



MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Mechanic physics		Module Delivery
Module Type	Basic		<input type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input checked="" type="checkbox"/> Practical <input checked="" type="checkbox"/> Seminar
Module Code	ZU-SC-FS-1106		
ECTS Credits	5		
SWL (hr/sem)	150		
Module Level	1	Semester of Delivery	
Administering Department	Forensic Science	College	College of Science
Module Leader	Yasir Sabah Abbas	e-mail	Yasirsabah19962023@gmail.com
Module Leader's Acad. Title	lecture	Module Leader's Qualification	M.C.S
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	8/3/2026	Version Number	1.0

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	Semester	
Co-requisites module	None	Semester	



Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims	<ol style="list-style-type: none">1. To describe the evolution of physics science and the relation between physics and forensic science.2. To develop problem solving skills and understanding of mechanic concepts through the application of techniques.3. To provides a link between the Facts and the concepts that the student study and his daily community life.4. To describe the projectile terms in forensic science and its application.5. To describe the difference between the vector quantity and scaler quantity.6. To explain the relation between work, energy, and power7. To understanding of sound and wave motion and its application in evidence.
Module Learning Outcomes	<p>Upon completion of the course, students should be able to:</p> <ol style="list-style-type: none">1. clarify the relationship between science and technology in science eld and its elect on development.2. and linking it to practical life.3. gives the student methodology of scientific thinking and moving him from the basic way of4. learning to a way full of fun and motivation.5. trying to train the student for discovering through developing of the monitoring and analyzing.6. skills.7. gives the student life skills and applicable scientific capabilities.8. develop the concept of modern ways in maintaining the environmental equilibrium practically, and globally.9. Use the mechanics physics in forensic science.



<p>Indicative Contents</p>	<p>Indicative content includes the following.</p> <p>In Our practical life we need to indicate the location of an object whether it is static Or moving, and to determine the location of that object we use what is called "coordinates". There are several types of coordinates that we can apply. as "Rectangular Coordinates" and "polar coordinates". and study the benefit of vector application in our life. [6 hrs]</p> <p>Mechanics is one of the branches in physics that studies the motion, it include two main sections are (Kinematics) a science that describes the objects motion ignoring what causes the motion. (Dynamics) science that cares about Ine causes of motion such as Force and Energy. where first we will get to know the concepts of location, displacement, velocity and acceleration of objects for motion in one dimension and in two dimensions with some appellations) [10 hrs]</p> <p>The scientist physical Isaak Newton built his theory about motion through three laws that are known as Newton's Laws of Motion, where he described the forces influence on the objects motion by these laws and know the difference between the mass and weight. [6 hrs]</p>
	<p>While solving an exercise in motion science (dynamic) it is important to Analyze the forces influencing the object or the system in a correct way, so the object. (Static or dynamic) will be Insulated from its surrounding, then every Foree from the forces influencing it will be clarified, and this method is called free body diagram. [4 hrs]</p> <p>concept of equilibrium, tensional equilibrium, rotational equilibrium, Torque, torque is a vector, couple, center of mass, center of gravity. [10 hrs]</p> <p>Work, Power, Energy and Momentum and type of energy [6 hrs]</p> <p>Clarify the periodic motion, versional motion, simple harmonic motion, the relation between uniform circular motion and simple harmonic motion, simple pendulum, damping simple harmonic motion, wave motion [10 hrs]</p>

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

<p>Strategies</p>	<p>Assessment is based on hand-in assignments, written exam, Case study, Quizzes, seminars, Practical testing, lab, and Online testing.</p>
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Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem)	75	Structured SWL (h/w)	5
Unstructured SWL (h/sem)	75	Unstructured SWL (h/w)	5
Total SWL (h/sem)	150		



Module Evaluation تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	5% (5)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	15% (15)	Continuous	
	Report	1	5% (5)	13	LO # 5, 8 and 10
Summative assessment	Midterm Exam	2 hr	15% (15)	7	LO # 1-7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري محتوي كل اسبوع يجب ان يغطي الوقت المحدد	
	Material Covered



Week 1	Introduction, Vectors, coordinate system and properties of vectors.
Week 2	Analysis of vectors and multiplication of vectors
Week 3	Linear motion, acceleration, linear equation motion with regular acceleration and free fall objects.
Week 4	Motion in two dimensions (motion in plane), projectile and motion in three dimensional.
Week 5	Laws of motion, inertia and mass, newton's Law of motion.
Week 6	free body diagram and Friction
Week 7	Equilibrium, Torque, couple, and center of mass.
Week 8	Work, power, and energy.
Week 9	Momentum and impulse
Week 10	Circular Motion
Week 11	Rotational Motion.
Week 12	Work and Power in rotational motion, and angular momentum
Week 13	Wave, Vibrational Motion and Sound
Week 14	Beats, sound characteristics, ultrasonic waves, Doppler effect
Week 15	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: :Instructions to students, Basic personal needs and other requirements. Writing the account of an experiment, Introduction to graphical representation of experimental data, Errors, their determination and minimization, least square fitting. Units.
Week 2	Lab 2: Forces and Equilibrium
Week 3	Lab 3: Spiral Spring and Hooks Law
Week 4	Lab 4: Spiral Spring: Determination of force constant and effective mass of a spring.
Week 5	Lab 5: Spiral Spring: To deduce the acceleration of free fall from a combination of the static and dynamic experiments.
Week 6	Lab 6: Simple Pendulum and determination of gravitational acceleration (g).
Week 7	Lab 7: The Cantilever experiment
Week 8	Lab 8: The bifilar suspension: Variation of the period of oscilation with the distance between the vertical suspension threads.



Week 9	Lab 9: The bifilar suspension: Variation of Oscillation with length of the suspension threads.
Week 10	Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Recommended Texts	<ul style="list-style-type: none">○ Theory and Problems of College Physics By Frederick Bueche and Eugene Hecht.○ Fundamental of Physics by Halliday, Resnick and Walker	Yes

Grading Scheme

مخطط الدرجات

Group	Grade	التقدي ر	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX - Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F - Fail	راسب ب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.