| Form: Course Syllabus | Form Number | EXC-01-02-02A |
|---|---|---|
| | Issue Number and Date | 2/3/24/2022/2963 05/12/2022 |
| | Number and Date of Revision or Modification | |
| | Deans Council Approval Decision Number | 2/3/24/2023 |
| | The Date of the Deans Council Approval Decision | 23/01/2023 |
| | Number of Pages | 06 |

| | | |
|---|---|---|
| 1. | Course Title | Practical physics for computer science students |
| 2. | Course Number | 0302116 |
| 3. | Credit Hours (Theory, Practical) | (0, 1 Practical) |
| | Contact Hours (Theory, Practical) | (0, 3 hours per week) |
| 4. | Prerequisites/ Corequisites | **0302108** |
| 5. | Program Title | B.Sc. |
| 6. | Program Code | 02 |
| 7. | School/ Center | Science |
| 8. | Department | Department of Physics |
| 9. | Course Level | First year students |
| 10. | Year of Study and Semester (s) | 2026, Spring |
| 11. | Other Department(s) Involved in Teaching the Course | |
| 12. | Main Learning Language | English |
| 13. | Learning Types | ☒ Face to face learning ☐Blended ☐Fully online |
| 14. | Online Platforms(s) | ☐Moodle ☒Microsoft Teams |
| 15. | Issuing Date | 19/11/2025 |
| 16. | Revision Date | |

**17. Course Coordinator:**

Name: Ola Hassouneh Contact hours:

Office number: Phone number:

Email: o.hassouneh@ju.edu.jo

**18. Other Instructors:**

| |
|---|
| Name:<br>Office number:<br>Phone number:<br>Email: |

**19. Course Description:**

| |
|---|
| 11 experiments each of 3 hrs/week duration: collection and analysis of data; vectors: force table; force and motion; Electric Field Mapping; Measurement of Resistance Ohm's Law; Kirchoff's Law; RC-Time Constant; Law-Pass and High Pass Filters; Diode Characteristics; Rectifiers. |

| **Program Intended Learning Outcomes:** (To be used in designing the matrix linking the intended learning outcomes of the course with the intended learning outcomes of the program) |
|---|
| SO1: Identify, formulate, and solve broadly-defined technical or scientific problems by applying knowledge of Mathematics and Science and/or technical topics to areas relevant to the discipline. |
| SO2: Formulate or design a system, process, procedure or program to meet desired needs |
| SO3: Develop and conduct experiments or test hypotheses, analyze and interpret data and use scientific judgment to draw conclusions |
| SO4: Communicate effectively with a range of audiences in oral or written forms and exhibit ethical and professional values. |
| SO5: Reflect the impact of technical and/or scientific solutions in economic, environmental, and societal contexts. |
| SO6: Function effectively on teams that establish goals, plan tasks, meet deadlines, and analyze risk and uncertainty. |
| |

| **PILO's** | ***National Qualifications Framework Descriptors*** | | |
|---|---|---|---|
| | **Competency (C)** | **Skills (B)** | **Knowledge (A)** |
| 1. | ☐ | ☐ | ☒ |
| 2. | ☐ | ☐ | ☒ |
| 3. | ☐ | ☐ | ☒ |
| 4. | ☐ | ☐ | ☒ |
| 5. | ☐ | ☐ | ☒ |

**21. Course Intended Learning Outcomes:** (Upon completion of the course, the student will be able to achieve the following intended learning outcomes)

Upon successful completion of this course students will be able to

1. Students completing this course should understand that physics is an experimental science and that observation and experimentation are as important as concepts and theories.
2. State the basic laws of physics in mechanics, electric, electronics and identify how they can be applied in various contexts.
3. Laboratory investigations should encourage students to add some of their own ideas to experiments and their interpretation.
4. Students will learn to present well-organized, logical and scientifically technical reports.
5. Perform simple physical experiments, using a variety of physics apparatus, including the gathering, interpretation and analysis of data.

| Course ILOs | The learning levels to be achieved | | | | | |
|---|---|---|---|---|---|---|
| | **Remembering** | **Understanding** | **Applying** | **Analysing** | **evaluating** | **Creating** |
| 1 | | **X** | | **X** | | |
| 2 | **X** | **X** | **X** | | | |
| 3 | | | **X** | **X** | | **X** |
| 4 | | | | **X** | **X** | **X** |
| 5 | | | **X** | **X** | **X** | |

**22. The matrix linking the intended learning outcomes of the course with the intended learning outcomes of the program:**

| Course ILOs / Program STOs | ILO (1) | ILO (2) | ILO (3) | ILO (4) | ILO (5) |
|---|---|---|---|---|---|
| STO (1) | **X** | **X** | **X** | | **X** |
| STO (2) | **X** | | | | **X** |
| STO (3) | | **X** | **X** | | **X** |
| STO (4) | | | | **X** | |
| STO (5) | | | | | |
| STO (6) | | | | | |

**23. Topic Outline and Schedule:**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Week** | **Lecture** | **Topic** | **Course Intended Learning Outcomes** | **Learning Methods (Face to Face/Blended / Fully Online)** | **Platform** | **Synchronous / Asynchronous Lecturing** | **Evaluation Methods** | **Resources** |
| 1 | 13/7-14/7 | Experimental Error | 1,3,4,5 | Fully online | Microsoft teams+ Moodle | | Lab-Report+ Oral Midterm Exam+ Oral Final Exam | Lab manual+ recorded experiment video |
| 2 | 25/7-26/7 | Collection & Analysis of Data | 1, 3, 4, 5 | Fully online | Microsoft teams+ Moodle | | Lab-Report+ Oral Midterm Exam+ Oral Final Exam | Lab manual+ recorded experiment video |
| 3 | 27/7-28/7 | Vectors | 1-5 | Fully online | Microsoft teams+ Moodle | | Lab-Report+ Oral Midterm Exam+ Oral Final Exam | Lab manual+ recorded experiment video |
| 4 | 1/8-2/8 | Electric Field Mapping | 1-5 | Fully online | Microsoft teams+ Moodle | | Lab-Report+ Oral Midterm Exam+ | Lab manual+ recorded experiment video |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Oral Final Exam | |
| 5 | 3/8-4/8 | Measurement of Resistance Ohm's Law | 1-5 | Fully online | Microsoft teams+ Moodle | | Lab-Report+ Oral Midterm Exam+ Oral Final Exam | Lab manual+ recorded experiment video |
| 6 | 8/8-9/8 | Kirchhoff's Laws | 1-5 | Fully online | Microsoft teams+ Moodle | | Lab-Report+ Oral Midterm Exam+ Oral Final Exam | Lab manual+ recorded experiment video |
| 7 | 10/8-11/8 | Force and Motion | 1-5 | Fully online | Microsoft teams+ Moodle | | Lab-Report+ Oral Midterm Exam+ Oral Final Exam | Lab manual+ recorded experiment video |
| 8 | 15/8-16/8 | RC Time Constant | 1-5 | Fully online | Microsoft teams+ Moodle | | Lab-Report+ Oral Midterm Exam+ Oral Final Exam | Lab manual+ recorded experiment video |
| 9 | 17/8-18/8 | Low-Pass And High-Pass Filter | 1-5 | Fully online | Microsoft teams+ Moodle | | Lab-Report+ Oral Midterm Exam+ Oral Final Exam | Lab manual+ recorded experiment video |
| 10 | | Diode characteristics | 1-5 | Fully online | Microsoft teams+ Moodle | | Lab-Report+ | Lab manual+ recorded |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | Oral Midterm Exam+ Oral Final Exam | experiment video |
| 11 | Rectifiers | 1-5 | Fully online | Microsoft teams+ Moodle | | Lab-Report+ Oral Midterm Exam+ Oral Final Exam | Lab manual+ recorded experiment video |

**24. Evaluation Methods:**

**Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements: Written only** Exams, HomeWorks, Discussion in the class.

| Evaluation Activity | Mark | Topic(s) | ILO/s Linked to the Evaluation activity | Period (Week) | Platform |
|---|---|---|---|---|---|
| Lab Reports | 30% | 1-11 | 1-5 | | |
| Quiz 1 | 10% | | | | |
| Quiz 2 | | | | | |
| Quiz3 | | | | | |
| Mid Exam | 20% | 1-5 | 1-5 | | |
| Final Exam | 40% | 1-11 | 1-5 | | |

**25. Course Requirements:**

| |
|---|
| (e.g.: students should have a computer, internet connection, webcam, account on a specific software/platform…etc.):<br><br>computer, internet connection |

**26. Course Policies:**

A- Attendance policies:

Class attendance is expected. Past experience has shown that students who do not attend the lectures invariably receive poor grades.

A student whose absence exceeds 15% of lectures will be dismissed.

B- Absences from exams and handing in assignments on time:

Absence from exams without an acceptable excuse means ZERO.

Some homework assignments will be graded. Some problems will be selected and discussed in an extra lecture for every chapter.

C- Health and safety procedures:

No special precautions.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

All these issues will be considered according to the regulations and laws adopted at the University of Jordan.

E- Grading policy + Weighting (i.e. weight assigned to exams as well as other student work)

Course work consists of laboratory work (30%), Midterm exam (20%), Quizzes (10%) and Final exam (40%).

F- Available university services that support achievement in the course:

Class Room, Some Office Toys, Library

G- Statement on Students with disabilities

Students with disabilities who need special accommodations for this class are encouraged to meet with the instructor and/or their academic advisor as soon as possible. In order to receive accommodations for academic work in this course, students must inform the course instructor and/or their academic advisor, preferably in a written format, about their needs no later than the 4th week of classes.

**27. References:**

A- Required book(s), assigned reading and audio-visuals:

A- Required book (s), assigned reading and audio-visuals:

**LABOROTARY EXPERIMENTS: PHYSICS LAB- 111. Nidal Ershaidat Bashar Lahlouh Ahmad Masadeh Moneeb Shatnawi Ola Hassouneh Ammar Alhusseini. Copyright, The University of Jordan (2017).**

**LABOROTARY EXPERIMENTS: PHYSICS LAB- 112. N.SALEH, B.BULOS, I.SHAHIN, A.HINDELEH. Copyright 1998. The University of Jordan.**

B- Recommended books, materials, and media:

1.F. Sears & M. Zemanskys, "University Physics with Modern Physics"14th edition, Pearson, Pearson Education Limited, 2016.

2. RaymondA.SerwayandJohnW.JewettJr.,"PhysicsForScientistsand Engineers with Modern Physics", 9th edition, (Thomson Learning, Belmont, CA, USA, 2014).

3. David Halliday, Robert Resnick, and Jearl Walker, "Extended

4. Giancoli, Physics for Scientists & Engineers with Modern Physics, Principles of Physics", 9th Edition John Wiley & Sons, Inc., 2011.

5. Bauer Westfall, University Physics with Modern Physics, McGrawHill, 2011.

6. https://www.ld-didactic.de/en/ld-didactic-download-center.html.

**28. Additional information:**

| | | |
|---|---|---|
| Name of the Instructor or the Course Coordinator: | Signature: | Date: |
| …… | ……..…… | ……..…… |
| Name of the Head of Quality Assurance Committee/ Department | Signature: | Date: |
| ……. | ……..…… | ……..…… |
| Name of the Head of Department | Signature: | Date: |
| ……. | ……..…… | ……..…… |
| Name of the Head of Quality Assurance Committee/ School or Center | Signature: | Date: |
| ……. | ……..…… | ……..…… |
| Name of the Dean or the Director | Signature: | Date: |
| ……. | ……..…… | ……..…… |