Module (Course Syllabus) Catalogue

2023-2024

College/ Institute	Erbil Technical Medical Institute	
Department	Anesthesia	
Module Name	Medical physics	
Module Code	PMP205	
Degree	Technical Diploma [x] Bachler [ ] High Diploma [ ] Master [ ] PhD [ ]	
Semester	Second	
Scientific Title	Assistant Lecturer	
ECTS (Credits)		
Module type	Prerequisite [x] Core [ ] Assist. [ ]	
Weekly hours	4	
Weekly hours (Theory)	(2)hr Class	( )Total hrs Workload
Weekly hours (Practical)	(2)hr Class	( )Total hrs Workload
Lecturer (Theory)	Lana rafat abdulrahman	
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Lecturer (Practical)	Lana rafat abdulrahman	
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Websites		

Course Book

Course Description	The subject is studied in the second semester in Anaesthesia department which is so important because this course connect physical principle of gases and prepared all students to understand how the gases are produced and used during the Anaesthesia processes and this course gave all fundamental states of matters and state changing which is the base concepts of the Anaesthesia and turning the students practically in physical laboratory to makes a good idea about using the electricity , heat and other application of physics in medical filed by a true way in practice work.
Course objectives	At the end of this course the student must be understand all the concepts of physics and gases and the relation between them and we cannot separate between them because all types of matters basically generated physically by changing their states.
Student's obligation	At the end of the first course the ratio of present student is very good and they obligation through theory and practical lecture,report ,quiz ,seminar and exam , just in same emergency case for student life.
Required Learning Materials	Theory: lecture halls with computers equipment for lecture presentations, white board, overhead projector, posters Laboratory practice: General: library, computer suite with internet access .

Evaluation	Task	**Weight (Marks)**	**Due Week**	**Relevant Learning Outcome**
	Paper Review			
	Assignments: Homework			
	Assignments: Class Activity			
	Assignments: Report			
	Assignments: Seminar			
	Assignments: Essay			
	Assignments: Project			
	Quiz			
	Lab.			
	Midterm Exam			
	Final Exam			
	Total			
Specific learning outcome:	Student will be able to 1. connect the physics with medical field. 2. Ability to training the students to using the physics in medical instruments. 3. training the students in a physical laboratory for using the electric, current , voltage and instruments by a right and safe way in the work life.			
Course References:	Key references: • Key references : medical physics. • Useful references: Fundamental of medical physics. • Magazines and review (internet): all sites and download books.			

Course topics (Theory)	Week	Learning Outcome
Medical physics and international system of units	1	
Basic units and MKS system of units	2	
Heat , Specific heat, Thermal energy and Temperature	3	
Latent heat of fusion and vaporization	4	
Heat transfer and Thermodynamics	5	
The Physical States of Matter	6	
The Ideal Gas Law and Real Gases	7	

Practical Topics	Week	Learning Outcome
The acceleration of free fall by means of simple pendulum	1	To calculate the acceleration of free fall
To test validity of Ohm 's law using an Ammeter and Voltmeter	2	To test validity of Ohms law
Reflection and refraction	3	To verify the law of reflection

Questions Example Design
Theoretical

1. Compositional:

-Define the followings: 1.medical physics 2.conduction 3.pressure

-compare between solids, liquids and gases.

2.True or false type of exams:

1.Heat is a change in thermal energy –thermal energy being moved from one object to another.

2.Entropy is a measure of how much work can be extracted from the internal energy .

3.Vapor pressure : the pressure exerted by the gas molecules above a liquid.

Practical:

Q1/prove the followings

Q2/Write the units of the following variables

Q3/Write the aims of the following experiments

Extra notes:

External Evaluator