

Course Weekly Outline

Course Instructor	Abbas Hadi Abbas				
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Title	Mathematics and Biostatistics (1 st semester). Medical Physics (2 nd Semester)				
Course Coordinator	Mathematics (1 st semester). Medical Physics (2 nd Semester)				
Course Objective	Objectives(1 st semester): Gives students the ability to deal with the concept of Mathematics and Statistic, emphasizes the knowledge and skill required to efficiently discharge the duties and responsibilities of the pharmacist. Objectives(2 nd Semester): Gives students the ability to deal with the concepts of physics, emphasizes the knowledge and skills required to efficiently discharge the duties and responsibilities of the pharmacist. The course deals with the concept of basic physics and application of physics in the medical field. Upon completion of the course the students will be able to understand the physical terminology and abbreviation used to describe the lecture, and the application in medical field.				
Course Description	(1 st semester): inequality, limits, derivatives, integrals, trigonometric function (2 nd Semester): thermodynamics system, temperature, heat and energy, laws of thermodynamics, heat capacity, process, Kinetic theory of a gas; electromagnetic waves, physical optics. Radiation, X-Ray; U.V and IR.				
Textbook	Finny RI, Thomas GB (Eds.); Calculus and Analytical Geometry (1 st semester). Physics for Biology and Medical Students, (Latest edition). (2 nd Semester)				
References	Daniel WW (ED.), Foundation for Analysis in the Health Science, th ⁴ ed. (1 st semester). Universal Physics th ⁵ ed.				
Course Assessment(1 st semester)	Term Tests	Laboratory	Quizzes	Project	Final Exam
	25%	-----	5%	----	70%
Course Assessment (2 nd Semester)	Term Tests	Laboratory	Quizzes	Project	Final Exam
	25%	20%	5%	----	50%
General Notes					

Course weekly Outline

week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1		General concepts; coordinate and graph in plane.		
2		inequality; absolute value or magnitude;		
3		function and their graphs;		
4		displacement function; slope and equation for lines.		
5		Limits; theorem of limits;		
6		limit involving infinity;		
7		continuity; continuity conditions.		
8		Line tangent and derivatives;		
9		differentiation rules;		
10		derivative of trigonometric function; practice exercises.		
11		Indefinite integrals;		
12		rules for indefinite integrals;		
13		Definite integration		
14		formulas for basic trigonometric function;		
15		definite integrals; properties of definite integrals;		
16		practice exercises.		
(2 nd Semester)				
17		Method of physics and standards; thermodynamics system and system properties;	Measurement the surface tension of water experiment	
18		conservation of energy principle; application of thermodynamics;	refractive index of a liquid experiment	
19		Pressure; temperature and temperature scales (Celsius, Fahrenheit, kelvin);	absorption of gamma radiation in lead experiment	
20		equation of state; ideal gas and real gas; general law of gases; clauses equation	concentration of sugar solution experiment	
21		Vander Waales equation; equilibrium and types of equilibrium;	focal length of a convex lens experiment	
22		compressibility factor, coefficient of volume expansion, elastic coefficient (bulk modulus).	Bayle's law experiment	
23		work and mechanical forms of work; power; Boyles and Charles law; practice exercises.	Simple pendulum experiment	
24		1 st law of thermodynamics; The 2 nd law of thermodynamics;	Magnification experiment	
25		reversible and irreversible process; entropy and enthalpy; 'internal energy; heat capacity and adiabatic, adiabatic process.	Specific heat capacity experiment	
26		Kinetic theory of a gas; electromagnetic waves;	Thermal expansion experiment	
27		Maxwell equations; physical optics.	Leaser polarization experiment	
28		Kirshoffs law; planks law; Stefan-Boltzman law; Wiens law;	Hall effect experiment	
29		Black body and Albedo;	Determine of wavelength experiment	
30		Heat transfer (radiation, convection,	Spherical mirror experiment	

31		Production of X-Ray. and X-Ray spectra; absorption of X-Ray; U.V and IR effects;	Refraction in transfer body experiment	
32		medical and biological effects of radiation; radiotherapy.	Hock coefficient experiment	

Instructor Signature:

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