| COURSE DESCRIPTION | |
|---|---|
| **Course code and title** | PHYS104,PHYSICS II |
| **Course Semester** | 2 |
| **Course Content** | Electric fields, Continuous charge distribution and Electric fields, Gauss Law and applications, Electric Potential, Electric Potential of Continuous charge distribution, Capacitance and Dielectric , Current and Resistance, electromagnetic force, Direct current circuits, Magnetic Fields , Magnetic field sources, Electromagnetic induction, Faraday's Law and induction, Alternating Current Circuits , Alternating Current Circuits: AC sources, resistors, capacitors, ınductors at ac circuits , ac circuits in series, power, Electromagnetic Waves |
| **Recommended or Required Reading** | Physics for Scientists and Engineers, R.Serway & John W. Jewett Thomson Brooks/Cole © 2004 6th Edition. |
| **Recommended or Required Reading** | Young Freedman University Physics 13th Edition. Fundamentals of Physics [ 10th Edition] Halliday & Resnick. |
| **Credits of Course (ECTS)** | 6 |
| **Prerequisites** | Lectures must be attended by students |
| **Type of Course** | Basic Science Education |
| **Language of Instruction** | English |
| **Purpose and Object of the Course** | To examine basic electrics and magnetism phenomena in the nature and learning of basic concepts. To gain the basic discipline of algorithm development for analytical thinking and problem solving. |
| **Learnıng Outcomes Of The Course Unıt** | Students learn basic electrical knowledge.<br>Students can think critically, appropriately and analytically in everyday life.<br>Students can apply the principles of physics daily.<br>Learn the concepts of capacitor, capacitance, coil, and inductance.<br>Learns electric and magnetic forces. Understand and apply Newton's laws<br>Learn mass gravity<br>Learn vibration motion<br>Learn the concepts of work and energy. |
| **Planned Learning Activities and Teaching Methods** | Face to face |
| **Course Per Week** | 1.Week: Electric fields<br>2. Week : Continuous charge distribution and Electric fields<br>3. Week : Gauss Law and applications<br>4.Week: Electric Potential<br>5. Week :Electric Potential of Continuous charge distribution<br>6. Week :Capacitance and Dielectric<br>7. Week :Current and Resistance, electromagnetic force<br>8. Week : Mid term exam, Direct current circuits<br>9. Week :Magnetic Fields<br>10. Week: Magnetic field sources<br>11. Week: Electromagnetic induction<br>12. Week: Faraday's Law and induction<br>13. Week: Alternating Current Circuits<br>14. Week:Alternating Current Circuits: AC sources, resistors, capacitors, ınductors at ac circuits , ac circuits in series, power<br>15. Week : Electromagnetic Waves<br>14. Week: Final |
| **Workload** | Theoretical Study Hours of Course Per Week: 4hours<br>Practising Hours of Course Per Week:0<br>Reading:2 hours<br>Searching in Internet and Library:2 hours<br>Designing and Applying Materials:0<br>Preparing Reports: 0<br>Preparing Presentation:0<br>Presentation:0<br>Mid-Term and Studying for Mid-Term: 10 hours<br>Final and Studying for Final: 10 hours |

**Assessment Methods And Criteria**

| | Number | Total contribution (%) | |
|---|---|---|---|
| Mid-terms | 1 | 40 | 1 |
| Assignment | 0 | | |
| Exercise | 0 | | |
| Projects | 0 | | |
| Practice | 0 | | |
| Quiz | 0 | | |
| Contribution of In-term Studies to Overall Grade (%) | | | |
| Contribution of Final Examination to Overall Grade (%) | | 60 | |
| Attendance | | 0 | |

**Efficiency**

| Activities | Total number of weeks | Time (Weekly) | Total efficiency at the end of the semester |
|---|---|---|---|
| Theoretical Study Hours of Course Per Week | 14 | 4 | 56 |
| Practicing Hours of Course Per Week | 0 | 0 | 0 |
| Reading | 14 | 2 | 28 |
| Searching in Internet and Library | 14 | 2 | 28 |
| Designing and Materials, Applying | 0 | 0 | 0 |
| Preparing Reports | 0 | 0 | 0 |
| Preparing Presentation | 0 | 0 | 0 |
| Presentation | 0 | 0 | 0 |
| Mid-Term and Studying for Mid-Term | 1 | 10 | 10 |
| Final and Studying for Final | 1 | 10 | 10 |
| Other | 5 | 2 | 10 |
| TOTAL WORKLOAD | | | 142 |
| TOTAL WORKLOAD/ 25 | | | 5.68 |
| ECTS of Course | | | 6 |

**Course's Contribution To Program**

| No | PROGRAM LEARNING OUTCOMES | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 1 | Has necessary theoretical and practical knowledge in mathematics, life sciences, computation and computer engineering fields | | | | x | |
| 2 | Defines engineering problems, comes up with feasible analytical approaches for the solution, selects and applies appropriate modeling methods and ICT techniques | | | | x | |
| 3 | Analyzes a system, system component or process and design it under realistic constraints to meet the requirements; it implements modern design methods in this direction. | | | | x | |
| 4 | Has access to information and research resources for this purpose, use databases and other | | | | x | |

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| | sources of information. |
| **Name of Lecturer(s) and E-mail(s) of Lecturer(s)** | Prof. Dr. Haluk KORALAY<br>koralay@gazi.edu.tr |