

Course Description Form of General Physics

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| 1. Course Name: | |
| General Physics | |
| 2. Course Code: | |
| SSD-1205 | |
| 3. Semester / Year: | |
| Second semester/ 2024-2025 | |
| 4. Description Preparation Date: | |
| 15/1/2025 | |
| 5. Available Attendance Forms: | |
| Full time (theoretical lecture and practical lecture) weekly | |
| 6. Number of Credit Hours (Total) / Number of Units (Total) | |
| 5 hours (2 hours theoretical and 3 hours practical per week) for 14 weeks, number of units 3.5 units | |
| 7. Course Administrator's Name (Mention All, If More Than One Name) | |
| Name : Dr. Ali Kadhim Ahmed Email : alikahdim@uodiyala.edu.iq | |
| 8. Course Objectives | |
| Course Objectives: Graduating students who are able to: | <ul style="list-style-type: none">- Learn about the most basic concepts and theories in physics and how to correctly deduce and derive physical laws mathematically- Providing a scientific and applied basis for students to serve the requirements of studying students of the Facul |
| 9. Teaching and Learning Strategies | |

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| Strategy | In-person lectures for 14 weeks, including two monthly exams, daily exams, and scientific reports |
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10. Course Structure

Theoretical part

| Week | Hours | Required learning outcomes | Unit or Subject | Learning Method | Evaluation Method |
|------|-------------------------------|--|-----------------|---|--|
| 1 | 2 | Natural states of matter, general properties of matter, mechanical properties of matter | General Physics | Lecture Dialogue & discussion Brainstorming | Daily, monthly and final exams and daily reports |
| 2 | 2 | Propositions of kinetic theory, molecular dimensions and interface distances, brownian motion | General Physics | Lecture Dialogue & discussion Brainstorming | Daily, monthly and final exams and daily reports |
| 3 | 2 | Molecular velocities, molecular forces, collisions between molecules, thermal properties of matter | General Physics | Lecture Dialogue & discussion Brainstorming | Daily, monthly and final exams and daily reports |
| 4 | 2 | Boyle's law, compressibility and elasticity | General Physics | Lecture Dialogue & discussion Brainstorming | Daily, monthly and final exams and daily reports |
| 5 | 2 | Mechanics: laws of force and motion, laws of motion in one dimension, free fall of objects | General Physics | Lecture Dialogue & discussion Brainstorming | Daily, monthly and final exams and daily reports |
| 6 | Semester 1 st exam | | | | |
| 7 | 2 | About Newton's laws of motion: the first law of motion, the second law of motion, Newton's law of general attraction | General Physics | Lecture Dialogue & discussion Brainstorming | Daily, monthly and final exams and daily reports |
| 8 | 2 | Water: its molecular structure, its hydrogen isotropy, and its properties as a solvent | General Physics | Lecture Dialogue & discussion Brainstorming | Daily, monthly and final exams and daily reports |
| 9 | 2 | Surface tensile strength, seam angle, capillary property | General Physics | Lecture Dialogue & discussion Brainstorming | Daily, monthly and final exams and daily reports |
| 10 | 2 | Diffusion, osmotic phenomenon | General Physics | Lecture Dialogue & discussion Brainstorming | Daily, monthly and final exams and daily reports |

| 11 | 2 | Viscosity, Newton's law of viscosity | General Physics | Lecture Dialogue & discussion Brainstorming | Daily, monthly and final exams and daily reports |
|-----------------------|-------------------------------|--|----------------------|--|--|
| 12 | Semester 2 nd exam | | | | |
| 13 | 2 | Viscosity, Newton's law of viscosity law and Stoke's law, its derivation and applications | General Physics | Lecture Dialogue & discussion Brainstorming | Daily, monthly and final exams and daily reports |
| 14 | 2 | Volumetric and weight relations, body density, porosity, surface area and quality, Optical devices, X-rays | General Physics | Lecture Dialogue & discussion Brainstorming | Daily, monthly and final exams and daily reports |
| Practical part | | | | | |
| Week | Hours | Required learning outcomes | Unit or Subject Name | Learning Method | Evaluation Method |
| 1 | 3 | The experiment of finding ground acceleration simple using a pendulum | General Physics | Observation Dialogue & discussion | Daily, monthly and final exams and daily reports |
| 2 | 3 | Finding the density of objects (Non- solid hollow) | General Physics | Observation Dialogue & discussion | Daily, monthly and final exams and daily reports |
| 3 | 3 | Finding the density of objects hollow | General Physics | Observation Dialogue & discussion | Daily, monthly and final exams and daily reports |
| 4 | 3 | The experiment of finding the surface tensile coefficient by the capillary tube method | General Physics | Observation Dialogue & discussion | Daily, monthly and final exams and daily reports |
| 5 | 3 | Experiment with finding relative humidity using a humidifier (with wet and dry editors) | General Physics | Observation Dialogue & discussion | Daily, monthly and final exams and daily reports |
| 6 | Semester 1 st exam | | | | |
| 7 | 3 | Experiment with finding the mixing ratio of water vapor in the air | General Physics | Observation Dialogue & discussion | Daily, monthly and final exams and daily reports |
| 8 | 3 | Experiment of finding the | General Physics | Observation Dialogue & discussion | Daily, monthly and final exams and daily reports |

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| | | refractive index of a glass material for a triple prism using a spectrometer | | | |
| 9 | 3 | satellite image classification: Unsupervised classification | General Physics | Observation Dialogue & discussion | Daily, monthly and final exams and daily reports |
| 10 | 3 | The experiment of finding the internal resistance and electromotive force of an electric cell | General Physics | Observation Dialogue & discussion | Daily, monthly and final exams and daily reports |
| 11 | 3 | Atmospheric pressure measurement experiment using Boyle's law | General Physics | Observation Dialogue & discussion | Daily, monthly and final exams and daily reports |
| 12 | Semester 2 nd exam | | | | |
| 13 | 3 | The experiment of finding the viscosity of water by the flow method, The experiment of finding the speed of sound in the air | General Physics | Observation Dialogue & discussion | Daily, monthly and final exams and daily reports |
| 14 | 3 | Experience of X-rays | General Physics | Observation Dialogue & discussion | Daily, monthly and final exams and daily reports |

11. Course Evaluation

Daily exams with discussion questions within the lecture
The degree of participation in questions related to the academic subject

12. Learning and Teaching Sources

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| Required Textbooks (Curricular Books, If Any) | Fundamentals of physics |
| Main References (Sources) | Daniel Shum: shum abstracts series theories and problems in university physics |
| Recommended Books and References (Scientific Journals, Reports...) | Iraqi academic journal |
| Electronic References, Websites | |