MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Physics**			**Module Delivery**	
Module Type	**Basic**			☑ **Theory** ☑ **Lecture** ☑ **Lab** ☐ **Tutorial** ☑ **Practical** ☐ **Seminar**	
Module Code	**UREQ111**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Laser and optoelectronics Eng.		**College**	College of Engineering	
Module Leader	Hanaa.m.hadad		e-mail	hanaa.m.hadad@alayen.edu.iq	
Module Leader's Acad. Title	Msc		Module Leader's Qualification	Ph.D.	
Module Tutor	Hanaa.m.hadad		e-mail	hanaa.m.hadad@alayen.edu.iq	
Peer Reviewer Name	Hasnaa M. El-Arwash			Hasnaa.Mohammad@alayen.edu.iq	
Scientific Committee Approval Date			**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		**Semester**	1
Co-requisites module		**Semester**	4

Module Aims, Learning Outcomes and Indicative Contents

Module Objectives

To understand basics for physics
To understand theoretical and practical on the various branches of physics and their development in all its types and applications.
To Give students the tool for Universal forces Units and physics Quantities
To Know the basics for analysis and serve specific problems
To learn the general law and application of physics

Module Learning Outcomes

Knowledge	A2	A2.1 Define Vector ,Physical Quantities Units and conversion. A2.2 Classify of types of lasers and vibration wave. A2.3 illustrate Rotational Motion, Relativity mechanic and Quantum mechanic.
	A3	A3.1Define Law of Reflection and HOOKE'S LAW . A3.2 Describe The surface tension of water by the pull of microscope slide. A3.3 Applied Measurement of g: Use of a simple pendulum and Force table.
skills	B2	B1.1 Function efficiently as an individual. B1.2 Function as a member of multidisciplinary and multicultural teams.
Ethics	C1	C1.1Define professional and ethical responsibilities. C1.2 Demonstrate diversity in their commitment to ethical responsibilities.

Indicative Contents

Part A- Measurements and Units
Basic and derived physical quantities.
The International System of Units (SI).
Accuracy and errors in testing.
Dimensional analysis.

Part B- Heat and Thermodynamics
Concepts of heat and temperature.
Thermal expansion.
Basic laws of thermodynamics.
Heat transfer (conduction, convection, radiation).

Part C- Work, Energy, and Momentum
The concept of work and kinetic energy.
Conservation of energy.

	Linear momentum and the law of conservation of momentum. Part D- Light and Optics Reflection and Refraction of Light Lenses and Mirrors Interference, Diffraction, and Polarization

Learning and Teaching Strategies	
Strategies	•Presentations • Discussions • Tutorial and graphics • Problem solving • Brain storming • Research and reporting - Problem Solving

Student Workload (SWL)			
Structured SWL (h/sem)	78	**Structured SWL (h/w)**	5.2
Unstructured SWL (h/sem)	72	**Unstructured SWL (h/w)**	4.8
Total SWL (h/sem)	150		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered	LOs
Week 1	Physics Definitions and Applications ,Vector ,Physical Quantities Units and conversion	A2 B1C1
Week 2	Mechanics: Motion in one Dimension , velocity acceleration, Free falling bodies ,Motion in two dimention ,Project motion ,Circular motion.	A2 B1 C1
Week 3	Force The Newtons law of motion and Application , Energy ,work,power, Impulse, Momentum ,torque and Collisions .	A3B1 C1
Week 4	Rotational Motion ,torque ,Rotational Equilibrium and the Law of Gravity , Equation of rigid body ,Periodic motion.	A2 B1 C1
Week 5	Thermodynamics.Heat transver ,heat capacity ,mechansum of heat transver , The Laws of Thermodynamics.	A2B1 C1
Week 6	Vibrations and Waves: Mechanical wave phenomena , Vibration bodes , Sound wave.	A3 B1 C1

وزارة التعليم العالي والبحث العلمي
جامعة العين الاهراقية
كلية الهندسة
قسم الليزر والالكترونيات البصرية

Week 7	Electricity and Magnetism:Electric Forces and Electric Fields , Electrical Energy and Capacitance.	A2 B1 C1
Week 8	Light and Optics:The Nature and propagation of light , Speed and sorce of light ,The Refraction and Reflection, law ,Total internal reflection and Dispersion.	A2 B1 C1
Week 9	Modren physics: Relativity mechanic, Quantum mechanic , The Laser.	A2 B1C1
Week 10	Static electricity, Electromagnetic induction.	A2 B1 C1
Week 11	Lasers and their use in physics.	A2 B1 C1
Week 12	Uses of lasers in medicine.	A2 B1 C1
Week 13	Uses of lasers in industry.	A2 B1 C1
Week 14	Classification of types of lasers.	A2 B1 C1
Week 15	Report	A2 B1 C1
Week 16	Preparatory week before the final Exam	

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر		
	Material Covered	
Week 1	HOOKE'S LAW	A3 B1 C1
Week 2	Measurement of g: Use of a simple pendulum	A3 B1 C1
Week 3	Force Table	A3 B1 C1
Week 4	Law of Reflection	A3 B1 C1
Week 5	The surface tension of water by the pull of microscope slide	A3 B1 C1

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	University Physics, Sear - Zemasky - Young Seventh Edition ,Volum 1 ,1987—2000—	Yes

رئيس القسم
م.د. [illegible]

جامعة العين العراقية
كلية الهندسة
قسم الليزر والالكترونيات البصرية
وزارة التعليم العالي والبحث العلمي

Recommended Texts		
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**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 المعالجه)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(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.