



| | |
|------------------------------------|------------------------------------|
| Faculty: Faculty of Science | |
| Department: Physics | Program: Bachelor's Program |
| Semester: Second semester | Academic year: 2022/2023 |

Course Plan

First: Course Information

| | | | |
|------------------------------|---|---------------------------|-----------------------|
| Course Title: | General Physics Lab 1 | Course ID: 0302111 | |
| Credit Hours: | 1 hours | Theoretical : 0 | Expremental: 1 |
| Level in JNQF | 6 | | |
| Prerequisite: 0300121 | Section Number: | Lecture Time: | |
| Type Of Course: | <input type="checkbox"/> <i>Obligatory Faculty Requirement</i> <input type="checkbox"/> <i>Elective University Requirement</i> <input type="checkbox"/> <i>Obligatory University Requirement</i> <input type="checkbox"/> <i>Faculty Requirement</i> <input type="checkbox"/> <i>Course Elective Specialty Requirement</i> <input checked="" type="checkbox"/> <i>Obligatory Specialization</i> | | |
| Type Of Learning : | <input checked="" type="checkbox"/> <i>Face-to-Face Learning</i> <input type="checkbox"/> <i>Blended Learning (2 Face-to-Face + 1Asynchronous)</i> <input type="checkbox"/> <i>Online Learning (2 Synchronous+1Asynchronous)</i> | | |

Second: Instructor's Information

| | | |
|--------------------------------|--|---------------|
| Name: Dr. Saleem Qashou | Academic Rank : Assistant professor | |
| Office Number: | Phone Number: ext.: | Email: |
| Office Hours: | | |

Third: Short Description of the Course

Students perform 10 experiments of 3 hr/week duration, The general concepts in mechanical physics , These experiments are: experimental and data analysis, measurements and uncertainties, vectors and forces in equilibrium, newton's second law of motion, projectiles motion, collision in two dimension, friction, simple pendulum, hook's law and rotational motion.

Fourth: Objectives

| |
|--|
| |
|--|

1. To conduct organized, experimental, scientific investigations
2. To report your observations and results clearly and completely
3. To draw conclusions from the results based on your understanding of the relevant physics
4. To study introductory physics via computer simulation experiments and exercises

Fifth: Learning Source

| | | | |
|---|---|---------------|-------------------------------|
| Designated Book: | General Physics Lab 1 manual | | 1st Edition |
| Author: | Physics Department at Zarqa university | Print: | Year: 2014 |
| Additional Sources: Website: | <ul style="list-style-type: none"> - Physics for Scientists and Engineers, 8th Ed, Raymond A. Serway 1-http://demoweb.physics.ucla.edu/content/experiment-2-microwave-optics. 2-http://cas.umkc.edu/physics/kruger/AdvancedPhysicsLab/experiments/microwave.pdf 3- http://lambdasys.com/products/category/6 4- https://sun.iwu.edu/~gspaldin/Expt1Syl.html | | |
| Teaching Type: | <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Laboratory <input type="checkbox"/> Workshop <input type="checkbox"/> MS Teams <input type="checkbox"/> Moodle | | |

Sixth: Learning Outcomes

| Number | Course learning output | CILOs Code | Assessment method** <i>Choose at least two methods</i> | Scores out of 100 State the total score identified for each CILO | Minimum acceptable Score/percentage (%) <i>The percentage should not be less than 50%</i> *** |
|---------------|--|-------------------|--|--|--|
| Knowledge | | | | | |
| **K1 | ▪ Basic knowledge: Make measurements using basic tools and instruments. | *PK1 | | 10 | |
| K2 | Basic Factual Knowledge: apply physics in a variety of physical settings. Build simple mathematical models that describe your experiments | PK2 | | 30 | |
| K3 | Concepts and Theories: Use the principles of | PK3 | | 15 | |

| | | | | | |
|---------------|---|-----|--|----|--|
| | <p>experimental and data analysis, measurements and uncertainties, vectors and forces in equilibrium, Newton's second law of motion, projectiles motion, and collision in two dimensions, friction, simple pendulum, hook's law and rotational motion</p> | | | | |
| Skills | | | | | |
| ***S1 | <p>Problem solving skills: The purpose of this course is to introduce some fundamental concepts of physics which build the foundation of all of Science and Engineering. The "Scientific Method" consists in conducting systematic, reproducible experiments and observations, analyzing and organizing the results, abstracting the important parameters and observables, and finally constructing models and theories about their relationships that lead to testable predictions.</p> | PS1 | | 10 | |
| S2 | <p>Modeling and Design: measurements on the apparatus that correspond to model variables In some labs, you will be required to design parts of the experiment</p> | PS2 | | | |
| S3 | <p>Application of Methods and Tools: Carrying out different experiments in physics using different techniques and analyzing the results using different types of analytical</p> | PS3 | | 14 | |

| | | | | | |
|-------------|--|-----|--|----|--|
| | methods. | | | | |
| S4 | Specific cognitions skill: Applying Statistical tools to test results and drawing conclusions. | PS4 | | 10 | |
| S5 | Comprehensive cognition skills: | PS5 | | | |
| Competences | | | | | |
| ****C1 | Analytic skills: Assist the technical factors that affect the operation of different materials properties. | PC1 | | 5 | |
| C2 | Strategic thinking: Formulate plans designed to achieve maximum useful of the special techniques that the student uses to solve experimentally physical problems. | PC2 | | | |
| C3 | <ul style="list-style-type: none"> -Thinking of more than one answer. - Respond the questions with many alternative questions - Generate ideas, answers, or varied questions - See a problem from different perspective. - Look for many different alternatives or directions. - Able to change the way of approach or thought. - Think of unusual ways to express their selves - Work and develop a product or idea - Add or detail of object, idea or situation so that it becomes more interesting | PC3 | | | |
| C4 | Communication: -Apply different physical principles in different disciplines of science, engineering, and medicine. | PC4 | | | |

| | | | | | |
|----|---|-----|--|---|--|
| | <ul style="list-style-type: none"> - Enhance the observation of individual to the natural phenomena. - Assist the student to participate in life science studies -Collaboration (contribution to a positive social environment). | | | | |
| C5 | <p>Teamwork and Leadership:</p> <ul style="list-style-type: none"> -Increase the cooperative behavior between the different research groups of different applications. -To work in stressful environment and within constraints. - To communicate effectively. - a learner performs within the process of a particular learning or assessment activity, such as extracting relevant information from a complex situation, drawing vector or force diagrams, creating other illustrations, or making an inference based on a previously achieved result -Use the efficient IT capabilities. - Management the tasks efficiently. -To acquire entrepreneurial skills. - Refer to relevant literature effectively. - Searching for the information and going to self-learning a new topic | PC4 | | 6 | |

Seventh: Course Structure

| Lecture Date | Teaching Outcome | Topics | Teaching *Procedures | Teaching ***Methods | References*** |
|--------------|--------------------------|-------------------------|----------------------|---------------------|---------------|
| 13/3/2023 | PK1,PK2,PS1,PS3,PS4;PS5; | Experimental errors and | Direct teaching, | Lecture discussion | |

| | | | | | |
|-----------|---------------------------------|---|----------------------------|----------------|---------|
| | | data analysis | Lab work, demonstration | | |
| 20/3/2023 | PK1,PK2,PS1,PS3,PS4;PS5;PC1,PC2 | Experiment 1: Measurements and uncertainties | Direct teaching | Practical work | Exp. 1 |
| 27/3/2023 | PK1,PK2,PS1,PS3,PS4;PS5; | Experiment 2: Vectors and force in equilibrium | Direct teaching | Practical work | Exp. 2 |
| 3/4/2023 | PK1,PK2,PS1,PS3,PS4;PS5 | Experiment 3: Newton's second law of motion | Direct teaching | Practical work | Exp.3 |
| 10/4/2023 | PK1,PK2,PS1,PS3,PS4;PS5 | Experiment 4: Projectiles motion | Direct teaching | Practical work | Exp. 4 |
| 17/4/2023 | PK1,PK2,PS1,PS2P,S4;PS5;PC1,PC2 | Experiment 5: Collision in two dimensions | Direct teaching | Practical work | Exp. 5 |
| 1/5/2023 | PK1,PK2,PS1,PS3,PS4;PS5 | Experiment 6: Friction | Direct teaching | Practical work | Exp.6 |
| 8/5/2023 | PK1,PK2,PS1,PS3,PS4;PS5; | Off week | Direct teaching | Practical work | |
| 15/5/2022 | PK1,PK2,PS1,PS3,PS4;PS5; | Experiment 7: Simple pendulum | Direct teaching | Practical work | Exp.7 |
| 27/5/2022 | PK1,PK2,PS1,PS3,PS4;PS5 | Experiment 8: Hook's law and simple harmonic motion. | Direct teaching | Practical work | Exp.8 |
| 29/5/2023 | PK1,PK2,PS1,PS3,PS4;PS5;PC1,PC2 | Experiment 9: Conservation of energy I | Direct teaching | Practical work | Exp.9 |
| 5/6/2023 | PK1,PK2,PS1,PS3,PS4;PS5;PC1,PC2 | Experiment 10: Conservation of energy 2 | Direct teaching | Practical work | Exp. 10 |
| | PK1,PK2,PS1,PS3,PS4;PS5 | Final Exam | Direct teaching | Assessment | |

Education procedures: (Direct, synchronous, asynchronous). ** Teaching methods: Lecture, video.....). ** Reference: .(Pages of the book, recorded lecture, video....)

Eight: Assessment methods

| Methods | Fully Electronic Education | Integrated Teaching | Direct Teaching | K1 | K2 | K3 | S1 | S3 | S4 | C1 | C5 |
|-----------------------------|----------------------------------|------------------------|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|----------|----------|
| | | | | Reports | | | 30 | | 30 | | |
| Quiz | | | 20 | 4 | | 4 | 4 | 4 | 4 | | |
| Final | | | 50 | 6 | | 11 | 6 | 10 | 6 | 5 | 6 |
| Total out of 100 | | | 100 | 10 | 30 | 15 | 10 | 14 | 10 | 5 | 6 |

Ninth: Course Polices

- Meeting the deadline for the lecture.
- Commitment to interaction and participation.
- Interactive lectures will be given in person or through a platform (MS Teams).
- Duties and tests will be given in person or through a platform (Moodle).
- Commitment to the right appearance in front of the camera with the proper background.
- University regulations for attendance and absence from lectures and examinations are in force.
- Academic Integrity: Fraud or moral impersonation are unacceptable and are punishable according to university regulations and instructions.

| Approval | Name | Date | Signature |
|--------------------|------|------|-----------|
| Head of Department | | | |
| Faculty Dean | | | |