

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

Physics: The course provides general information about physics in its many branches such as mechanics, physics, thermodynamics, electricity, magnetism, quantum mechanics and relativity. It should be noted that some laws, such as Newton's law of motion and conservation of energy

1. Teaching Institution	Shatt Al-Arab University – Eng. College
2. University Department/Centre	Civil Engineering Department
3. Course title/code	Physics
4. Modes of Attendance offered	Class attendance
5. Semester/Year	1 st semester / 1 st year
6. Number of hours tuition (total)	45 hrs
7. Date of production/revision of this specification	2024
8. Aims of the Course	<ul style="list-style-type: none">All phenomena in the natural world are measured in terms of a few basic relationships between measurable properties of matter and energy. These relationships are called laws of physics, and they are formulas that are characterized by a high degree of generality and are derived from a large number of phenomena. The goal of physics can be summarized as expressing these basic relationships (these laws) in a mathematical form, so that the student can use the logical rules of mathematics to apply the laws to specific cases and thus obtain quantitative results. The most important laws of physics are in the field of civil engineering, which requires the engineer to know these laws for the purpose of reflecting them on the engineering reality related to mathematics, engineering foundations, fluid movement, hydraulic installations, and others.

9. Learning Outcomes, Teaching, Learning and Assessment Method

A- Knowledge and Understanding

A1- Clarify the basic concepts of physics.

A2- Acquisition of skills in dealing with and understanding the laws of physics in a simplified manner.

A3- Acquire basic skills as an introduction to the physical properties necessary to describe all measurements physical. These properties, called dimensions, are length, mass, time, temperature, and electric current. The number of particles and luminous intensity. And the derivation of other physical quantities such as force, energy and momentum

B. Subject-specific skills

B1 - The ability to know and understand physics

B2 - The ability to think about a solution to any problem.

B3 - Writing scientific reports.

B4 - The ability to gain experience in dealing with physical quantities.

Teaching and Learning Methods

- Readings, self-learning, panel discussions.
- Exercises and activities in the lecture.
- Homework.
- Directing students to some websites to benefit and develop their capabilities.
- Conducting seminars to explain and analyze a specific issue and find solutions to it

Assessment methods

- Interacting within the lecture.
- Homework and reports.
- Short exams (quizzes).
- Semester and final exams.

C. Thinking Skills

C1- Attention: Arousing the students' attention by implementing one of the applied programs on the display screen in the hall.

C2- Response: Follow up the student's interaction with the material displayed on the screen.

C3- Attention: Follow up on the interest of the student who interacted more with the presented material, by increasing this interaction by requesting other programs and applications to display.

C4 - Forming the direction: meaning that the student is sympathetic to the presentation and may have an opinion about the direction of the presented topic and defend it.

C 5- Formation of value behavior: meaning that the student reaches the top of the emotional ladder, so that he has a stable level in the lesson and does not become lazy or fidgety.

Teaching and Learning Methods

- The usual theoretical presentation method using the writing board and depending on the style (how and why) of the subject and according to the curriculum of the subject.
- The theoretical presentation method using the (data show) device and depending on the method (how and why) of the subject and according to the subject curriculum.
- The method of laboratory display using special devices for measuring the different properties of the substance under experiment.

Assessment methods

- Direct questions in a manner (how and why) for the subject during the theoretical and practical lecture.
- Sudden exams during the theoretical and practical lecture.
- Quarterly exams for the theoretical and practical side.
- Final exams for the theoretical and practical side.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1- Develop the student's ability to perform the duties and deliver them on time

D2 - Logical and programmatic thinking to find programmatic solutions to various problems

D3 - developing the student's ability to dialogue and debate

D4 - Develop the student's ability to deal with modern technology, especially the Internet

10. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	3		Introduction to physics	2 hours theoretical + 1 hour practical	Class work
2	3		units and dimensions	2 hours theoretical + 1 hour practical	Class work and quiz
3	3		vectors	2 hours theoretical + 1 hour practical	Class work
4	3		Statics	2 hours theoretical + 1 hour practical	Class work and quiz
5	3		Kinematics	2 hours theoretical + 1 hour practical	Class work
6	3		Body dynamics	2 hours theoretical + 1 hour practical	Class work
7	3		Newton's laws of motion	2 hours theoretical + 1 hour practical	Class work
8	3		Work, energy and power	2 hours theoretical + 1 hour practical	Class work and quiz
9	3		Momentum	2 hours theoretical + 1 hour practical	Class work
10	3		Rotational motion	2 hours theoretical +	Class work

				1 hour practical	
11	3		Harmonic motion	2 hours theoretical + 1 hour practical	Class work
12	3		Flexibility	2 hours theoretical + 1 hour practical	Class work and quiz
13	3		Fluids	2 hours theoretical + 1 hour practical	Class work
14	3		The heat	2 hours theoretical + 1 hour practical	Class work
15	3		The sound	2 hours theoretical + 1 hour practical	Class work

11. Infrastructure	
1- Required reading: · Books · COURSE MATERIALS · OTHER	Fundamentals of Physics by Halliday and Fundamentals University Physics by Alonso University Physics Volume 1 by Samuel J. Ling
2. Key references (sources)	
A- Recommended books and references (scientific journals, reports ,....	
B- Electronic references, websites	Reputable websites. Libraries sites in some international universities.

12. Course development plan
Adding new subjects to the curricula within the development of the course by no more than 5%. Adding new references