

Module Information			
معلومات المادة الدراسية			
Module Title	Medical Physics 1		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	UOMU0301061		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	2	Semester of Delivery	
Administering Department	Type Dept. Code	College	Type College Code
Module Leader	Dr. Duaa jaafer Dheaa		e-mail Duaa.jaafer.dheaa@uomus.edu.iq
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	Name	e-mail	E-mail
Scientific Committee Approval Date	01/06/2023	Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	MPH 1208	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	

<p>Module Objectives</p> <p>أهداف المادة الدراسية</p>	<p>22. Provide students with a foundation in the basic concepts of medical physics.</p> <p>23. To help students to understand physical principles that underlie the dynamics of life from the macro to molecular scale.</p> <p>24. To help students to understand physical issues concerning the human body, in part by solving problems to further this understanding</p>
<p>Module Learning Outcomes</p> <p>مخرجات التعلم للمادة الدراسية</p>	<p>26. Understand and explain different systems of human body</p> <p>27. Distinguish various physical processes.</p> <p>28. Understand the kinetics of human movements..</p> <p>29. Explain the physical process for the different human organs</p> <p>30. Describe the human skeletal and muscular systems</p> <p>31. Understand the principles of heat therapy.</p>
<p>Indicative Contents</p> <p>المحتويات الإرشادية</p>	<p>Terminology, the Standard Human, and Scaling, Anatomical Terminology, Statics of the Body, Review of Forces, Torques, and Equilibrium, Statics in the Body, Force, Muscles, Skeletal Muscles in the Body, Types of Muscle Activity, The Structure of Muscles, Mechanical Model of the Active State of Muscles, Muscle Strength and Evolution, Metabolism: Energy, Heat, Work, and Power of the Body, Conservation of Energy and Heat Flow, Energy Content of Body Fuel, Metabolizable Energy, Metabolic Rates, Basal Metabolic Rate, Loss of Body Heat, Modes of Heat Loss, Body Temperature, Fluid Pressure, Fluid Flow in the Body, and Motion in Fluids, Characteristic Pressures in the Body, Definition and Units, Measuring Pressure, Basic Physics of Pressure and Flow of Fluids, Fluids in Motion, Cardiovascular System, Physics of the Circulation System, Blood Pressure and Flow in Vessels, Work Done by the Heart and the Metabolic Needs of the Heart, Modeling the Circulatory System and the Heart, Lungs and Breathing, Structure of the Lungs, Physics of Breathing, Breathing Under Usual and Unusual Conditions,</p>

<p>Learning and Teaching Strategies</p> <p>استراتيجيات التعلم والتعليم</p>	
<p>Strategies</p>	<p>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 their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.</p>

<p>Student Workload (SWL)</p> <p>الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا</p>	
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Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	60	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem)	90	Unstructured SWL (h/w)	31
الحمل الدراسي غير المنتظم للطالب خلال الفصل		الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Terminology, the Standard Human, and Scaling
Week 2+ Week3	Statics of the Body

Week 4+ Week5	Mechanical Properties of the Body
Week 6	Muscles

Week 7	First exam
Week 8+ Week 9	Metabolism: Energy, Heat, Work, and Power of the Body
Week 10+ Week 12	Fluid Pressure, Fluid Flow in the Body, and Motion in Fluids
Week 12+ Week 13	Cardiovascular System
Week 14	Lungs and Breathing
Week 15	Second Exam