



(Integrated Bachelor-Masters Programme)
IBMP (B Sc.- M Sc. Applied Physics) Semester - II

Course Code	IS02CPHY52	Title of the Course	Foundations in Physics (Laboratory Course)-II
Total Credits of the Course	02	Hours per Week	01

Course Objectives:	<ol style="list-style-type: none">1. To provide a hands on training on the various topics covered in the theoretical course on foundations in physics-II2. To provide practical training while designing and doing experiment.3. To Provide scientific methodology for the Design / Plan of the experiment, Method of scientific data collection, Analysis and Conclusion.4. To train how to write a report of the scientific study through journal report writing.
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Course Content		
Unit	Description (any 06 out of 08)	Weightage* (%)
1.	Photo electric effect	17%
2.	Study of atomic levels using Frank Hertz experiment	17%
3	Determination of velocity of light	17%
4.	Polarimeter - optical activity	17%
5.	Determination of Rydberg constant using Balmer series of hydrogen light source	17%
6.	Determination of the refractive index of a medium using total internal reflection	17%
7.	Determination of divergence and wavelength of a laser beam.	17%
8.	I-V characteristic of a laser diode.	17%

Teaching-Learning Methodology	Hands on training through Laboratory sessions. Learning the theoretical concepts by doing. Use, functioning and application of various equipments and components used for Practical skills.
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	Use and assembly of various laboratory equipments for the specific experimental task.
2.	Learn the fundamentals of physics by performing experiments
3.	Practice scientific methodology while designing the experiment
4.	Learn the method of data collection and analysis
5.	Draw conclusions while stating the experimental results
6.	Practice how to write a scientific report of a scientific study through journal writing.

Suggested References:	
Sr. No.	References
1.	Advanced Physics Laboratory Manual, University of Notre Dame, 2008 Edited by J.W. Hammer
2.	Experiments in Physics, General Physics I Lab, Columbia University, 2019
3.	PHYSICS LABORATORY MANUAL for First semester of B.E. Programme BIRLA INSTITUTE OF TECHNOLOGY, Ranchi, India
4.	Engineering Physics Laboratory Manual By Dr.G.Narsinga Rao, Dr.V.Prashanth Kumar Dr.G.Srinivas, Ch.Hemalatha, N.Ramesh, Md Parvez Ahmed; Marri Laxman Reddy Inst. of Technology and Management, 2017
5.	Refractive index measurement using total internal reflection Edward Richard Van Keuren 2005 <i>American Association of Physics Teachers</i> . DOI: 10.1119/1.1866099#
6.	





On-line resources to be used if available as reference material

On-line Resources

https://advlabs.aapt.org/wiki/Five_Modern_Physics_Experiments

