



Course Specification

(Bachelor)

Course Title:	Electricity and Magnetism Lab
Course Code:	PHYS26343
Program:	Physics
Department:	Physics
College:	Science
Institution:	University of Bisha
Version:	3
Last Revision Date:	25 July 2023



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A. General information about the course:

1. Course Identification

1. Credit hours:	2
2. Course type	
A. University <input type="checkbox"/>	College <input type="checkbox"/>
Department <input checked="" type="checkbox"/>	Track <input type="checkbox"/>
Others <input type="checkbox"/>	
B. Required <input checked="" type="checkbox"/>	Elective <input type="checkbox"/>
3. Level/year at which this course is offered:	5 th Level / 3 rd year
4. Course general Description	
This course consists of different experiments in the field of electricity and magnetism, as a support for the theoretical courses of electricity and magnetism 1 and 2.	
5. Pre-requirements for this course:	
NA	
6. Co- requirements for this course:	
NA	
7. Course Main Objective(s)	
Analyze and interpret experimental data of electricity and magnetism.	

2. Teaching mode

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	4	100%
2.	E-learning		
3.	Hybrid <ul style="list-style-type: none"> • Traditional classroom • E-learning 		
4.	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	
2.	Laboratory/Studio	60
3.	Field	
4.	Tutorial	
5.	Others (specify)	





Total	60
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B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Recognize the theoretical basis for ten experiments related to electricity and magnetism lab.	K.1	Lectures Solve problems	Written test Reports Homework Quizzes
2.0	Skills			
2.1	Prepare the appropriate equipment for the experiment.	S.2	Laboratory practices	Achievement file laboratory test Reports
2.2	Use the experiment measurements devices correctly.	S.2		
2.3	Analyze and interpret experimental data.	S.2		
2.4	Communicate positively with others.	S.3	Presentation Work group	Reports Presentation
3.0	Values, autonomy, and responsibility			
3.1	Participate in the development of team performance.	V.3	Work group	Reports Presentation

C. Course Content

No	List of Topics	Contact Hours
1.	Resistance measurements using bridges.	6
2.	Galvanometer sensitivity.	6
3.	Charging and discharging capacitor.	6
4.	Determining the capacitance of a parallel plate capacitor.	6
5.	Determining the capacitance using RC circuits.	6
6.	Determining the Inductance using RL circuits.	6
7.	Resonance circuit RLC.	6
8.	The transformer.	6
9.	Helmholtz coils. Or magnetic field on the axis of a circular current loop.	6
10.	The tangent galvanometer. Or the magnetic field of a solenoid.	6
Total		60







Table: The matrix of consistency between the content and the learning outcomes of the course.

	Course Learning Outcomes					
	1.1	2.1	2.2	2.3	2.4	3.1
Topic 1	√	√	√	√	√	√
Topic 2	√	√	√	√	√	√
Topic 3	√	√	√	√	√	√
Topic 4	√	√	√	√	√	√
Topic 5	√	√	√	√	√	√
Topic 6	√	√	√	√	√	√
Topic 7	√	√	√	√	√	√
Topic 8	√	√	√	√	√	√
Topic 9	√	√	√	√	√	√
Topic 10	√	√	√	√	√	√

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Homework, quizzes, reports, and presentation.	1: 15	10 %
2.	Achievement file.	1:15	15 %
3.	Midterm practical exam *	9: 10	25 %
4.	Final practical exam**	End of Semester	50 %

* (20-marks for practical part and 5-marks for the theoretical part)

** (40-marks for practical part and 10-marks for the theoretical part)

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	<ul style="list-style-type: none"> - Experimental Reports. - Supplementary Materials - Physics for Scientists and Engineers, 10th Edition, by Raymond A. Serway, John W. Jewett, BROOKS/COLE CENGAGE Learning, Boston USA, ASIN: B00E6TSR92, (2019).
Supportive References	<ul style="list-style-type: none"> - Fundamentals of Physics Extended, 12th Edition, David Halliday, Robert Resnick, Jearl Walker, Wiley, 2021.
Electronic Materials	<ul style="list-style-type: none"> - Blackboard. - PowerPoint presentations. - Digital library of University of Bisha https://ub.deepknowledge.io/Bisha





Other Learning Materials NA

2. Required Facilities and equipment

Items	Resources
facilities	Classrooms, Physics lab.
Technology equipment	Data show or smart board.
Other equipment	<p>Laboratory equipment.</p> <ol style="list-style-type: none"> 1. Resistance measurements using bridges. 2. Galvanometer sensitivity. 3. Charging and discharging capacitor. 4. Determining the capacitance of a parallel plate capacitor. 5. Determining the capacitance using RC circuits. 6. Determining the Inductance using RL circuits. 7. Resonance circuit RLC. 8. The transformer. 9. Helmholtz coils. 10. Magnetic field on the axis of a circular current loop. 11. The tangent galvanometer. 12. The magnetic field of a solenoid.

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Extent of achievement of course learning outcomes.	Teachers, students.	Direct (Final exams), Indirect (Questionnaire).
Effectiveness of teaching.	Teachers, students.	Indirect (Questionnaire)
Effectiveness of assessment.	Teachers, students.	Indirect (Questionnaire)
Quality of learning resources	Teachers, students.	Indirect (Questionnaire)
Quality of facilities available	Teachers, students.	Indirect (Questionnaire)
Fairness of evaluation	Peer reviewer.	Direct (Final exams reevaluation).

G. Specification Approval Data

COUNCIL /COMMITTEE	College of Science Council
REFERENCE NO.	20
DATE	17 August 2023



