



DEPARTMENT OF PHYSICS

COURSE PLAN – PART I			
Name of the programme and specialization	B.Tech. Instrumentation and Control Engineering (ICE)		
Course Title	PHYSICS – II		
Course Code	PHIR12	No. of Credits	02
Course Code of Pre-requisite subject(s)	NIL		
Session	July 2020 (2020-2021)	Section (if, applicable)	B
Name of Faculty	Dr. S. Manivannan	Department	PHYSICS
Official Email	ksmani@nitt.edu	Telephone No.	+91-431-2503616
Name of Course Coordinator(s) (if, applicable)	Dr. R. Sankaranarayanan		
Official E-mail	sankar@nitt.edu	Telephone No.	+91-431-2503609
Course Type (please tick appropriately)	Core course <input checked="" type="checkbox"/> Elective course <input type="checkbox"/>		
Syllabus (approved in BoS)			
Laboratory Experiments <ol style="list-style-type: none"> 1. Torsional pendulum with ring 2. Numerical aperture of an optical fiber 3. Calibration of voltmeter – Potentiometer 4. Field along the axis of a circular coil 5. Wavelength of a laser using diffraction grating 6. Dispersive power of a prism – Spectrometer 7. Wavelength of mercury spectrum – Spectrometer 8. Radius of curvature of lens – Newton’s rings 			
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. 4. To teach and apply knowledge to measure and verify the values of certain constants in physics. 			
MAPPING OF COs with POs			
Course Outcomes	On completion of this course, the students will be able to		Programme Outcomes (PO) (Enter Numbers only)
1. know how to calibrate a galvanometer and convert it into a current and voltmeters.			1, 2, 5, 6, 9
2. make experimental setup to verify certain physics concepts of wave and particle nature of light.			1, 2, 5, 6, 9
3. understand the light propagation in fibers, light matter interaction and use of lasers in science and engineering.			1, 2, 5, 6, 9
4. acquire knowledge, estimate and suggest materials for engineering applications.			1, 2, 5, 6, 9

**COURSE PLAN – PART II****COURSE OVERVIEW**

- Physics-II (Code: PHIR12) is a laboratory course offered in the first year to all branches of undergraduate engineering students.
- The course carries 2 credits.

COURSE TEACHING AND LEARNING ACTIVITIES

S.No	Week	Topic	Mode of Delivery
1.	12 th Dec. 2020	Introduction to Physics Laboratory and Laboratory Manual	Online virtual mode-MS-Teams
2.	14 th Dec. 2020	Experiment 1 – Wavelength of a laser using diffraction grating	Online virtual mode-MS-Teams
3.	21 st Dec. 2020	Experiment 2– Numerical aperture of an optical fiber	Online virtual mode-MS-Teams
4.	28 th Dec. 2020	Spectrometer Demonstration- LC, initial adjustments, etc.	Online virtual mode-MS-Teams
5.	4 th Jan. 2021	Experiment 3– Dispersive power of a prism – Spectrometer	Online virtual mode-MS-Teams
6.	11 th Jan. 2021	Experiment 4– Wavelength of mercury spectrum – Spectrometer	Online virtual mode-MS-Teams
7.	18 th Jan. 2021	Experiment 5–Torsional pendulum with ring	Online virtual mode-MS-Teams
8.	25 th Jan. 2021	Experiment 6– Radius of curvature of lens – Newton’s rings	Online virtual mode-MS-Teams
9.	1 st Feb. 2021	Experiment 7 – Field along the axis of a circular coil	Online virtual mode-MS-Teams
10.	08 th Feb. 2021	Experiment 8– Calibration of voltmeter – Potentiometer	Online virtual mode-MS-Teams
11.	15 th Feb. 2021	Compensation Laboratory	Online virtual mode-MS-Teams
12.	As per NITT schedule	Semester Examination/Practical	Online virtual mode-MS-Teams

COURSE ASSESSMENT METHODS (shall range from 4 to 6)

S.No.	Mode of Assessment	Week/Date	Durati on	% Weightage
1	Assessment – I (Expt. 1-8; All the lab will be considered)	14 th Dec. 2020 - 15 th Feb. 2021	3 h each	70
2	Semester Examination- online virtual mode	As per NITT schedule	3 h	30
			Total	100



COURSE EXIT SURVEY

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

- Performance in the assessment methods.
- Questionnaire about the effectiveness of the delivery method, topics and the knowledge gained will be done by the Academic office/MIS, NITT.

COURSE POLICY

MODE OF CORRESPONDENCE (email/ phone etc)

Faculty can be contacted through office phone (0431-2503616)/e-mail (ksmani@nitt.edu) or in MS-Teams during the class hours for further discussions and clarifications on a mutually convenient time.

COMPENSATION ASSESSMENT POLICY

- It is a practical examination with duration of 03 h for 70/8 (8.75) % weightage only.

ATTENDANCE POLICY

- At least 75% attendance in each course is mandatory and or as per NITT guidelines.
- Students with less than 65% of attendance shall be prevented from writing the Semester Examination/Practical and shall be awarded 'V' grade.

ACADEMIC DISHONESTY & PLAGIARISM


- NITT guidelines will be applicable and will be followed.
- 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- Due to COVID-19 amendments if any from NIT-T will be applicable and will be followed.

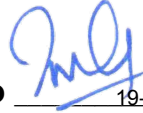
Books for References

1. Physics Laboratory Manual, Department of Physics, National Institute of Technology Tiruchirappalli (2019-20). It can be downloaded from <https://www.nitt.edu/home/academics/departments/physics/programmes/BTech/PhysicsLabManual-2019-20.pdf>
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.S. Manivannan)

CC- Chairperson 
V Sridevi

HOD  19-01-2021



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