

Ahmednagar Jilha Maratha Vidya Prasarak Samaj's
New Arts, Commerce and Science College
Ahmednagar (Autonomous)
(Affiliated to Savitribai Phule Pune University, Pune)



National Education Policy (NEP)
Choice Based Credit System (CBCS)

Programme Framework and Syllabus for

Skill Enhancement Courses: Physics
कौशल्य वृद्धी अभ्यासक्रम: भौतिकशास्त्र

Implemented from

Academic Year 2024-25

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Introduction of Skill Enhancement Courses: Physics

As per the guidelines of the University Grant Commission (UGC) and Savitribai Phule Pune University (SPPU), Pune we have formulated the curriculum of Skill Enhancement course (SEC) under the National Education Policy – 2020 (NEP-2020). As per the motive of the NEP – 2020, student should acquire skills during the academic program. The NEP - 2020 aims to bridge the gap between academia and industry by promoting skill development programs. Collaborations between universities and industries will be strengthened to ensure graduates possess the practical skills demanded by the job market, fostering a skilled workforce.

For the fulfilment of the above mentioned objective we have formulated syllabus the SEC course in the Physics. Skills acquire during this programme will certainly help students to pursue carrier in the field of science. These skill will help students to make carrier in the research as well as the industries. While designing curriculum, we aimed at imparting practical skills, hands on training, soft skills, etc. in order to enhance the self confidence among the students. This trigger to self confidence certainly help for the employability.

Skill Enhancement Courses: Framework and Course Distribution:
Subject: Physics

Sr. No.	Year	Semester	Level	Course Type	Course Code	Title	Credits
1.	I	II	5.0	SEC-01	SEC-PH 01P	Basic Skills in Physics Laboratory.	02
2.	II	III	5.5	SEC-02	SEC-PH 02P	Physics Workshop Skill	02
3.	II	IV	6.0	SEC-03	SEC-PH 03P	Radiation Safety	02
Total							06

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Skill Enhancement Courses: Physics

Title of the Course: Basic Skills in Physics								
Year: I				Semester: II				
Course Type	Course Code	Credit Distribution		Credits	Allotted Hours	Allotted Marks		
		Theory	Practical			CIE	ESE	Total
SEC-01	SEC-PH 01P	00	02	02	60	15	35	50

Learning Objectives:

1. Develop measurement skills and introduction to experimental techniques.
2. Arrange the apparatus as per the requirements of the aims and objectives of the experiment.
3. Demonstrate the procedure to perform the experiments and the skills required for the particular experiment.
4. Perform the experiment, tabulate the data and obtain the result.
5. Explain the theory behind the formulae used.

Course Outcomes (Cos)

1. Understand & practice the skills while performing experiments.
2. Understand the working of apparatus and their use without fear & hesitation.
3. Correlate the physics theory concepts to practical application.
4. Understand the concept of errors and their estimation.
5. Demonstrate quantitative problem solving skills.

Detailed Syllabus: Any 12 Experiments

Sr. No.	Title of Experiment
1.	Measurement of inner and outer diameter of cylindrical pipe using vernier calliper.
2.	Measurement of diameter of different wires using micrometer screw gauge.
3.	Measurement of diameter of capillary tube using travelling microscope.
4.	Determine the Young's modulus of a flat spiral spring .
5.	Determine the resistance of a given resistor and capacitance of the given capacitor.
6.	Measurement of voltage(AC / DC) and check the continuity of wires using digital multimeter.
7.	Forward bias I-V characteristics of diode.
8.	Determine fill factor of Solar cell.
9.	Find force constant by plotting a graph between load and extension of helical spring

10.	Study the dependence of resistance on intensity of light (using LDR)
11.	Study the relation between the resonating length of a given wire and tension for constant frequency using sonometer.
12.	Verify Newtons Law of Cooling using Calorimeter.
13.	Measure angle of prism using spectrometer.
14.	Study the divergence of laser beam

Activity: Study tour visit report / mini project / science exhibition participation or any other activity equivalent to **Two** practicals.