

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Laboratory Medical Instrumentation I		Module Delivery <input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input checked="" type="checkbox"/> Practical <input checked="" type="checkbox"/> Seminar
Module Type	Core		
Module Code	UOMU024031		
ECTS Credits	7		
SWL (hr/sem)	175		
Module Level		UGII	Semester of Delivery
Administering Department		MIET	College
Module Leader		Esaim Falah Hasan	e-mail
Module Leader's Acad. Title		Lecturer	Module Leader's Qualification
Module Tutor		Esaim Falah Hasan	e-mail
Peer Reviewer Name			e-mail
Scientific Committee Approval Date		19/11/2023	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	
Module Aims أهداف المادة الدراسية	أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"> 1. The graduate get scientific and applied skills to diagnose the medical instruments faults. 2. The graduated students will gain the ability of knowledge of different parts of medical instruments. 3. Development and training the engineering technical staff on medical device maintenance. 4. Preparation of the research and studies to improve and develop the action of medical devices. 5. Prepare application engineers in technical and electronic engineering. 6. Put the proposals and alternatives for the medical devices.
Indicative Contents المحتويات الإرشادية	<p>Upon completion of the course, students should be able to:</p> <ol style="list-style-type: none"> 1. Define the Medical instrumentation and recognize what is the laboratory security system and determine the quality control results in the medical laboratory. 2. Classify the medical instrumentation. 3. Describe the hospital design. 4. Design and Describe the operating room. 5. Understand patient safety laws and rules. 6. Define and understand the medical Laboratory Instruments and Tools. 7. Calibration of Medical Laboratory Instruments. 8. Define, explain, and describe Balances and understand the electrical and electronic parts. 9. Explain the types of balances and their medical application. 10. Define, explain, and describe water bath and understand the electrical and electronic parts. 11. Define, explain, and describe wax bath and understand the electrical and electronic parts. <p>Indicative content includes the following:</p> <p>Medical instrumentation classification, analysis lists, work security rules, and best laboratory use guidelines [14 hr].</p> <p>Calibration of instruments criteria, types, components, advantages and disadvantages, physical and medical applications. [14hr]</p> <p>Medical instrumentation faults and maintenance, analysis lists, work security rules, and best laboratory use guidelines [14hr].</p> <p>Patient safety and hospital design rules [15h].</p> <p>Classification of different types of medical laboratories like medical, biological histological and chemical [13hr].</p>

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the design, while at the same time refining and expanding their medical instrumentations 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.
-------------------	---

Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	81	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	175		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	% (10)	3,10	LO # 1,2,3.....14 ,
	Assignments	2	% (10)	4,8	LO # 6,13
	Projects / Lab.	1	%(10)	6	LO #3
	Report	2	% (10)	5,9	LO # 7,12
Summative assessment	Midterm Exam	2 hr	10% (10)	7	LO # 1-7
	Final Exam	3 hr	50% (50)	14	All
Total assessment		100% (100 Marks)			

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Definition to medical instruments.
Week 2	Introduction to medical instruments.
Week 3	Classification of medical instrumentation.
Week 4	Design of hospitals.
Week 5	Design of operating room.
Week 6	Patient Safety.
Week 7	Mid-term exam
Week 8	Medical Laboratory Instruments and Tools-1
Week 9	Medical Laboratory Instruments and Tools- 2
Week 10	Classification of different medical laboratories
Week 11	Calibration of Medical Laboratory Instruments.
Week 12	Introduction to Balance.
Week 13	Balance and their types.
Week 14	Wax bath.
	Water bath.
Week 15	The preparatory week before the final exam.

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Introduction to medical instruments.
Week 2	Classification of medical instrumentation.
Week 3	Medical Laboratory Instruments and Tools.
Week 4	Patient Safety.
Week 5	Calibration of Medical Laboratory Instruments.
Week 6	Classification of different medical lab.

Week 7	Introduction to Balance.
Week 8	Balance and their types.
Week 9	Wax bath.
Week 10	Water bath.
Week 11	Exam.

Learning and Teaching Resources مصادر التعلم والتدریس		
	Text	Available in the Library?
Required Texts	Biomedical device technology ,by ANTHONY Y. K. CHAN, MSc, MEng, PEng, CCE	
Recommended Texts	Ananthi ,2005,"A text book of medical instruments	
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 المعالجة)	(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.