| Course Information | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Course Code** | **T** | **P** | **L** | **C** | **ECTS** | **Type** C/E | **Language** TR/ENG etc. | **Year/Semester** |
| FİZ4009 | **4** | **2** | **0** | **5** | **6** | **C** | **TR** | **4/FALL** |
| **Course Name (**Turkish**)** | **Elektromanyetik Teori** | | | | | | | |
| **Course Name (**English**)** | **Electromagnetic Theory** | | | | | | | |

| | |
|---|---|
| **Unit/Program** | Physics Department/Undergraduate Program |
| **Course Prerequisite** | No |
| **Course Objectives** | To teach students to comprehend the concepts of electromagnetic field and problem solutions about the subject. |
| **Course Outline** | Electrostatic, electrodynamics and magneto-static and dynamic |
| **Textbook/ Material / Resources** | Electromagnetic theory books and lecture notes |
| **Internship Status** | No |

**Course Precedents**

| **University Name** | **Program Name** | **Course Name** | **T-P-L-C; ECTS** | **Type** |
|---|---|---|---|---|
| **Eskisehir Osmangazi University** | **Physics** | **Electromanics Theory** | **4-0-0-4; 7** | **C** |
| **Gebze Technical University** | **Physics** | **Electromanics Theory** | **4-0-0-4; 6** | **C** |
| | | | | |

| **The instructor who proposed the course (** Title, Name and Surname) | *Signature* |
|---|---|
| | |
| **Instructors who can teach the course** (Title, Name and Surname) | *Signature* |
| | |
| | |

| **Academic justification for the opening of the course?** (The effect of course outcomes on program outcomes, etc.) |
|---|
| |

| **Brief explanation of the course** (theoretical lecture, applications, laboratory, studio, off-campus activity, using software, etc.) |
|---|
| It will be taught theoretically under the supervision of the relevant Faculty Member face-to-face. |

| **External Stakeholder Opinions About** the Course (It is expected that the opinions to be obtained from the business world that will employ your graduates or from real or legal persons outside the University who have expertise on the subject of the course will be specified. Proof documents must be attached to this form.) | |
|---|---|
| **Stakeholder Name** | **Opinion** (It should be given as a summary, it should not exceed two lines.) |
| | |
| | |
| | |

| Weekly Course Content Distribution | | |
|---|---|---|
| **Week** | **Theory** | **Application/Laboratory** |
| **1** | Coordinate Systems | |
| **2** | Coordinate System Transformations and Finding a Unit Vector in a Coordinate System | |
| **3** | Operators (Curl, Divergence and Rotational) | |
| **4** | Electric Field | |
| **5** | Point Loads | |
| **6** | Fields | |
| **7** | Green Teoremi | |
| **8** | Image Method | |
| **9** | Midterm Exam | |
| **10** | Solution of Laplace's Equation | |
| **11** | Dielectrics | |
| **12** | Manyetostatic | |
| **13** | Maxwell's equations | |
| **14** | Electromagnetic Waves | |
| **15** | Finale | |
| **16** | | |

| Assessment | | | |
|---|---|---|---|
| **Evaluation Criteria** | **Activity** | **Custom** | **Contribution to Success Grade (%)** |
| | Midterm Exams | 1 | 40 |
| | Quizzes | | |
| | Assignments | | |
| | Projects | | |
| | Term Paper | | |
| | Laboratory | | |
| | Other | | |
| | Final Exam | 1 | 60 |
| | | **Sum:** | 100 |
| **Remarks** | | | |

| | | |
|---|---|---|
| **Content Design and Subject Weight (%)** | Mathematics and Basic Sciences | 100 |
| | Engineering Sciences | |
| | Social Sciences | |
| | Health Sciences | |
| | Educational Sciences | |
| | Culture and Art Sciences | |
| | Design Information | |

| Workload (ECTS) Calculation | | | |
|---|---|---|---|
| **Events** | **Number** | **Duration (Hours)** | **Total workload (Hours)** |
| Fieldwork | | | |
| Midterm Exam Application | 1 | 2 | 2 |
| Self-Study (including pre-class and exam preparation) | 9 | 2 | 18 |
| Make-up Exam | 1 | 2 | 2 |
| Experiment and Observation | | | |
| Class Participation (Theory) | 14 | 6 | 84 |
| Homework | | | |
| Final Exam Practice | 1 | 2 | 2 |
| Laboratory | | | |
| Article Review | | | |
| Writing an Article | | | |
| Reading | | | |
| Case Study | | | |
| Performance | | | |
| Problem Solution | 14 | 2 | 28 |
| Project Preparation | | | |
| Project Submission | | | |
| Quiz | | | |
| Report Preparation | | | |
| Submitting Reports | | | |
| Role/Drama Work | | | |
| Seminar | | | |
| Oral Exam | | | |
| Team/Group Work | 9 | 2 | 18 |
| Argument | | | |
| Application/Practice | | | |
| Other | | | |
| **TOTAL WORKLOAD:** | | | **154** |
| **ECTS CREDİTS OF THE COURSE:** *(The number obtained as a result of Total Workload/25 is calculated by rounding to the whole number.)* | | | **6** |

| **Program Outcomes (PO)** / **Learning Outcomes (LO)** *(Course Outcomes)* | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | Can carry out independent and collaborative studies on physics-related issues and use analytical thinking skills | **5** | **4** | **4** | **4** | **5** | **4** | **5** | **5** | **4** | **3** | **1** |
| **2** | Gain the knowledge and skills necessary to use experimental methods and data analysis techniques | **5** | **4** | **4** | **4** | **5** | **4** | **5** | **5** | **4** | **3** | **1** |
| **3** | Students have the ability to participate effectively in group work | **5** | **4** | **4** | **4** | **5** | **4** | **5** | **5** | **4** | **3** | **1** |
| **4** | Students gain the ability to take responsibility and have principles | **5** | **4** | **4** | **4** | **5** | **4** | **5** | **5** | **4** | **3** | **1** |
| **5** | Students' ability to make written and oral presentations improves | **5** | **4** | **4** | **4** | **5** | **4** | **5** | **5** | **4** | **3** | **1** |

**Organizer:** Prof. Dr. Ali YEŞİL
**Preparation Date:** 20.05.2024