CLUSTER UNIVERSITY SRINAGAR

SYLLABUS (FYUP UNDER NEP 2020)

Offered By Department Of PHYSICS

Semester 1st Skill Enhancement Course (SEC)

Course Title: Measuring Skills in Physics-I

Course Code: UGPHY22S102 **Max. Marks 100**
Credits: 4 (Theory: 1, Practical: 3) **Theory External: 15; Min Marks: 06**
Contact Hrs: 105 (Theory: 15, Practical: 90) **Theory Internal (Continuous Assessment): 10 Marks, Min Marks: 04**
Practical Experimental Basis= 45 Marks, Min. Marks: 18
Practical Internal (Continuous Assessment): 30 Marks, Min. Marks: 12

Objectives:

The objective of the skill course is to provide the necessary learning technique to get acquainted with various kinds of skills involving the knowledge of Physics. This includes various kinds of measurements using some basic apparatus in the laboratory. The experiments are simplified to the extent that these can also be applicable at home. This also enhances the understanding of non-science stream students towards measurements of physical quantities and the importance of same in day-to-day life.

Course Outcomes:

Students especially from non-science backgrounds get an understanding of making measurements, weighing and calculations.
They are able to relate data and make a sense out of it by plotting and graph of the same.
They learn simple skills on computers and smart boards.
They get a hands-on practice with different kinds of basic apparatus in physics.

THEORY:

UNIT I

Importance of Measurements in Physics, System of Units and their inter conversion, Dimensional Analysis, Measurement of Mass, length, Time Significant figures and Rounding Off Powers of 10 and use of decimals, Error estimation and types.

PRACTICALS:

UNIT II

Measuring Equipment l:- To measure lengths, depths and radii of small objects using Vernier Calliper,To find the radius of a thin wire using screw gauge, To find the radius of curvature of concave/convex lens using Spherometer, To find the efficiency of an electric kettle, To find the direction of Magnetic field using a magnetic compass.

UNIT III

Measuring Equipment ll:- To study the working of CRO (Cathode ray Oscilloscope), To learn the use of Magnifying glass, To learn the use of Multimeter, To learn the use of Soldering Apparatus, To learn the use of Astronomical Telescope.

UNIT IV

Measuring Equipment lll:- To study Inverse Square law using Photovoltaic Cell, To study dierent parts of a travelling Microscope, Representation of various types of data using Bar Chart, Line Graph and Pie Chart, Three scales of temperature and relation between them, Graphical representation of 1D, 2D and 3D systems.

Suggested Readings:

1. Physics Volume I & II R. Resnick, D. Halliday & K. S. Krane 5th Edition, 2007, Wiley.
2. B.Sc. Practical Physics, C. L. Arora, S Chand & Company, 2010.