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| **ISHIK UNIVERSITY FACULTY OF EDUCATION Department of PHYSICS EDUCATION,2017-2018 Spring Course Information for** **PHYS 102 GENERAL PHYSICS II** |

|  |  |
| --- | --- |
| **Course Name:** | GENERAL PHYSICS II |
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|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Code** | **Course type** | **Regular Semester** | **Theoretical** | **Practical** | **Credits** | **ECTS** |
| PHYS 102 | 2 | 2 | 2 | 2 | 3 | 5 |

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| **Name of Lecturer(s)-Academic Title:** | Pishtiwan Akram - MABestoon Mustafa - MSc |
| **Teaching Assistant:** | - |
| **Course Language:** | English |
| **Course Type:** | Non-area Elective |
| **Office Hours** | Thu. 13:30-15:30 Thursday after 14:00  |
| **Contact:** | Email:pishtiwan.akram@ishik.edu.iq Bestoon.Mustafa@ishik.edu.iq  |
| **Teacher's academic profile:** | Asst. Lecturer BSc Degree in Software Engineering. MSc Degree in Software Engineering. IT Department Head.  |
| **Course Objectives:** | 1. Explaining the concepts of electricity and magnetism. 2. Understanding the concept of electric field. 3. Understand the difference between electric field and electric force. 4. Understanding the concepts of electric potential difference. 5. Describing the relationship among energy, potential difference and charge. 6. Describe the characteristics of resistors in series and in parallel connection. 7. Describe the characteristics of capacitors in series and in parallel connection 8. Concepts of Ohm’s law. 9. Explaining the types of magnets. 10.Explaining the concepts of induced magnets and magnetic fields. |
| **Course Description (Course overview):** | Electrostatics, Electric Fields, Electric Potential, Capacitors and dielectrics, Electric current, DC circuits, Current and Various media, Magnetism, Magnetic force, Electromagnetic force, Electromagnetic induction, AC circuits, Laboratory includes some basic Physics experiments. |
| **COURSE CONTENT**

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Hour** |               **Date**               | **Topic** |
| **1** | 2 | 25-29/3/2018 | Static electricity |
| **2** | 2 | 1-5/4/2018 | Coulomb’s law and electric field |
|  |  |  |  |
| **3** | 2 | 8-12/4/2018 | Electric potential and potential difference |
| **4** | 2 | 15-19/4/2018 | Electric potential and potential difference |
|  |  |  |  |
| **5** | 2 | 22-26/4/2018 | Capacitors and capacitance |
| **6** | 2 | 29/4-3/5/2018 | Midterm Exam |
|  |  |  |  |
| **7** | 2 | 6-10/5/2018 | Ohm\'s Law |
| **8** | 2 | 13-17/5/2018 | AC and DC current |
|  |  |  |  |
| **9** | 2 | 20-24/5/2018 | Magnetic fields and electromagnetic fields |
| **10** | 2 | 27-31/5/2015 | Review |
|  |  |  |  |
| **11** | 2 | 3-7/6/2018 | Final Exam |
| **12** | 2 | 10-14/6/2018 | Final Exam |
|  |  |  |  |

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| **COURSE/STUDENT LEARNING OUTCOMES**

|  |  |
| --- | --- |
|  |  |
| **1** | Static electricity |
| **2** | Electric field |
| **3** | Electric potential |
| **4** | Capacitors |
| **5** | Ohm\'s Law |

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| **COURSE'S CONTRIBUTION TO PROGRAM OUTCOMES**(Blank : no contribution, I: Introduction, P: Profecient, A: Advanced )

|  |  |  |
| --- | --- | --- |
|  | **Program Learning Outcomes** | **Cont.** |
| **1** | Demonstrate the ability to perform theoretical calculations in basic areas of physics (Mechanics, Electricity & Magnetism, and Modern Physics). | P |
| **2** | Demonstrate quantitative and qualitative analysis of physical problems. | P |
| **3** | Proficient with equipment and procedures used to acquire and analyze data of physical phenomena through performance in laboratory activities. | P |
| **4** | Perform analysis and calculations based on experimental data, draw and present valid conclusions, and process and visualize their data. | P |
| **5** | Report in written format the results of their calculations, research projects, and reading of technical literature. | P |
| **6** | Create and effectively present on oral report on the results of their calculations, research projects, and reading of technical literature. | P |
| **7** | Know about their career options, what skills and experiences are required for those careers, and are able to develop a resume that advances them towards their career goals. | P |

 |
| **Prerequisites (Course Reading List and References):** | PHYS 122 Introduction to Physics II |
| **Student's obligation (Special Requirements):** | Attending 80% of the course is mandatory. Participation in class activities is encouraged. Students are responsible for materials given in class. Students are responsible for assignments. Students must bring their own calculators. |
| **Weekly Laboratory/Practice Plan:** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Hour** |               **Date**               | **Topics** |
| 1 | 2 | 25-29/3/2018 | Observations on Static Electricity |
| 2 | 2 | 1-5/4/2018 | Determination of the Current and the Voltage in a Circuit with Combination in Series |
|  |  |  |  |
| 3 | 2 | 8-12/4/2018 | Determination of Current in Parallel Combination |
| 4 | 2 | 15-19/4/2018 | Determination of Current and Voltage in Mixed Combination |
|  |  |  |  |
| 5 | 2 | 22-26/4/2018 | Determinations of capacitance of capacitors and resistance of resistors in series and parallel |
| 6 | 2 | 29/4-3/5/2018 | Midterm exam |
|  |  |  |  |
| 7 | 2 | 6-10/5/2018 | Observations of magnetic fields and Electromagnetic fields |
| 8 | 2 | 13-17/5/2018 | The Determine the Change of Voltage on Transformators |
|  |  |  |  |
| 9 | 2 | 20-24/5/2018 | Review |
| 10 | 2 | 27-31/5/2015 | Final exam -Practical physics |
|  |  |  |  |
| 11 | 2 | 3-7/6/2018 |  |
| 12 | 2 | 10-14/6/2018 |  |
|  |  |  |  |

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| **Course Book/Textbook:** | 1. University Physics, Young & Freedman. 13th txt book 2. "Fundamentals of Physics", by Halliday, Resnick and Walker, Ninth Edition, John Wiley & Sons, Inc (2011). |
| **Other Course Materials/References:** | 3. "College Physics" Serway9th edition "Physics"9th-Edition John D. Cutnell & Kenneth W.Johnson |
| **Teaching Methods (Forms of Teaching):** | Lectures, Practical Sessions, Excersises, Self Evaluation |
| **COURSE EVALUATION CRITERIA**

|  |  |  |
| --- | --- | --- |
| **Method** | **Quantity** | **Percentage (%)** |
| Attendance | 5 | 1 |
| Quiz | 2 | 5 |
| Midterm Exam(s) | 1 | 30 |
| Laboratory | 1 | 10 |
| Lab/Practical Exam(s) | 1 | 5 |
| Final Exam | 1 | 40 |
| **Total** | **100** |
| **Examinations:**Essay Questions, Short Answers, Matching |  |  |

 |
| **Extra Notes:** |
| **ECTS (ALLOCATED BASED ON STUDENT) WORKLOAD**

|  |  |  |  |
| --- | --- | --- | --- |
| **Activities** | **Quantity** | **Duration (Hour)** | **Total Work Load** |
| Course Duration (Including the exam week: 16x Total course hours) |  |  | 0 |
| Hours for off-the-classroom study (Pre-study, practice) |  |  | 0 |
| Assignments Mid-terms |  |  | 0 |
| Final examination | 1 | 2 | 2 |
| Other |  |  | 0 |
| **Total Workload** | **2** |
| **ECTS Credit (Total workload/25)** | **0.08** |

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**Peer review**

|  |  |  |
| --- | --- | --- |
| Signature: | Signature: | Signature: |
| Name: | Name: | Name: |
| Lecturer                                                                       | Head of Department                                                         | Dean |

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