# 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: | None | |
| 12 | Language: | Turkish | |
| 13 | Mode of Delivery: | Face to face | |
| 14 | Course Coordinator: | Dr. Ögr. Üyesi ZERRİN KIRCA | |
| 15 | Course Lecturers: | Yrd. Doç. Dr. Zerrin KIRCA | |
| 16 | Contact information of the Course Coordinator: | Yrd. Doç. Dr. Zerrin KIRCA<br>zkirca@uludag.edu.tr, 0224 2941704, UÜ Fen Edebiyat Fakültesi, Fizik Bölümü 16059 Görükle Kampüsü Bursa | |
| 17 | Website: | | |
| 18 | Objective of the Course: | The aim of 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: | | |
| 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 interpret |
| | | **6** | The student know the working principle of the basic circuit elements |
| | | **7** | |
| | | **8** | |
| | | **9** | |
| | | **10** | |
| 21 | Course Content: | | |

**Course Content:**

| Week | Theoretical | Practice |
|---|---|---|
| 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 |
| **3** | Gauss Law and Applications | Coulombs law |
| **4** | Electric Potential and Energy | Determination of the electric field plate capacitor |
| **5** | Capacitance and Dielectrics | Joule law |
| **6** | Current and Resistance | Alternative flow frequency |
| **7** | Direct Current Circuits | Wheatstone köprüsü |
| **8** | Midterm exam + repeating cources | Midterm exam + repeating cources |
| **9** | Magnetic Fields | The calculation of inductance L |
| **10** | Sources of the Magnetic Field | Biot Savart law |
| **11** | Faraday's Law / Inductance, | Measurement of the magnetic forces acting on the wire current |
| **12** | Alternative Current Circuits | Determination of the dielectric coefficients of different substances |
| **13** | Maxwell Equations | Measurement of the dielectric coefficients of different substances |
| **14** | Materials preperation | Selway, John W., vol.2,(1995) Palme, "Fundamentals of Physics vol.2", David Halliday, Robert |

| Activites | Number | Duration (hour) | Total Work Load (hour) |
|---|---|---|---|
| Theoretical | 14 | 3.00 | 42.00 |
| Practicals/Labs | 14 | 2.00 | 28.00 |
| Self study and preperation | 14 | 3.00 | 42.00 |
| Homeworks | 14 | 3.00 | 42.00 |
| Projects | 3.0 | 0.00 | 0.00 |
| Field Studies | 0 | 0.00 | 0.00 |
| Midterm exams | 1 | 2.00 | 2.00 |
| Others | 14 | 2.00 | 28.00 |
| Final Exams | 1 | 2.00 | 2.00 |
| Total Work Load | | | 186.00 |
| Total work load / 30 hr | 0 | 0.00 | 6.20 |
| ECTS Credit of the Course | | | 6.00 |

**23 Assesment**

| TERM LEARNING ACTIVITIES | NUMBE | WEIGHT |
|---|---|---|
| Midterm Exam | 1 | 40 |
| Final Exam | 1 | 100 |
| Total | 2 | 100.00 |
| Contribution of Term (Year) Learning Activities to Success Grade | | 40.00 |
| Contribution of Final Exam to Success Grade | | 60.00 |
| Total | | 100.00 |
| Measurement and Evaluation Techniques Used in the Course | | |

**24 ECTS / WORK LOAD TABLE**

| 25 | CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **PQ1** | **PQ2** | **PQ3** | **PQ4** | **PQ5** | **PQ6** | **PQ7** | **PQ8** | **PQ9** | **PQ10** | **PQ11** | **PQ12** | **PQ13** | **PQ14** | **PQ15** | **PQ16** |
| **ÖK1** | 3 | 2 | 3 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ÖK2** | 3 | 3 | 3 | 3 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ÖK3** | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ÖK4** | 3 | 3 | 4 | 4 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ÖK5** | 4 | 3 | 4 | 3 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ÖK6** | 3 | 3 | 4 | 4 | 3 | 4 | 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** | | | | | | |