United International **University** (UIU)

School of Science and Engineering
LAB Schedule
Course code: PHY 106/2106, Title: Physics Laboratory
Section: D Trimester: Spring 2021

Classes **:** Sunday (2:30 pm-5:00 pm), Room # Virtual Lab

Course Teacher : Md. Asaduzzaman (MAn)

Counseling **:** Saturday (11.00-2.00 pm), Sunday (11.00-2.00 pm), Tuesday (11.00-2.00 pm), Wednesday (11.00-2.00 pm).

Office room **: 619**

Email **:** asad@ins.uiu.ac.bd

Text Book: 1. PRACTICAL PHYSICS by Dr. Giasuddin Ahmad.

Reference: 1. A Textbook of Practical Physics by Dr. Samir Kumar Ghosh.
2. Practical Physics by R. K. Shukla and Anchal Srivastava.

Quiz: There will be total two quizzes (20 minutes long each) in class.

Test Policy

- All students must attend at the Class Tests, Midterm and Final examination.
- If a student is absent from a Midterm exam, he/she must inform the instructor beforehand and must submit an application with valid documents if he/she should be considered for a retake examination. Otherwise, his/her grade for that examination will be zero.
- A student once appeared at a Midterm will not be allowed to retake the examination again under any circumstances.
- A student absent from a Class test will not be allowed to retake the test under any circumstances.

Course Assessment

1.	Lab Attendance:	10 Marks
2.	Lab Report:	20 Marks
3.	Lab Performance:	10 Marks
4.	Quiz (2 Test):	15 Marks
5.	Midterm (Viva):	25 Marks
6.	Final(Written):	20 Marks
	Total:	100 Marks

- **Midterm viva will be taken after complication of first half of total experiment (i.e.; no of 04 experiments) & Final will be taken after complication of the next half (rest of 04 experiments).**

Course Grade

The following scale will be used to convert numerical grades to letter grade:

Letter Grade	Marks	Grade Point	Letter Grade	Marks	Grade Point
A	90-100	4.0	C+	70-73	2.33
A-	86-89	3.67	C	66-69	2.00
B+	82-85	3.3	C-	62-65	1.67
B	78-81	3.0	D+	58-61	1.33
B-	74-77	2.67	D	55-57	1.00

Course Objective

1. To provide an experimental foundation for the theoretical concepts introduced in the lectures.
2. To familiarize students with experimental apparatus, the scientific method and methods of data analysis so that they will some idea of the inductive process by which ideas are originated.
3. To learn how to write a technical report, that communicates scientific information in a clear and concise manner.

Course Procedure A 180 minutes weekly supervised laboratory work

Attendance Scheme

Attendance %	Number	No of missing class	Obtained number
90-100%	10	1	10
85-89%	9	2	8
80-84%	8	3	7
75-79%	7	4	5
70-74%	6	5	3
65-69%	5	6	2
60-64%	4	7	0
55-59%	3	8	0
51-54%	2	9	0
50 % below	0	10	0

Simulation Method: Website based simulator. Two websites are followed here:

1. https://vlab.amrita.edu/
2. https://phet.colorado.edu/en/simulations/filter?sort=alpha&view=grid

Course Contents (List of experiments):

Exp 1: Verification of Ohm's law by measuring resistance in series and parallel circuits.

Exp 2: Determination of the value of the Acceleration due to Gravity (g) with the help of a compound (bar) pendulum.

Exp 3: Determination of the gravitational acceleration (g) by using a simple pendulum and verification of the formula $T = 2\pi\sqrt{\frac{L}{g}}$.

Exp 4: Determination of the spring constant and effective mass of a given spiral spring.

Exp 5: Verification of Kirchhoff's voltage and current law.

Exp 6: Determination of the radius of curvature of a plano-convex lens by Newton's rings method.

Exp 7: Determination of the frequency of a tuning fork by Melde's apparatus.

Exp 8: Determination of the Young's modulus of the given material bar by non-uniform bending using pin and microscope method.

Exp 9: Determination of the moment of inertia of the given disc using Torsion pendulum by the method of oscillations (Dynamic Method).

Schedule of Allotted Experiment for each Group:

Batch→ Day↓	**Group-1**	**Group-2**	**Group-3**	**Group-4**	**Group-5**
Day-1	**Groping & Discussions**				
Day-2	Expt – 01	Expt – 02	Expt – 03	Expt – 04	Expt – 05
Day-3	Expt – 02	Expt – 03	Expt – 04	Expt – 05	Expt – 06
Day-4	**Quiz-1**				
	Expt – 03	Expt – 04	Expt – 05	Expt – 06	Expt – 07
Day-5	Expt – 04	Expt – 05	Expt – 06	Expt – 07	Expt – 08
Day-6	**Midterm – VIVA**				
Day-7	Expt – 05	Expt – 06	Expt – 07	Expt – 08	Expt – 01
Day-8	Expt – 06	Expt – 07	Expt – 08	Expt – 01	Expt – 02
Day-9	**Quiz-2**				
	Expt – 07	Expt – 08	Expt – 01	Expt – 02	Expt – 03
Day-10	Expt – 08	Expt – 01	Expt – 02	Expt – 03	Expt – 04
Day-11	**Final – WRITTEN (Observation+ Experiment Viva)**				