# BASIC PHYSICS I

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| 1 | Course Title: | BASIC PHYSICS I | |
| 2 | Course Code: | FZK1071 | |
| 3 | Type of Course: | Compulsory | |
| 4 | Level of Course: | First Cycle | |
| 5 | Year of Study: | 1 | |
| 6 | Semester: | 1 | |
| 7 | ECTS Credits Allocated: | 5.00 | |
| 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: | Doç.Dr. NİL KÜÇÜK | |
| 15 | Course Lecturers: | Prof. Dr. İlker KÜÇÜK<br>Doç. Dr. Nil KÜÇÜK | |
| 16 | Contact information of the Course Coordinator: | e-mail: nilkoc@uludag.edu.tr<br>Tel: 0 224 29 41 705<br>U.Ü., Fen Edebiyat Fakültesi, Fizik Bölümü 16059 Görükle Kampüsü/Bursa | |
| 17 | Website: | | |
| 18 | Objective of the Course: | Basic concepts and principles of physics is given clear and logical manner. | |
| 19 | Contribution of the Course to Professional Development: | | |
| 20 | Learning Outcomes: | | |
| | | **1** | Understand and use basic concepts and principles of physics problem solving. |
| | | **2** | Information on the vector and scalar quantities can be obtained. |
| | | **3** | Movement in a one dimension, time, speed and acceleration, and they learn the concepts of use in problem solving. |
| | | **4** | Learn two-dimensional problem solving and use the laws of motion, Newton's 2nd law. |
| | | **5** | Newton's laws of motion. |
| | | **6** | Work, energy and power, solve physics problems by using the potential energy and energy conservation. |
| | | **7** | Learns the subject of momentum and collisions. |
| | | **8** | Learns the concepts of Rigid-body rotation about a fixed axis, rotational motion, angular momentum and torque. |
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| 21 | Course Content: | | |
| | **Course Content:** | | |
| Week | Theoretical | | Practice |

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| **1** | Physical Quantities and Units, Dimension Analysis, Vectors | Lecture and solving problem |
| **2** | Motion in One Dimension | Lecture and solving problem |
| **3** | Motion in a Plane | Lecture and solving problem |
| **4** | Newton’s Laws | Lecture and solving problem |
| **5** | Work, Power and Energy | Lecture and solving problem |
| **6** | The Conservation of Energy | Lecture and solving problem |
| **7** | Midterm Exam<br>Repetition of lecture | Lecture and solving problem |
| **8** | Momentum, Collision, Center of Mass | Lecture and solving problem |
| **9** | Rotational Motion | Lecture and solving problem |
| **10** | Angular Momentum and Torque | Lecture and solving problem |
| **11** | Equilibrium | Lecture and solving problem |
| **12** | Gravitation | Lecture and solving problem |
| **13** | The Simple Harmonic Oscillator | Lecture and solving problem |
| **14** | Waves and Interference | Lecture and solving problem |

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| **22** | Textbooks, References and/or Other Materials: | 1. “Physics for Scientists and Engineers”, Raymond A. Serway, John W., (1995) Palme.<br><br>2. “University Physics”, Hugh D. Young, Roger A. Freedman, (2007) Pearson Education. |

| 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 | 6.00 | 84.00 |
| 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 | 10 | 2.00 | 20.00 |
| Final Exams | 1 | 2.00 | 2.00 |
| Total Work Load | | | 178.00 |
| Total work load/ 30 hr | | | 5.93 |
| ECTS Credit of the Course | | | 5.00 |

| **TERM LEARNING ACTIVITIES** | **NUMBE** | **WEIGHT** |
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| Midterm Exam | 1 | 40.00 |
| Home work-project | 0 | 0.00 |
| Midterm exams | 2 | 100.00 |
| Total | | 100.00 |

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| **24** | **ECTS / WORK LOAD TABLE** |

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

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| **ÖK5** | 4 | 3 | 3 | 0 | 2 | 4 | 4 | 0 | 4 | 3 | 0 | 3 | 0 | 0 | 0 | 0 |
| **ÖK6** | 4 | 3 | 3 | 0 | 2 | 4 | 4 | 0 | 4 | 3 | 0 | 3 | 0 | 0 | 0 | 0 |
| **ÖK7** | 4 | 3 | 3 | 0 | 2 | 4 | 4 | 0 | 4 | 3 | 0 | 3 | 0 | 0 | 0 | 0 |
| **ÖK8** | 4 | 3 | 3 | 0 | 2 | 4 | 4 | 0 | 4 | 3 | 0 | 3 | 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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