

Vocational School of Health Services / Radiotherapy

2024 - 2025 Academic Year

BASIC PHYSICS

Syllabus

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
BASIC PHYSICS	RAD1126200	Fall Semester	2+0	2	4
Prerequisites Courses					
Recommended Elective Courses	MEDICAL IMAGING DEVICES				
Language of Instruction	Turkish				
Course Level	Short Cycle (Associate's Degree)				
Course Type	Required				
Course Coordinator	Assist.Prof. Mustafa ÇAĞLAR				
Name of Lecturer(s)	Lect. İLKAY KARA				
Assistant(s)					
Aim	To grasp basic physics concepts and principles, to explain events and phenomena in nature with basic physics laws, to gain the ability to solve basic physics problems with mathematical techniques and analyses, and to create basic physics knowledge to be used in education life.				
Course Content	This course contains; Physical Quantities and Their Units,Vector and Scalar Quantities,Vector and Scalar Operations,Kinematical Variables and Motion,Projectile Motion,Newton's Laws of Motion,Application of Newton's Laws of Motion,Work, Power and Energy (Work-Energy Theorem and Power),Application of Work, Power and Energy,Electrostatics (Coulomb's Law),Electrostatics (Electric Field),Electrostatics (Electric Potential and Capacitance),Current and Resistance (Amper's Law),Current and Resistance (Ohm's Law and Joule's Law).				
Course Learning Outcomes			Teaching Methods	Assessment Methods	
Understands the basic principles of single and multi-dimensional motion			12, 16, 9	A	
Distinguish and apply the basic concepts of particle dynamics			12, 16, 9	A	
Can distinguish the concepts of Work and Energy			12, 16, 9	A	
Be able to distinguish the concepts of electric charge and electric field and make their applications.			12, 16, 9	A	
Learns the concept of electric current and can apply it to electrical circuits.			12, 16, 9	A	
Can examine electromagnetic waves by synthesizing the concepts of electricity and magnetism.			12, 16, 9	A	
Teaching Methods	12: Problem Solving Method, 16: Question - Answer Technique, 9: Lecture Method				
Assessment Methods	A: Traditional Written Exam				
Lecture Schedule					
Sequence	Topics	Preliminary Preparation			
1	Physical Quantities and Their Units	Pre-Reading			
2	Vector and Scalar Quantities	Pre-Reading			
3	Vector and Scalar Operations	Pre-Reading			
4	Kinematical Variables and Motion	Pre-Reading			
5	Projectile Motion	Pre-Reading			
6	Newton's Laws of Motion	Pre-Reading			
7	Application of Newton's Laws of Motion	Pre-Reading			
8	Work, Power and Energy (Work-Energy Theorem and Power)	Pre-Reading			
9	Application of Work, Power and Energy	Pre-Reading			
10	Electrostatics (Coulomb's Law)	Pre-Reading			
11	Electrostatics (Electric Field)	Pre-Reading			
12	Electrostatics (Electric Potential and Capacitance)	Pre-Reading			
13	Current and Resistance (Amper's Law)	Pre-Reading			
14	Current and Resistance (Ohm's Law and Joule's Law)	Pre-Reading			
Evaluation Methods		Weight(%)			
Midterm Exam		40			
General Exam		60			

Resources

Serway R.A, Jewett, Jr J.W. Modern Physics and Physics for Scientists and Engineers. Brooks Cole 9th Edition. (Volume I-II)Basic Physics Volume 1 - Mechanics, Basic Physics Volume 2 (Stephen T. Thornton)