

Vocational School of Health Services / Opticianry

2023 - 2024 Academic Year

BASIC PHYSICS

Syllabus

| Course Description | | | | | |
|--|--|--------------------------------|-------------------------|---------------------------|------|
| Name | Code | Semester | T+A Hour | Credit | ECTS |
| BASIC PHYSICS | OPT1126200 | 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. Hüseyin DEMİR | | | | |
| 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)