

**Centre for High Energy Physics  
Faculty of Science  
University of the Punjab, Lahore  
Course Outline**



<b>Program</b>	BSCP	<b>Course Code</b>	CPHY 113L	<b>Credit Hours</b>	1
<b>Course Title</b>	<b>Physics Lab I</b>				
<b>Course Introduction</b>					
The course introduces Mechanics with hands on lab experiment in Lab					
<b>Learning Outcomes</b>					
The Lab will cover the experiment in Mechanics. After the completion of the Lab the students will be able to:					
<ol style="list-style-type: none"> <li>1. Verify the various laws of mechanics.</li> <li>2. Learns different techniques of analyzing and presenting scientific data.</li> </ol>					
<b>Course Content</b>					
<b>1</b>	To determine the value of “g” by compound pendulum/Kater’s Pendulum				
<b>2</b>	To study the dependence of Centripetal force on mass, radius, and angular velocity of a body in circular motion				
<b>3</b>	To study the law of conservation of momentum				
<b>4</b>	To study the laws of sliding friction				
<b>5</b>	Determination of moment of inertial of a solid/hollow cylinder and a sphere etc				
<b>6</b>	To study the laws of gyroscope				
<b>7</b>	Modulus of Rigidity by Static & Dynamics Methods (Maxwell’s needle, Barton’s Apparatus)				
<b>8</b>	To study the damping features of an oscillating system using simple pendulum of variable mass.				
<b>9</b>	Measurement of viscosity of liquid by Stoke’s/Poiseuille’s method.				
<b>10</b>	Surface tension of water by capillary tube method.				
<b>11</b>	To determine thermal emf and plot temperature diagram.				
<b>12</b>	Determination of temperature coefficient of resistance of a given wire.				
<b>13</b>	To determine Horizontal/Vertical distance by Sextant.				
<b>14</b>	The determination of wavelength of Sodium lines by Newton’s Rings.				

(Note: Any eight experiments can be performed subject to the availability of apparatus.)

### Teaching Learning Strategies

The instructor is required to give a background of the theory relevant to the experiments, working of the equipment used. They are also required to submit a report including their data, results of fits, plots or results of any analysis method applied.

### Assignments: Types and Number with Calendar

At least two assignments and two quizzes. A course project may also be assigned.

### Assessment

Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. At least fifty percent of the question paper would involve new problems related to the concepts learned in the course. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.