# BASIC PHYSICS II

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| 1 | Course Title: | BASIC PHYSICS II |
| 2 | Course Code: | FZK1072 |
| 3 | Type of Course: | Compulsory |
| 4 | Level of Course: | First Cycle |
| 5 | Year of Study: | 1 |
| 6 | Semester: | 2 |
| 7 | ECTS Credits Allocated: | 6.00 |
| 8 | Theoretical (hour/week): | 3.00 |
| 9 | Practice (hour/week): | 0.00 |
| 10 | Laboratory (hour/week): | 2 |
| 11 | Prerequisites: | |
| 12 | Language: | Turkish |
| 13 | Mode of Delivery: | Face to face |
| 14 | Course Coordinator: | Prof. Dr. AYŞEGÜL KAHRAMAN |
| 15 | Course Lecturers: | Doç. Dr. Ayşegül KAHRAMAN |
| 16 | Contact information of the Course Coordinator: | aysegulk@uludag.edu.tr |
| 17 | Website: | |
| 18 | Objective of the Course: | The aim of this course is to teach concepts related to electricity and magnetism , to explain electricity laws and relation of between the physical concepts. To teach how is applied the physic laws to solve the problems. |
| 19 | Contribution of the Course to Professional Development: | The aim of this course is to teach concepts related to electricity and magnetism , to explain electricity laws and relation of between the physical concepts. To teach how is applied the physic laws to solve the problems. |
| 20 | Learning Outcomes: | |
| | 1 | The student can solve engineering problems by using the basic concepts of electricity and magnetism |
| | 2 | The student can produce the solution to complex problems |
| | 3 | The student can follow the scientific developments |
| | 4 | The student can reinforce own information by doing the experiments in laboratory |
| | 5 | The student can be analyzed the results.and can be analyzed. |
| | 6 | The student learns the working principle of the basic circuit elements |
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| 21 | Course Content: | |

**Course Content:**

| Week | Theoretical | Practice |
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| 1 | Electric Charges, Insulators and Conductors, Coulomb's law | Working conditions in the laboratory, the creation of groups, and general information about laboratory |
| 2 | Electric Field, Electric Field of Continuous Charge Distribution, Electric Field Lines | Drawing graph and determine the ways to be followed conclusions based on the received results |

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| **3** | Gauss Law and Applications | Coulomb's law |
| **4** | Electric Potential and Energy | Determination of the electric field plate capacitor |
| **5** | Capacitance and Dielectrics | Measurement of capacitance |
| **6** | Current and Resistance | Alternative flow frequency |
| **7** | Direct Current Circuits | Wheatstone bridge |
| **8** | Midterm exam + repeating courses | Midterm exam + repeating courses |
| **9** | Magnetic Fields | The calculation of L |
| **10** | Magnetic Fields | Biot Savart law |
| **11** | Faraday's Law | Measurement of the magnetic forces acting on the wire current |
| **12** | Alternative Current Circuits | Determination of the dielectric coefficients of different substances |
| **13** | Alternative Current Circuits | Control of the test reports |
| **14** | Maxwell Equations | Control of the test reports |

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| **22** | Textbooks, References and/or Other Materials: | 1. Raymond A. Serway, John W., (1995). |
| **23** | Assesment | |

| **TERM LEARNING ACTIVITIES** | **NUMBER** | **WEIGHT** |
|---|---|---|
| Midterm Exam | 1 | 40.00 |
| Quiz | 0 | 0.00 |
| Contribution of Term (Year) Learning Activities to Success Grade | 40.00 | |
| Contribution of Final Exam to Success Grade | 60.00 | |
| Measurement and Evaluation Techniques Used in the Course | The system of relative evaluation is applied | |

| **24** | **ECTS / WORK LOAD TABLE** | | | |
|---|---|---|---|---|
| | Activites | Number | Duration (hour) | Total Work Load (hour) |
| | Theoretical | 14 | 3.00 | 42.00 |
| | Practicals/Labs | 14 | 2.00 | 28.00 |
| | Self-study and preparation | 14 | 3.00 | 42.00 |
| | Homeworks | 0 | 0.00 | 0.00 |
| | Projects | 0 | 0.00 | 0.00 |
| | Field Studies | 0 | 0.00 | 0.00 |
| | Midterm Exams | 1 | 2.00 | 2.00 |
| | Others | 14 | 5.00 | 70.00 |
| | Final Exams | 1 | 2.00 | 2.00 |
| | Total Work Load | | | 188.00 |
| | Total work load/ 30 hr | | | 6.20 |
| | ECTS Credit of the Course | | | 6.00 |

| **25** | **CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS** | | | | | | | | | | | | | | | |
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| | **PQ1** | **PQ2** | **PQ3** | **PQ4** | **PQ5** | **PQ6** | **PQ7** | **PQ8** | **PQ9** | **PQ10** | **PQ11** | **PQ12** | **PQ13** | **PQ14** | **PQ15** | **PQ16** |
| **ÖK1** | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ÖK2** | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ÖK3** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ÖK4** | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

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| **ÖK5** | 5 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ÖK6** | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**LO: Learning Objectives PQ: Program Qualifications**

| **Contribution Level:** | **1 very low** | **2 low** | **3 Medium** | **4 High** | **5 Very High** |
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