



Course Specification

— (Bachelor)

Course Title:	Electronics Lab
Course Code:	PHYS26346
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:	3
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:	6 th Level / 3 rd year
4. Course general Description	
This course introduces the characteristics of electronic devices, then tackle electronic circuits. Much emphasis is placed on analysis, biasing, and applications.	
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 electronic circuits.	

2. Teaching mode (mark all that apply)

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 electronic circuits lab.	K.2	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.	Forward & Reverse Bias Characteristics of PN Junction Diode and LED-Diode.	6
2.	Zener diode characteristics.	6
3.	Half Wave Rectifier.	6
4.	Full Wave Rectifier.	6
5.	Input & Output Characteristics of BJT-Transistor in Common Emitter (CE) Configuration and h-parameter calculations.	6
6.	Switching Characteristics of BJT-Transistor.	6
7.	Frequency Response of CE Amplifier circuit.	6
8.	Voltage multiplier.	6
9.	Logic gats circuits (and - or - not).	6
10.	Input & Output Characteristics of FET –Transistor Configuration and parameter calculations.	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 - ELECTRONIC DEVICES, 10th Edition, Floyd. Thomas L. Pearson Education, Limited, (2018).
Supportive References	<ul style="list-style-type: none"> - ELECTRONIC DEVICES AND CIRCUIT THEORY, 11th Edition, Boylestad, Robert L. Prentice Hall, (2013). - MICROELECTRONIC CIRCUITS, 7th edition, Kenneth Carless Smith, Adel S. Sedra, Oxford University Press, (2015).
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. Forward & Reverse Bias Characteristics of PN Junction Diode and LED- Diode. 2. Zener diode characteristics. 3. Half Wave Rectifier. 4. Full Wave Rectifier. 5. Input & Output Characteristics of BJT-Transistor in Common Emitter (CE) Configuration and h-parameter calculations. 6. Switching Characteristics of BJT-Transistor. 7. Frequency Response of CE Amplifier circuit. 8. Voltage multiplier. 9. Logic gats circuits (and, or, not). 10. Input & Output Characteristics of FET –Transistor Configuration and parameter calculations.

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



