

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	<b>General Physics</b>		Module Delivery
Module Type	Basic		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	<b>SCI12012</b>		
ECTS Credits	7		
SWL (hr/sem)	<b>175</b>		
Module Level	1	Semester of Delivery	
Administering Department	Medical Physics	College	Science
Module Leader	Dr. Akeel M. Kadim	e-mail	dr.akeelm.kadim@kus.edu.iq
Module Leader's Acad. Title	Assist. Profesor	Module Leader's Qualification	Ph.D.
Module Tutor	Akeel M. Kadim	e-mail	dr.akeelm.kadim@kus.edu.iq
Peer Reviewer Name	Amer Basim Shaalan	e-mail	ame7@kus.edu.iq
Scientific Committee Approval Date		Version Number	

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

<b>Module Aims</b> أهداف المادة الدراسية	<ol style="list-style-type: none"><li>1. To have knowledge about General Physics basic principles like Mechanics of liquid and material properties.</li><li>2. To get skills in solving mathematical problems that related to physics subjects.</li><li>3. To get practical skills in managing physics experiments in the lab. and record measurements and then calculate required quantities.</li><li>4. Analysis the physical information in syllabus and be able to make conclusions by joining between physical concepts.</li><li>5. To be able to apply his knowledge in physics in market.</li></ol>
<b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"><li>1. Save in memory basic principles and laws of Fluids and material properties.</li><li>2. Produce scientific concepts by joining between physical principles.</li><li>3. Joining physical concepts to produce more complicated concepts.</li><li>4. The ability to make conclusions by analysis the physical information.</li><li>5. The ability to apply all his knowledge to solve problems in reality.</li><li>6. To be able to run the devices and apparatus in the lab.</li><li>7. Assemble devices and make an experiment to prove physical relation.</li><li>8. Discuss the results get from running experiment in the lab.</li><li>9. Make reports from theory to conclusion about any physical concept proved in the lab.</li></ol>
<b>Indicative Contents</b> المحتويات الإرشادية	<p>Indicative content includes the following.</p> <ol style="list-style-type: none"><li>1- You will begin your study with Fluid Properties like density and pressure</li><li>2- You will learn how to measure the Pressure and Pressure varying with depth</li><li>3- You will learn Pascal and Archimedes principles</li><li>4- You will study Fluid dynamics and Bernoulli equation</li><li>5- You will study thermal Physics (heat, internal energy and specific heat)</li><li>6- You will study kinetic theory of gases</li></ol>

## Learning and Teaching Strategies

### استراتيجيات التعلم والتعليم

<b>Strategies</b>	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding
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their critical thinking skills. This will be achieved through classes, online lectures and home works and by considering type of simple experiments involving some sampling activities that bring attention of the students.

### Student Workload (SWL)

#### الحمل الدراسي للطالب

<b>Structured SWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	78	<b>Structured SWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا	5
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	97	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	175		

### Module Evaluation

#### تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
<b>Formative assessment</b>	<b>Quizzes</b>	2	10% (10)	4,6	LO #1, 2
	<b>Assignments</b>	2	10% (10)	2, 12	LO # 3, 4, and 5
	<b>Projects / Lab.</b>	1	10% (10)	Continuous	
	<b>Report</b>	1	10% (10)	13	LO # 5, 9
<b>Summative assessment</b>	<b>Midterm Exam</b>	1 hr	10% (10)	7	LO # 1-7
	<b>Final Exam</b>	3hr	50% (50)	16	All
<b>Total assessment</b>			100% (100 Marks)		

### Delivery Plan (Weekly Syllabus)

#### المنهاج الاسبوعي النظري

	Material Covered
<b>Week 1</b>	Fluid Mechanics: Fluid Density and Pressure
<b>Week 2</b>	Measuring Pressure
<b>Week 3</b>	Pascal principle
<b>Week 4</b>	Archimedes principle of Buoyancy
<b>Week 5</b>	Fluid dynamics and Bernoulli's Equation
<b>Week 6</b>	Surface tension

<b>Week 7</b>	Exam
<b>Week 8</b>	Thermal Physics: Heat and internal energy
<b>Week 9</b>	Specific Heat
<b>Week 10</b>	Energy transfer
<b>Week 11</b>	Applications of Energy transfer
<b>Week 12</b>	Calorimeter
<b>Week 13</b>	Ideal gases
<b>Week 14</b>	Kinetic theory of gases
<b>Week 15</b>	Applications of Kinetic theory of gases
<b>Week 16</b>	Final Exam

### Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
<b>Week 1,2</b>	Lab 1,2: Introduction to diagrams and report writing
<b>Week 3,4</b>	Lab 3,4: Surface tension
<b>Week 5,6</b>	Lab 5,6: Center of Pressure
<b>Week 7,8</b>	Lab 7,8: Flow Through a Venturi Meter
<b>Week 9,10</b>	Lab 9,10: Measure the specific Heat capacity of liquid by method of cooling
<b>Week 11,12</b>	Lab 11,12: Measure the specific Heat capacity of Copper by Calendar method
<b>Week13,14</b>	Lab 13,14: Determination of coefficient of apparent cubic expansivity of a liquid
<b>Week 15</b>	Lab 15: Measure of Specific Heat capacity of Metal by method of mixtures

### Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
<b>Required Texts</b>	Applied Physics by Schaum 2013	No
<b>Recommended Texts</b>	Physics for scientists and engineers by Serway 2004.	No
<b>Websites</b>	<a href="https://www.coursera.org/browse/physical-science-and-engineering">https://www.coursera.org/browse/physical-science-and-engineering</a>	

### Grading Scheme

## مخطط الدرجات

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