



**Department of General Science**

**College of Basic Education**

**Salahaddin University-Erbil**

**Subject: Magnetism Laboratory**

**Course Book**

**Second Year- 2<sup>nd</sup> Semester**

**Lecturer: Dr. Wala Gazey Dizayee**

**Academic Year: 2022/2023**

# Course Book

<b>1. Course name</b>	<b>Magnetism Laboratory</b>
<b>2. Lecturer in charge</b>	<b>Dr. Wala Gazey Dizayee</b>
<b>3. Department/ College</b>	<b>General Science/Basic Education</b>
<b>4. Contact</b>	e-mail: <a href="mailto:wala.dizayee@su.edu.krd">wala.dizayee@su.edu.krd</a> Tel:
<b>5. Time (in hours) per week</b>	<b>Theory:</b> <b>Practical: 3 hours/week</b>
<b>6. Office hours</b>	
<b>7. Course code</b>	
<b>8. Teacher's academic Profile</b>	
<b>9. Keywords</b>	
<p>This laboratory deals with the most experiments on Electricity and magnetism subjects.</p> <p>The experiments are selected carefully to cover and run in parallel with the theoretical part of the subject of electricity and magnetism.</p> <p>The experiments selected consist of 18 experiments in both DC and AC electrical currents.</p>	
<p><b>11. Course objective:</b></p> <p>Experiment No (1) : Color code resistance</p> <p>Experiment No (2): Verification of ohm's Law</p> <p>Experiment No (3): Ohm's law Parallel combination of resistors</p> <p>Experiment No (4) :Measuring capacitance of capacitor</p> <p>Experiment No (5): to investigate the reactance of capacitance varies with frequency and determine the capacitance of capacitor with constant voltage</p> <p>Experiment No (6): to show the behavior of an inductance in an a.c circuit is analogous to that of a resistor which obeys Ohms law and hence to measure inductance.</p>	

Experiment No (7): investigate how the reactance of an inductor varies with frequency and determine inductance of the inductor.

Experiment No (8): Series resonance frequency

Experiment No (9): To investigate the properties of series resonance circuit.

Experiment No (10): To investigate the parallel of resonance circuit

Experiment No (11): A Simple graphical method for determine both e.m.f and internal resistance of the internal resistance of both

Experiment No (12): A Simple graphical method for determine internal resistance of the voltmeter and e.m.f voltage.

Experiment No (13): Transformation Galvanometer into ammeter

Experiment No (14) : Transformation Galvanometer into voltmeter.

Experiment No (15): The RC time constant

Experiment No (16): Charging and discharging capacitor.

Experiment No (17): RMS value by using Oscilloscope

## 12. Student's obligation

The students shall participate in discussion of the topics and solving practical examples related to the subjects. The exercises will be given to the students as home works. The students will also be asked to prepare reports on selected topics.

## 13. Forms of teaching

Data Show power point presentation and the white board.

## 14. Assessment scheme

### 15. Breakdown of overall assessment and examination

Semesters examination ( two examinations in a year, each 20%).

## 16. Student learning outcome:

This subject is concerned with the experimental part of the subject Electricity and Magnetism. It covers 18 experiments which are expected to cover most of the

theoretical part.

## 16. Course Reading List and References:

### References:

Practical Physics in SI E Armitage. John Murray 1974.London UK.

## 17. The Topics:

Lecturer's name

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Directorate of Quality Assurance and Accreditation

18. Practical Topics (If there is any)	
<p>Exp. No.10: To verify Parallel connections of resistors. Exp. No. 11: The Wheatstone bridge circuit</p> <p>Exp. No. 12: The behavior of a capacitor in an A.C. Circuit. Exp. No. 13: The behavior of inductance in an A.C. Circuit.</p> <p>Exp. No. 14: Conversion of a Galvanometer into a DC Voltmeter Exp. No. 15: Conversion of a Galvanometer into a DC Ammeter</p> <p>Exp. No. 16: Charging a Capacitor</p> <p>Exp. No. 17: Resonance frequency in a Series LC Circuit</p> <p>Exp. No.18: Resonance frequency in a Parallel LC circuit</p>	with Explain how,
<p><b>19. Examinations:</b></p> <p><b>1. <i>Compositional:</i></b> In this type of exam the questions usually starts What are the reasons for...?, Why...?, How....?</p> <p>With their typical answers</p> <p>Examples should be provided</p>	
<p>Directorate of Quality Assurance and Accreditation</p>	

**2. True or false type of exams:**

In this type of exam a short sentence about a specific subject will be provided, and then students will comment on the trueness or falseness of this particular sentence. Examples should be provided

**3. Multiple choices:**

In this type of exam there will be a number of phrases next or below a statement, students will match the correct phrase. Examples should be provided.

**20. Extra notes:**

Here the lecturer shall write any note or comment that is not covered in this template and he/she wishes to enrich the course book with his/her valuable remarks.

**21. Peer review**