TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

The model description provides a brief description of the main features of the course and the scientific outputs that the model student is expected to achieve if the student takes advantage of the learning opportunities available for the course. It should be compared with the description of the program.

1. Teaching Institution	Shatt Al-Arab University College
2. University Department/Centre	Civil Engineering Department
3. Course title/code	Engineering Mechanic 1
4. Modes of Attendance offered	Class attendance
5. Semester/Year	1st semester / 1st year
6. Number of hours tuition (total)	75 hrs
7. Date of production/revision of this specification	2022
8. Aims of the Course	
To understand the procedure for analysis of static objects; concepts of force, moment, and mechanical equilibrium. To analyze forces and moments in two and three dimensions due to concentrated and distributed forces in various systems such as beams, frames and trusses.	

9· Learning Outcomes, Teaching, Learning and Assessment Method
A- Knowledge and Understanding On successful completion of this course students will be able to:
A1 Define Newton's laws of motion and Recall trigonometric laws and apply to the addition and decomposition of vectors quantities.
A2 Identify the moment of a force and calculate its value about a specified axis. Define the moment of a couple. Describe the concept of dry friction and analyse the

	equilibrium of rigid bodies subjected to this force.
A3	Construct "Free Body Diagrams" of real-world problems and apply Newton's Laws of motion and vector operations to evaluate equilibrium of particles and bodies. Apply the principles of equilibrium of particles and bodies to analyse the forces in planar truss members.
A4	Discuss the concepts of ``centre of gravity'' and ``centroids'' and compute their location for bodies of arbitrary shape. Apply the concepts used for determining centre of gravity and centroids to find the resultant of a generally distributed loading. Use methods learnt for equilibrium of bodies and the resultant of a generally distributed loading to compute the internal forces in beams. Generalize the procedure to construct bending moments and shear force diagrams (internal forces) and utilise this information in engineering design.

B. Subject-specific skills
B1 - Apply quantitative and numerical methods for the purpose of solving structural engineering problems.
B2 - Use basic knowledge to research new technologies.
B3 - Derive and evaluate the information needed to apply engineering analysis methods to unfamiliar problems.

Teaching and Learning Methods

• Scientific and research skills are developed through teaching and learning activities. Analysis and problem-solving skills are further developed by means of a set of problems prepared by the lecturers in small study groups and all work submitted is evaluated and responded to.

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	5	Introduction	principles of statics	Lecture	Written exam
2	5	Force analysis	Force analysis	Lecture	Written exam
3	5	Force analysis	Force analysis	Lecture	Written exam
4	5	Force analysis	Force analysis	Lecture	Written exam
5	5	Equilibrium	Equilibrium	Lecture	Written exam
6	5	Equilibrium	Equilibrium	Lecture	Written exam
7	5	Equilibrium	Equilibrium	Lecture	Written exam
8	5	friction	friction	Lecture	Written exam
9	5	friction	friction	Lecture	Written exam
10	5	truss	truss	Lecture	Written exam
11	5	truss	truss	Lecture	Written exam
12	5	centroid	centroid	Lecture	Written exam
13	5	centroid	centroid	Lecture	Written exam
14	5	Moment of	Moment of	Lecture	Written exam

		inertia	inertia		
15	5	Moment of inertia	Moment of inertia	Lecture	Written exam

11. Infrastructure	
1- Required reading: · Books · COURSE MATERIALS · OTHER	1. Hibbeler R. C., Engineering Mechanics, Statics , 14th ed, 2015 2-M. E. Plesha, Engineering Mechanics Statics, 1st ed, 2010. 3-A. Bedford, Engineering Mechanics Statics, 5th ed, 2008
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