NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

DEPARTMENT OF PHYSICS

COURSE PLAN – PART I			
Name of the programme and specialization	**I SEMESTER - B.Tech. COMPUTER SCIENCE & ENGINEERING**		
Course Title	**PHYSICS – II**		
Course Code	**PHIR12**	**No. of Credits**	**2**
Course Code of Pre-requisite subject(s)	**NIL**		
Session	**July 2019**	**Section (if, applicable)**	**A**
Name of Faculty	**Dr. M. Ashok**	**Department**	**PHYSICS**
Official Email	**ashokm @nitt.edu**	**Telephone No.**	**NIL**
Name of Course Coordinator(s) (if, applicable)	**Dr. K. Viswanathan Iyer**		
Official E-mail	**kvi@nitt.edu**	**Telephone No.**	**-Nil-**
Course Type (please tick appropriately**)**	[Y] **Core course**	[ ] **Elective course**	

Syllabus (approved in BoS)

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 a lens – Newton's rings

COURSE OBJECTIVES

1. To determine the rigidity modulus of the material of a wire and moment of inertia of annular ring.
2. To determine the numerical aperture (measure of light carrying capacity) of a fiber cable
3. To calibrate the high range voltmeter using a potentiometer and a standard cell.
4. To determine the horizontal component of earth's magnetic induction B and magnetic moment of a bar magnet using field along the axis of a current carrying coil apparatus with deflection magnetometer.
5. To determine the refractive index of material of the prism using mercury light source and hence to determine the dispersive power of the prism.

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.	**2, 3**
2.To make experimental setup to verify certain physics concepts of wave and particle nature of light.	**2, 3, 8**
3. Understand the light propagation in fibers, light matter interaction and use of laser sin science and engineering.	**2, 3**
4.Acquire knowledge, estimate and suggest materials for engineering applications	**2, 3, 8**

COURSE PLAN – PART II

COURSE OVERVIEW

The Physics-II (Code: PHIR12), a laboratory course is offered in the first semester to part of the engineering branches.
- The course paper has 2 credit.

COURSE TEACHING AND LEARNING ACTIVITIES (Add more rows)

S.No.	Week/Contact Hours	Topic	Mode of Delivery
1.	21st Aug. 2019	Determination of rigidity modulus of a metallic wire - Numerical aperture of an optical fiber - Field along the axis of a Circular coil Calibration of Voltmeter–Potentiometer	Demonstration and Hands-on training
2.	28th Aug. 2019	Experiment – 1	Assessments and Hands-on training
3.	04th Sep.2019	Experiment – 2	Assessments and Hands-on training
4.	18th Sep. 2019	Experiment – 3	Assessments and Hands-on training
5.	25th Sep.2019	Experiment – 4	Assessments and Hands-on training
6.	09th Oct. 2019	-	Demonstration and Hands-on training

		- Dispersive power of a prism – Spectrometer. - Wavelength of laser using diffraction grating. - Radius of curvature of Lens-Newton's Rings - Wavelengths of white light – Spectrometer.	
7.	16th Oct. 2019	Experiment – 5	Assessments and Hands-on training
8.	23rd Oct. 2019	Experiment – 6	Assessments and Hands-on training
9.	30th Oct. 2019	Experiment – 7	Assessments and Hands-on training
10.	06th Nov.2019	Experiment – 8	Assessments and Hands-on training
11.	13th Nov.2019	Compensation Practical	Assessments and Hands-on training

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

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Assessment – I	04th Sep.2019	4 Hrs.	20
2	Assessment – II	25th Sep.2019	4 Hrs.	20
3	Assessment – III	5rd Nov. .2019	4 Hrs.	20
CPA	Compensation Assessment*	13th Nov.2019	4 Hrs.	20
4	Final Assesment	20th Nov.2019	4 Hrs.	40

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

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 Lab, topics and the knowledge gained

COURSE POLICY (including compensation assessment to be specified)

MODE OF CORRESPONDENCE (email/ phone etc)
The faculty members can be contacted in person for any discussions and clarifications at cabin # 203 and #215 in the first floor of OJAS building on a mutually convenient time.

Email: ashokm@nitt.edu

COMPENSATION ASSESSMENT POLICY
Those who are absent for Assesments, on genuine grounds, shall be given an opportunity only once for the retest with the prior permission of the concerned faculty member and Head of Physics Department. The retest shall be conducted before the end semester exam. The Compensation Assessment will be conducted for 20 marks for one hour

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 the 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

The marks for laboratory sessions shall be awarded based on independent experiments, observation, accuracy, etc.
A student has to score a minimum of 35 % marks or Xavg/2 (whichever is higher) to get a pass. Those who fail in the course can appear for the re-assessment exam. The laboratory and internal marks shall be considered till his programme duration.
Any misbehavior, indiscipline in the classroom/laboratory/exam hall will be dealt with seriously. In the worst case of misbehavior/malpractice, the departmental disciplinary committee is empowered to impose penalties appropriate and proportionate to the offence.
The lecture materials such as power point presentations, problems and video lectures can be received from the faculty members

ADDITIONAL INFORMATION, IF ANY

Books for References

1. PhysicsLaboratoryManual,DepartmentofPhysics,NationalInstituteofTechnology Tiruchirappalli(2018).
2. PracticalPhysics,R.K.Shukla,AnchalSrivastava,Newageinternational(2011).
3. B.Sc.PracticalPhysics,C.LArora,S.Chand&Co.(2012).

FOR APPROVAL

CourseFaculty_____CC- Chairperson_____ HOD_____

Guidelines

a) The number of assessments for any theory course shall range from 4 to6.

b) Every theory course shall have a final assessment on the entire syllabus with at least 30% weightage.

c) Onecompensationassessmentforabsenteesinassessments(otherthanfinalassessment) is mandatory. Only genuine cases of absence shall beconsidered.

d) The passing minimum shall be as per theregulations.

B.Tech. Admitted in				P.G.
2018	2017	2016	2015	
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 thecourses.

f) Absolute grading policy shall be incorporated if the number of students per course is less than10.

g) Necessarycareshallbetakentoensurethatthecourseplanisreasonableandisobjective.