



Course Specification

— (Bachelor)

Course Title: **Biomechanics**

Course Code: **MPHY26221**

Program: **Medical Physics**

Department: **Physics**

College: **Science**

Institution: **University of Bisha**

Version: **1**

Last Revision Date: 5 September 2023



Table of Contents

A. General information about the course:	3
1. Course Identification.....	3
2. Teaching mode (mark all that apply)	3
3. Contact Hours (based on the academic semester).....	3
B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods	4
C. Course Content	4
D. Students Assessment Activities	5
E. Learning Resources and Facilities	6
1. References and Learning Resources	6
2. Required Facilities and equipment	6
F. Assessment of Course Quality	6
G. Specification Approval Data	7



A. General information about the course:

1. Course Identification

1. Credit hours:	3 (2 Lectures + 1 Laboratory)				
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:	3 rd . Level / 2 nd year				
4. Course general Description					
This course presents the basic knowledge in classical mechanics. Concerned with the study of the linear and circular motion, the laws of force and energy, and momentum.					
5. Pre-requirements for this course (if any):					
NA					
6. Co- requirements for this course (if any):					
NA					
7. Course Main Objective(s)					
Recognize the fundamental of classical mechanics.					

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	30
2.	Laboratory/Studio	30
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	explain laws for linear and circular motion	K1	Lecturing	Quizzes Homework Midterm exam Final exam
1.2	Describe the equilibrium statics, energy, and momentum laws.	K1		
2.0	Skills			
2.1	Solve problems in the classical mechanics.	S1	Solve problems	Quizzes Homework Midterm exam Final exam
2.2	analyze experimental data.	S2	Practices lab	Reports Practical exam
2.3	Communicate positively with others.	S4	Work group	Reports Presentation
3.0	Values, autonomy, and responsibility			
3.1	Ability to work in team effectively.	V3	Work group	Reports Presentation

C. Course Content

No	List of Topics	Contact Hours
1.	Kinematics Distance and Displacement Speed and Velocity Acceleration Experiment #1.	6
2.	Average Velocity or Speed The Acceleration Due to Gravity Independence of Motion in 2D Experiment #2.	6
3.	Force and Newton's Laws of Motion The Concept of Force Kinds of Force Newtonian Gravity Experiment #3.	6



4.	Motion in a Circle Description of Circular Motion Circular Velocity and Acceleration Experiment #4.	6
5.	Centripetal Force Sources of Centripetal Force Experiment #5.	6
6.	Statics Equilibrium Torque The Principle of Moments Experiment #6.	6
7.	Centre of Gravity/Centre of Mass Stability Experiment #7.	6
8.	Energy Work Kinetic Energy Potential Energy Experiment #8.	6
9.	Conservative Forces Conservation of Total Energy Power Experiment #9.	6
10.	Momentum Linear Momentum Newton's Laws and Momentum Collisions Elastic Collisions Experiment #10.	6
Total		60

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Homework, quizzes, reports, and presentation.	1: 10	10 %
2.	First term exam	7: 8	10 %
3.	Second term exam	12: 13	10 %
4.	Practical exam	End of Semester	20 %
5.	Final exam	End of Semester	50 %



E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	Introduction to Biological Physics for the Health and Life Sciences, 2 nd Edition, by Kirsten Franklin et. All, Wiley, 2019.
Supportive References	Physics for Scientists and Engineers, 10 th Edition, by Raymond A. Serway, John W. Jewett, BROOKS/COLE CENGAGE Learning, 2019.
Electronic Materials	- 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	<ol style="list-style-type: none"> 1. Motion in inclined surface. 2. Newton's Laws with Dynamics Cart and Track System. 3. The Physical Pendulum. 4. Circular Motion or Angular Momentum. 5. Yang models.
Technology equipment	Projector or smart board
Other equipment	NA

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.	1
DATE	5 September 2023

