

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	College of Engineering / Al Ayen Iraq University
2. University Department/Centre	Department of Biomedical Engineering
3. Course title/code	Engineering Mechanics / MDER211
4. Modes of Attendance offered	Direct attendance
5. Semester/Year	Semester
6. Number of hours tuition (total)	80 hours
7. Date of production/revision of this specification	2024

8. Aims of the Course

The course aims to provide second-year students with basic knowledge of engineering mechanics. Everything related to:

Two-dimensional and three-dimensional systems, force systems, two-dimensional force system, torque, couple, resultants, equilibrium, two-dimensional, free body diagrams, structures, plane trusses, frames, static fluids, friction, belts, distributed forces, center of mass.

Enabling students to access engineering science by understanding how to perform correct engineering analysis and how to deal with laws, equations, illustrations, and other data and linking data together to reach outputs.

Enabling the student to be able to analyze, deduce and conclude.

9• Learning Outcomes, Teaching ,Learning and Assessment Methods

A- Cognitive goals .

- A1- Knowing how to deal with different types of forces and the concepts associated with them.
- A2- Knowing the analysis of motion of bodies (kinematics of bodies).
- A3- Distinguishing between two-dimensional systems and three-dimensional systems.
- A4- Identifying the couple
- A5- Identifying torque
- A6 Identifying free body diagrams

B. The skills goals special to the course.

- B1- Ability to deal with mathematical equations.
- B2- Ability to analyze drawings, shapes and projections.
- B4- Ability to understand data and inputs.
- B5- Ability to understand the writing of private law to solve every question.

Teaching and Learning Methods

Direct explanation, discussions, collaborative learning

Assessment methods

- 1- Monthly Exams
- 2- Participation and Discussion during Lecture
- 3- Assignments
- 4- Final Exams

C. Affective and value goals

- A1- The student solves the homework exercises
- A2- The student tries to understand the logical structure of engineering mechanics
- A3- The students do their best to understand the principles of engineering mechanics
- A4- The student participates seriously in the discussions in the engineering mechanics lecture

Teaching and Learning Methods

Using several teaching methods, including: discussion method, lecture method, cooperative learning strategy, and team learning strategy.

Assessment method

- Oral tests
- Written tests
- Written tests include: - Objective tests, Essay tests include: Multiple-choice tests,

Open-ended tests

D. General and rehabilitative transferred skills (other skills relevant to employability and personal development)

D1- Work efficiently within a team

D2- Organize ideas

D3- Deal with problems effectively

D4- Ability to deal with pressure and work with high quality

10.Course Structure

Week	Hours	ILOs	Unit/ Module or Topic Title	Teaching Method	Assessment Method
2-1	8	2D and 3D systems	2D system 3D system	direct	exam
4-3	8	Force systems, 2D force system, 3D force system, Distributed forces	Power system with two systems X, Y Power system with two systems X, Y, Z	direct	exam
5-4	8	Two-way force analysis, three-way force analysis	Force analysis in two directions X, Y, then force analysis in three directions X, Y, Z	direct	exam
6-5	8	Torque, couple, results	Torque, force, rotation, and mechanical problems for the couple	direct	exam
7-6	8	Balance, 2D	Balance chart	direct	exam
8-7	8	Free body diagrams, structures, plane trusses	Free body diagrams, structural diagrams	direct	exam
10-9	8	frames, static fluids	Frames of reference Static fluid problems	direct	exam
12-11	8	Friction, belts	Types of friction, belts	direct	exam
14-13	8	Center of mass, free body	Center of mass diagram,	direct	exam

		diagram analysis	free body		
15-14	8	Forces in structures	Analysis of the forces in it	Direct	exam

11. Infrastructure

1 . Books Required reading:	Meriam and Kraige (5th Ed) - solutions
2. Main References (Sources)	Meriam and Kraige (5th Ed) - solutions
A- Recommended books and References (scientific journals, reports...).	fundamental of engineering mechanics Mechanical Engineering
B- Electronic references, Internet sites ...	https://www.pinterest.com/pin/pdf--695524736227569086/

12. The development of the curriculum plan

Remove some vocabulary from the curriculum because it does not fit the name of engineering mechanics, such as the word fluids, in my opinion. Add some videos that fit each study topic. The exams of the cup and the exams of the extension should include objective and essay questions.

