>4. Wavelengths of white light – Spectrometer</li> <li>5. Numerical aperture of an optical fiber</li> <li>6. Photoelectric effect – Planck’s constant</li> <li>7. Field along the axis of a Circular coil</li> <li>8. Wavelength of laser using diffraction grating</li> </ol>			
<b>COURSE OBJECTIVES</b>			
<ol style="list-style-type: none"> <li>1. To introduce the spirit of experiments to verify physics concepts such as reflection, refraction, diffraction and interference on light matter interaction.</li> <li>2. To perform experiments to estimate the materials properties and to check their suitability in science and engineering.</li> <li>3. To familiarize physics concepts and to design instruments and experimental set up for better and accurate measurements.</li> <li>4. To teach and apply knowledge to measure and verify the values of certain constants in physics.</li> </ol>			



<b>MAPPING OF COs with POs</b>			
<b>Course Outcomes</b> On completion of this course, the students will be able to			<b>Programme Outcomes (PO)</b> (Enter Numbers only)
1. Know how to perform experiments to estimate the materials properties and to check their appropriateness			1,2,3,4,5,7,8,10
2. Make experimental setup to verify certain physics concepts of wave and particle nature of light.			1,2,3,4,5,8,9,12
3. Understand the light propagation in fibers, light matter interaction and use of lasers in science and engineering.			1,2,3,5,8,9,14
4. Acquire knowledge, estimate and suggest materials for engineering applications.			1,2,3,10,12,13
<b>COURSE PLAN – PART II</b>			
<b>COURSE OVERVIEW</b>			
<ul style="list-style-type: none"> <li>Physics-II (Code: PHIR12) is a laboratory course offered in the first year to all branches of undergraduate engineering students.</li> <li>The course carries 2 credits.</li> <li>In the first semester (July 2020) all students of circuit branches undergo this course.</li> </ul>			
<b>COURSE TEACHING AND LEARNING ACTIVITIES</b>			( Add more rows)
<b>S.No.</b>	<b>Week/Contact Hours</b>	<b>Topic</b>	<b>Mode of Delivery</b>
1	09.04.2021	Introduction to Basic Instruments	Performing experiment in virtual lab & evaluation
2	16.04.2021	Determination of rigidity modulus of a metallic wire	Performing experiment in virtual lab & evaluation
3	23.04.2021	Radius of curvature of lens – Newton’s Rings	Performing experiment in virtual lab & evaluation
4	30.04.2021	Dispersive power of a prism – Spectrometer	Performing experiment in virtual lab & evaluation
5	07.05.2021	Wavelengths of white light – Spectrometer	Performing experiment in virtual lab & evaluation
6	21.05.2021	Numerical aperture of an optical fiber	Performing experiment in virtual lab & evaluation
7	28.05.2021	Photoelectric effect – Planck’s constant	Performing experiment in virtual lab & evaluation
8	04.06.2021	Field along the axis of a Circular coil	Performing experiment in virtual lab & evaluation
9	11.6.2021	Wavelength of laser using diffraction grating	Performing experiment in virtual lab & evaluation



10	18.06.2021	Compensation Practical	Performing experiment in virtual Lab & evaluation
11	25.06.2021	Clarifications	Performing experiment in virtual Lab
12	25.06.2021	Quiz	Online test

**COURSE ASSESSMENT METHODS** (shall range from 4 to 6)

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Assessment – I	23 <sup>th</sup> April, 2021	4 Hrs.	15
2	Assessment – II	7 <sup>th</sup> May, 2021	4 Hrs.	15
3	Assessment – III	28 <sup>th</sup> May 2021	4 Hrs.	15
4	Assessment – IV	11 <sup>st</sup> June, 2021	4 Hrs.	15
CPA	Compensation Assessment*	18 <sup>th</sup> June, 2021	4 Hrs.	15
5	Quiz	25 <sup>nd</sup> June, 2021	1hr	10
6	Final Assesment	2-15 <sup>th</sup> July 2021	4 Hrs.	30

**\*Mandatory; refer to guidelines on page 5**

**COURSE EXIT SURVEY**

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

- Conduct the viva-voce for every experiment at the end of each practical class.
- Performance in the assessment methods.
- Questionnaire about the effectiveness of the experience, experiments, and the knowledge gained.
- Final assessment could be an experiment followed viva-voce on the theory and practice of the given experiment etc.

**COURSE POLICY** (including compensation assessment to be specified)

**MODE OF CORRESPONDENCE (email/ phone etc)**

- Both e-mail ([vasanthi@nitt.edu](mailto:vasanthi@nitt.edu)) and phone/mobile (9443650539).

**COMPENSATION ASSESSMENT POLICY**

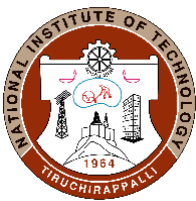
- It is a practical examination with duration of 04 Hrs. Appropriate weightage will be calculated.

**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, IF ANY**

**Books for References**

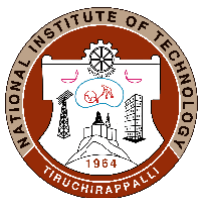
1. Physics Laboratory Manual, Department of Physics, National Institute of Technology Tiruchirappalli (2018).
2. Practical Physics, R.K. Shukla, Anchal Srivastava, New age international (2011).
3. B.Sc. Practical Physics, C.L Arora, S. Chand & Co. (2012).

**FOR APPROVAL**

**Course Faculty**  
Dr. V. Vasanthi

**CC-Chairperson**

**HOD**



**Guidelines**

- a) The number of assessments for any theory course shall range from 4 to 6.
- b) Every theory 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.
- d) The passing minimum shall be as per the regulations.

<b>B.Tech. Admitted in</b>				<b>P.G.</b>
<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	
35% or (Class average/2) whichever is greater.		(Peak/3) or (Class Average/2) whichever is lower		40%

- 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.