Department of Physics

College of Science

University of Salahaddin-Erbil

Subject: Properties of Matter Lab.

Course Book – (Year 1)

Lecturer's name: Rozhan Dilshad Haider

Academic Year: 2022/2023

Course Book

1. Course name	**Properties of matter Lab.**
2. Lecturer in charge	**Rozhan D. Haider**
3. Department/ College	**Physics / Science**
4. Contact	**Email: rozhan.haider@su.edu.krd**
5. Time (in hours) per week	**2 hours**
6. Office hours	**To be Return to the schedule on the office door**
7. Course code	
8. Teacher's academic profile	We are three teachers were teaching in properties of matter laboratory.
9. Keywords	Properties of matter, practical physics

10. Course overview:

Everything is matter and matter comes in three different states solid, liquid, and gas. That means that everything is either a solid ,a liquid, or a gas. Each state has properties. One property of all mater is that it takes up space and has mass.

This laboratory consists of two courses, each course have different experiments explain the properties of matter and will introduce students to the foundations of this properties experimentally, therefore the course is intended to cover some of the standard properties of matter .namely, surface tension , coefficient of viscosity , coefficient of rigidity ,and etc.
The course aims to lay the foundational concepts for students who would take up more advanced and specialized topics in later years

11. Course objective:

This knowledge will be applied in more advanced andspecialized topics to be studied in later years.

12. Student's obligation

To get the best of the course, it is suggested that you attend classes as much as possible for all the material discussed in class. Come to class prepared physically and mentally. Before class, read the required lecture for that day, and then read the material again after class discussion of the topics. Lecture's notes are for supporting and not for submitting the reading material including the handouts. Properties of matter is best learned by solving problems. It is your responsibility to review the lecture notes and work on the problems at the end of every chapter in addition to the solved examples. Do not miss class; get notes from someone if you have an unavoidable absence.

13. Forms of teaching

Each student make one experimentally separately and take data then solved mathematically and graphically then compared with theoretical data, after that in next week they make report of their experiment and discussed physically.

14. Assessment scheme

In this way every week they make five experimenst for each course. At the end of the two courses the students are required to do an examinations.

There will be final exam on 30 marks so that the final grade will be based upon the following criteria:

Mean of the exams: 20%, for this lab. Because there are another lab . (Electricity and Magnetism lab.)

Final exam: 30%

15. Student learning outcome:

16. Course Reading List and References:

17. The Topics:	Lecturer's name
First Course	
Determination the acceleration of free fall by means of the simple pendulum	**Week 1**
To verify Hooks law and to determine the extension per unit mass of added load and then determine the gravity	**Week2**
Determination of the velocity of sound by means if resonance tube closed at one end	**Week3**
The fall of a body through aviscous medium to deduce the coefficient of viscosity of the medium	**Week4**
Second Course	
Determine gravitational acceleration using U-shaped tube	**Week1**
Determination of the surface tension of water by the capillary tube method	**Week2**

Experiments with a cantilever	**Week 3**
Determination of the coefficient of rigidity of the rod	**Week 4**
Determination of the moment of inertia of a flywheel	**Week 5**
Note:This syllabus may be subject to changes, i.e. we may take either longer or shorter time to finish a topic, if any changes happened you will be notified well in advance.	
20. Extra notes:	
21. Peer review	