# INTRODUCTION TO ELECTRONICS

| | | |
|---|---|---|
| 1 | Course Title: | INTRODUCTION TO ELECTRONICS |
| 2 | Course Code: | FZK2008 |
| 3 | Type of Course: | Compulsory |
| 4 | Level of Course: | First Cycle |
| 5 | Year of Study: | 2 |
| 6 | Semester: | 4 |
| 7 | ECTS Credits Allocated: | 5.00 |
| 8 | Theoretical (hour/week): | 4.00 |
| 9 | Practice (hour/week): | 0.00 |
| 10 | Laboratory (hour/week): | 0 |
| 11 | Prerequisites: | There is no course prerequisite. |
| 12 | Language: | Turkish |
| 13 | Mode of Delivery: | Face to face |
| 14 | Course Coordinator: | Prof. Dr. SERTAN KEMAL AKAY |
| 15 | Course Lecturers: | Fizik Bölümü Öğretim Üyeleri |
| 16 | Contact information of the Course Coordinator: | Prof. Dr. Sertan Kemal AKAY BUÜ Fen Edebiyat Fakültesi, Fizik Bölümü Görükle Bursa 16059<br>kakay@uludag.edu.tr<br>224 2941719 |
| 17 | Website: | |
| 18 | Objective of the Course: | It is aimed that students has a information about fundamental concepts of electronic. |
| 19 | Contribution of the Course to Professional Development: | Provided basic electronic knowledge. |
| 20 | Learning Outcomes: | |

| | | |
|---|---|---|
| | 1 | Have fundamental knowledge about electric circuits. |
| | 2 | Have learn methods related to circuit analysis. |
| | 3 | Have learn semiconductor structure |
| | 4 | Have learns the working principle of the diode. |
| | 5 | Have learns to build circuit. |
| | 6 | |
| | 7 | |
| | 8 | |
| | 9 | |
| | 10 | |

**21 Course Content:**

**Course Content:**

| Week | Theoretical | Practice |
|---|---|---|
| 1 | Basic Concepts<br>-Electric Charge and Current<br>-Voltage<br>-Power and Energy | |
| 2 | Circuits Elements<br>-Active and Passive Elements<br>-Dependent and Independent Current and Voltage Sources | |

| | | |
|---|---|---|
| **3** | Basic Laws<br>-Ohm's Law<br>-Nodes, Branches and Loops | |
| **4** | Kirchhoff's Laws<br>Series Resistors and Voltage Division<br>Parallel Resistors and Voltage Divison | |
| **5** | WYE and Delta Circuit Conversions | |
| **6** | Direct Current Circuits<br>-Nodal Analysis Method | |
| **7** | Mesh Analysis | |
| **8** | -Principle of Superposition<br>-Resource Transformation | |
| **9** | Theven's Equivalent Circuit<br>-Norton's Theorem | |
| **10** | Alternative Current<br>-Frequency, Amplitude and Phase<br>-Effective Value<br>-Power Multiplier<br>-Capacitance and Inductance<br>-Capacitive and Inductive Reactance | |
| **11** | -RC Filter Circuit<br>-Derivative and Integrating Circuits<br>-Transient Currents, Time Constant<br>-RL Circuit<br>-Resonance and Mixed Waveforms | |

| Activites | Number | Duration (hour) | Total Work Load (hour) |
|---|---|---|---|
| Theoretical | 14 | 4.00 | 56.00 |
| Practicals/Labs | 0 | 0.00 | 0.00 |
| Self study and preparation | 14 | 5.00 | 70.00 |
| Homeworks | 0 | 0.00 | 0.00 |
| Projects | 0 | 0.00 | 0.00 |
| Field Studies | 0 | 0.00 | 0.00 |
| Midterm exams | 1 | 12.00 | 12.00 |
| Others | 0 | 0.00 | 0.00 |
| Final Exams | 1 | 16.00 | 16.00 |
| Total Work Load | | | 154.00 |
| Total work load/ 30 hr | | | 5.13 |
| ECTS Credit of the Course | | | 5.00 |

| | | |
|---|---|---|
| **22** | Textbooks, References and/or Other Materials: | Fundementals of Electrical Engineering<br>Leonard S. BORROW<br>CBS College Publishing 1985<br><br>Electronic Devices Third Edition<br>Thomas L. FLOYD<br>Macmillan Publishing Company 1992 |
| **23** | Assesment | |

| **TERM LEARNING ACTIVITIES** | **NUMBER** | **WEIGHT** |
|---|---|---|
| Midterm Exam | 1 | 40.00 |
| Quiz | 0 | 0.00 |
| Home work-project | 0 | 0.00 |

| | | |
|---|---|---|
| Final Exam | 1 | 60.00 |
| 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 | | The system of relative evaluation is applied. |

## 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** | 4 | 4 | 4 | 0 | 0 | 2 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ÖK2** | 4 | 4 | 4 | 0 | 0 | 2 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ÖK3** | 4 | 4 | 4 | 0 | 0 | 2 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ÖK4** | 4 | 4 | 4 | 0 | 0 | 2 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ÖK5** | 4 | 4 | 4 | 0 | 0 | 2 | 0 | 0 | 3 | 3 | 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** |