DEPARTMENT OF PHYSICS

NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE PLAN – PART I			
Name of the programme and specialization	M.Sc. Physics		
Course Title	GENERAL PHYSICS LABORATORY		
Course Code	PH 659	No. of Credits	2
Course Code of Pre-requisite subject(s)	NIL		
Session	July 2018	Section (if, applicable)	NIL
Name of Faculty	Dr. R. Nagalakshmi	Department	Physics
Email	nagalakshmi@nitt.edu	Telephone No.	0431-2503615
Name of Course Coordinator(s) (if, applicable)	Dr. M. C. Santhoshkumar		
E-mail	santhoshmc@nitt.edu	Telephone No.	0431-2503611
Course Type	Core course		

Syllabus (approved in BoS)- List of Experiments

1. Determination of Planck's constant- Photoelectric effect
2. Half shade polarimeter- specific rotation of liquid.
3. Heat capacity of solids-Calorimeter
4. Velocity of sound in air- Kundt's tube experiment
5. Michelson interferometer
6. Determination of Rydberg constant using hydrogen spectrum
7. Hall Effect- Determination of Hall Coefficient and Carrier concentration
8. Determination of magnetic susceptibility- Gouy's balance
9. Electron Spin Resonance- Determination of 'g' factor
10. Measurement of wavelength of LASER, refractive index of a material and thickness of hair using diffraction grating.
11. Cornu's interference method- Determination of Young's Modulus of beam.
12. GM counter- Plateau and optimal operating voltage of GM counter for various

radioactive source

13. GM counter- Efficiency of GM counter for various radioactive source
14. GM counter- Half life of Ba-137

COURSE OBJECTIVES

To introduce basic concepts of physics through hands on experience and impart experimental skills to students

COURSE OUTCOMES (CO):

The student will be able to understand the fundamental physics behind many scientific discoveries through hands on experience

COURSE PLAN – PART II

COURSE OVERVIEW

To introduce basic concepts of physics through hands on experience and impart experimental skills to students

COURSE TEACHING AND LEARNING ACTIVITIES

S. No.	Week/Contact Hours	Topic	Mode of Delivery
1	21/08/2018	Demonstration Class	Entire class is grouped into 11 batches with two in each: one experiment / batch / week
2	**28/08/2018**	(a) Determination of Planck's constant- Photoelectric effect (b) GM counter- Plateau and optimal operating voltage of GM counter for various radioactive source (c) GM counter- Efficiency of GM counter for various radioactive source	
3	**29/08/2018**	Half shade polarimeter- specific rotation of liquid.	
4	**05/09/2018**	(a) Heat capacity of solids-Calorimeter (b) GM counter- Half life of Ba-137	
5	**11/09/2018**	Velocity of sound in air- Kundt's tube experiment	
6	**12/09/2018**	Michelson interferometer	

7	**18/09/2018**	Determination of Rydberg constant using hydrogen spectrum	
8	**19/09/2018**	Determination of Hall Coefficient	
9	**25/09/2018**	Determination of magnetic susceptibility- Gouy's balance	
10	**26/09/2018**	Electron Spin Resonance- Determination of 'g' factor	
11	**09/10/2018**	Measurement of wavelength of LASER, refractive index of a material and thickness of hair using diffraction grating	
12	**10/10/2018**	Cornu's interference method- Determination of Young's Modulus of beam.	
13	**16/10/2018**	Repetition class (Compensation)	
14	**17/10/2018**	Repetition class (Compensation)	
15	**23/10/2018**	Model examination	
16	**24/10/2018**	Model examination	
17	**30/10/2018**	Semester examination (Final)	
18	**31/10/2018**	Semester examination (Final)	

COURSE ASSESSMENT METHODS (shall range from 4 to 6)

S. No.	Mode of Assessment	Week/Date	Duration	% Weightage

1	Internal Assessment	Refer course teaching and learning activities table.	3 hrs / experiment	75
2	External Assessment (Final Assesment)	Semester examination- One experiment /student	3 hrs	25
CPA Compensation Assessment*				
3	Repetition Classes	Refer course teaching and learning activities table.		

***mandatory; refer to guidelines on page 4**

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

Feed backs will be obtained from students after the completion of internal assessments

COURSE POLICY (preferred mode of correspondence with students, compensation assessment policy to be specified)

Attendance : Mandatory (Attendance register will be maintained). 75% attendance is Mandatory. Retest for internal assessments will be conducted on genuine grounds

Academic honesty: Obedience and discipline, also free to express their genuine thoughts, doubts and encourages discussions.

MODE OF CORRESPONDENCE (email/ phone etc)

e-mail/phone

COMPENSATION ASSESSMENT POLICY

Two repetition classes will be given at the end of the course as outlined in course teaching and learning activity table

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

The course teacher is available for discussion and clarification during their free times.
Extra classes may also be conducted based on the necessity

FOR APPROVAL

Dr. R. Nagalakshmi	Dr. M.C.Santhoshkumar	Dr. J. Hemalatha
Course Faculty	CC-Chairperson	HOD

Guidelines:

a) The number of assessments for a course shall range from 4 to 6.

b) **Every 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.	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.