

10.	Reference Books: 1. HRW: Fundamental of Physics Halliday, Resnick and Walker and Krane 9th Edition 2. HCV: H.C. Verma, Concepts of Physics-Part I (Second Reprint of 2020) Bharati Bhavan Publishers and Distributors 3. HP: H. S. Hans and S. P. Puri, Mechanics, 2nd ed, Tata McGraw Hill.	
	Additional Reference Books: 1. Theoretical Mechanics, M.R. Spiegel, 2006, Tata McGraw Hill. 2. Mechanics, D.S. Mathur, S. Chand and Company Limited, 2000	
11.	Individual Passing in Internal and External Examination	
12.	Internal Continuous Assessment (40%) (20 Marks)	External Assessment, (60%) (30 Marks)
	Continuous Evaluation through: Quizzes, Class Tests, presentation, project, role play, creative writing, assignment etc. (at least 3)	Evaluation: through Exam at the End of the Semester / Term.
13.	Format of Question Paper for Physics Minor Term End Examination for 30 Marks: Duration of the Term End Examination: One Hour	
	Unit - I (15 Marks)	Q.1 A) Attempt any Two 10 Marks i) Theory ii) Theory iii) Theory iv) Theory B) Attempt any One 05 Marks i) Problem / Theory ii) Problem
	Unit – II (15 Marks)	Q.2 A) Attempt any Two 10 Marks i) Theory ii) Theory iii) Theory iv) Theory B) Attempt any One 05 Marks i) Problem / Theory ii) Problem

Name of the course: Physics Minor Practical Course –USPHMNP1 (MN - I)

Sr. No.	Heading	Particulars
1.	Description the course: (Including but not limited to)	Introduction, Relevance, Usefulness, Application, Interest, Connection with other courses, Demand in the Industry, Job Prospects etc.
2.	Vertical:	Major / <u>Minor</u> / Open Elective / Skill Enhancement / Ability Enhancement / Indian Knowledge System
3.	Type:	Practical
4.	Credits:	2 credits (1 credit = 15 Hours for Theory or 30 Hours of Practical work in a Semester)
5.	Hours	60 Hours
6.	Marks Allotted:	50 Marks
7.	Course Objectives (CO): The students are expected to:	
	CO 1	learn the skills while performing experiments.

	CO 2	know how to use the apparatus without fear & hesitation.
	CO 3	learn the concepts of physics theory concepts and their practical application.
	CO 4	learn the errors and their estimation.
8.	Course outcomes (OC): After successful completion of this course, the students will be able to:	
	OC 1	understand & practice the skills while performing experiments.
	OC 2	understand the use of apparatus and their use without fear & hesitation.
	OC 3	correlate the physics theory concepts to practical application.
	OC 4	understand the concept of errors and their estimation.
9.	<u>List of Experiments</u>	
	1. To determine modulus of rigidity η using Flat spiral spring 2. To determine wavelength of light using cylindrical obstacle 3. Determination of Dispersive power of prism using spectrometer 4. To determine Young's modulus Y using Flat spiral spring 5. Determination of acceleration due to gravity g using Kater's pendulum 6. Log Decrement using Simple pendulum 7. Figure of merit of a mirror galvanometer 8. Determination of R.I. of liquid by laser 9. LCR series resonance 10. LCR Parallel resonance 11. Passive (RC) low pass filter 12. Passive (RC) High pass Filter 13. Passive (RC) Band pass 14. To determine the surface tension of a liquid using capillary rise method	
	<u>Skill experiments: (Minimum Four Experiments) will be conducted, for example</u>	
	1. To find least count of different types of optical instruments 2. To calculate and measure values of passive components 3. To find percentage tolerance of different types of passive components 4. To demonstrate an experiment and explain principles of Physics 5. To prepare chart for and explain the devices /components used for experiments. 6. Execute a short experiment which will showcase either innovation and / or different methods to the satisfaction of teacher in-charge of practical. 7. Any other skill experiment related to syllabus	
	Note: Teacher should follow the above guidelines to conduct skill experiment	
	Reference Books:	
	1. Advanced course in Practical Physics D. Chattopadhyaya, P. C. Rakshit & B Saha. (6th Edition)Book and Allied Pvt. Ltd. 2. B. Sc. PRACTICAL Physics – Harnam Singh S. Chand & Co. Ld. 2001 3. B.Sc. Practical Physics – C. L Arora (1st Edition) -2001 S. Chand and Co Ltd.	
	Additional Reference Books:	
	1. A test book of advanced practical PHYSICS _ SAMIR Kumar Ghosh, New Central BookAgency (3rd edition) 2. Practical Physics CL Squires (3rd Edition) Cambridge University 3. University Practical Physics – DC Tayal. Himalaya Publication 4. Advanced Practical Physics – Worsnop & Flint.	
	• Minimum 10 experiments from the list of experiments and minimum 04 skill experiments must be completed and reported in the journal, in the Third Semester. Certified Journal is a must, to be eligible to appear for the semester end practical examination.	

	• All the measurements and readings should be written with proper units in SI system only. • After completing the required number of experiments in the semester and recording them in journal, student will have to get their journal certified and produce the certified journal at the time of practical examination to be eligible to appear in the Semester End Practical Examination. General Instructions: • For practical examinations, the learner will be examined in One experiment from the list of experiments. • Evaluation in viva voce will be based on regular experiments and skill experiments. • A candidate will be allowed to appear for the semester end practical examination only if the candidate submits a certified journal at the time of practical examination of the semester or a certificate from the Head of the Department / Institute to the effect that the candidate has completed the practical course of that semester of S.Y.B. Sc. Physics as per the minimum requirement. Note: • The questions on slips for the same should be framed in such a way that candidate will be able to complete the task within the specified time. • While evaluating practical, weightage should be given to circuit / ray diagram, observations, tabular representation, experimental skills, procedure, graph, calculation and result. • The skill of doing the experiment and understanding physics concepts should be more important than the accuracy of final result.																								
10.	Passing standards for Practical: • Individual Passing in Internal and External Examination																								
11.	Scheme of Examination: Semester End Practical Examination: • The duration of Each Experiment in Semester End External Practical Examination will be of Two hours. • The Semester End External Practical Examination will be for 30 marks as per the marking scheme given below: <table><tr><th>Sr. No.</th><th>Activity</th><th>Total 30 Marks</th></tr><tr><td>1</td><td>One Experiment</td><td>20 Marks</td></tr><tr><td>2</td><td>Certified Journal</td><td>05 Marks</td></tr><tr><td>3</td><td>Viva</td><td>05 Marks</td></tr></table> Internal Practical Examination: • The duration of Internal Practical Examination per experiment will be of Two hours. • The Internal Practical Examination Pattern for 20 marks (During the Semester), will be as per the marking scheme given below: <table><tr><th>Sr. No.</th><th>Activity</th><th>Total 20 Marks</th></tr><tr><td>1</td><td>Skill testing related any one Experiment</td><td>10 Marks</td></tr><tr><td>2</td><td>Overall performance</td><td>05 Marks</td></tr><tr><td>3</td><td>Viva-Voce</td><td>05 Marks</td></tr></table>	Sr. No.	Activity	Total 30 Marks	1	One Experiment	20 Marks	2	Certified Journal	05 Marks	3	Viva	05 Marks	Sr. No.	Activity	Total 20 Marks	1	Skill testing related any one Experiment	10 Marks	2	Overall performance	05 Marks	3	Viva-Voce	05 Marks
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