Form: Course Syllabus		
	Form Number	EXC-01-02-02A
	Issue Number and Date	2/3/24/2022/2963 05/12/2022
	Number and Date of Revision or Modification	
	Deans Council Approval Decision Number	2/3/24/2023
	The Date of the Deans Council Approval Decision	23/01/2023
	Number of Pages	06

1.	**Course Title**	Statics and Strength of Materials
2.	**Course Number**	0908241
3.	**Credit Hours (Theory, Practical)**	3 Hours. Theoretical
	Contact Hours (Theory, Practical)	3 Hours weekly
4.	**Prerequisites/ Corequisites**	General Physics I
5.	**Program Title**	Bachelor's Degree
6.	**Program Code**	08
7.	**School/ Center**	School of Engineering
8.	**Department**	Mechatronics Engineering
9.	**Course Level**	2rd Year
10.	**Year of Study and Semester (s)**	2023/2024 2nd semester
11.	**Other Department(s) Involved in Teaching the Course**	
12.	**Main Learning Language**	English.
13.	**Learning Types**	☐Face to face learning ■Blended ☐Fully online
14.	**Online Platforms(s)**	■Moodle ■Microsoft Teams
15.	**Issuing Date**	20/2/2024
16.	**Revision Date**	20/2/2024

17. Course Coordinator:

Name: Eng. Samer Salah	Contact hours: Sun, Tue & Thu 11:30-12:30
Office number:2B	Phone number: None
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18. Other Instructors:

Name: Office number: Phone number: Email: Contact hours:

19. Course Description:

Force vectors, force system and resultants, equilibrium, structural analysis, geometric properties and distributed loads, internal loads, stress and strain, mechanical properties of materials, axial load, torsion, bending, combined loads, stress and strain transformations, buckling of columns.

20. Program Intended Learning Outcomes: (To be used in designing the matrix linking the intended learning outcomes of the course with the intended learning outcomes of the program)

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.

3. An ability to communicate effectively with a range of audiences.

4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.

5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

21. Course Intended Learning Outcomes: (Upon completion of the course, the student will be able to achieve the following intended learning outcomes)

1. Identify the main tools used for solving a problem in mechanics (e.g., free-body diagrams, problem formulation, accuracy) as well as describe how are they related.
2. Perform force and moment equilibrium calculations of structural members.
3. Define geometric properties of structural members such as Center of Gravity and Moment of Inertia.
4. Analyze internal loadings of structural members.
5. Recognize the effect of the mechanical properties of materials.
6. Perform stress and strain calculations for axial and torsion loads.

Course ILOs	**The learning levels to be achieved**					
	Remembering	**Understanding**	**Applying**	**Analysing**	**evaluating**	**Creating**
1		√	√	√		
2		√		√		
3		√		√		
4		√		√		
5		√		√	√	
6		√		√		

22. The matrix linking the intended learning outcomes of the course with the intended learning outcomes of the program:

Program ILOs / Course ILOs	ILO (1)	ILO (2)	ILO (3)	ILO (4)	ILO (5)	ILO (6)	ILO (7)
1							
2	√						
3							
4							
5	√						
6							

23. Topic Outline and Schedule:

Week	Lecture	Topic	ILO/s Linked to the Topic	Learning Types (Face to Face/ Blended/ Fully Online)	Platform Used	Synchronous / Asynchronous Lecturing	Evaluation Methods	Learning Resources
1	1.1	Ch.1-General Principles (1)	1	F to F	Moodle			
	1.2	Ch.1-General Principles (2)	1	Blinded	Teams			
2	2.1	Ch.1-General Principles (3)	1	F to F	Moodle			
	2.2	Ch.2-Force Vectors (1)	2	Blinded	Teams			
3	3.1	Ch.2-Force Vectors (2)	2	F to F	Moodle			
	3.2	Ch.2-Force Vectors (3)	2	Blinded	Teams			
4	4.1	Ch.2-Force Vectors (4)	2	F to F	Moodle			
	4.2	Ch.3-Force system resultant (1)	2	Blinded	Teams			
5	5.1	Ch.3-Force system resultant (2)	2	F to F	Moodle			
	5.2	Ch.3-Force system resultant (3)	2	Blinded	Teams			
6	6.1	Ch.3-Force system resultant (4)	2	F to F	Moodle			
	6.2	Ch.4-Equilibrium of rigid body (1)	2	Blinded	Teams			
7	7.1	Ch.4-Equilibrium of rigid body (2)	2	F to F	Moodle			
	7.2	Ch.4-Equilibrium of rigid body (3)	2	Blinded	Teams			
8	8.1	Ch.4-Equilibrium of rigid body (4)	2	F to F	Moodle			
	8.2	Ch.4-Equilibrium of rigid body (5)	2	Blinded	Teams			
9	9.1	Ch.6-Center of gravity (1)	3	F to F	Moodle			
	9.2	Ch.6-Center of gravity (2)	3	Blinded	Teams			
10	10.1	Ch.6-Center of gravity (3)	3	F to F	Moodle			
	10.2	Ch.6-Center of gravity (4)	3	Blinded	Teams			
11	11.1	Ch.7-Stress and Strain (1)	4	F to F	Moodle			
	11.2	Ch.7-Stress and Strain (2)	4	Blinded	Teams			
12	12.1	Ch.8-Mechanical Properties of Material (2)	5	F to F	Moodle			
	12.2	Ch.8-Mechanical Properties of Material (2)	5	Blinded	Teams			
13	13.1	Ch.9-Axial Load.	6	F to F	Moodle			
	13.2	Ch.10-Torsion (1)	6	Blinded	Teams			
14	14.1	Ch.10-Torsion (2)	6	F to F	Moodle			
	14.2	Ch.11-Bending (1)	6	Blinded	Teams			
15	15.1	Ch.11-Bending (2)	6	F to F	Moodle			
	15.2	Software Application.	6	Blinded	Teams			

24. Evaluation Methods:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	ILO/s Linked to the Evaluation activity	Period (Week)	Platform
Quizzes	10	Ch.1 – Ch.4	1-13	4th	On campus
Projects	20	Center of gravity	1-13	13th	On campus
Midterm Exam	30	Ch.1 – Ch.4	1-7	7th	On campus
Final Exam	40	Ch.6 – Ch.11	8-13	16th	On campus

25. Course Requirements:

Students should have a computer, internet connection, webcam, account on a Mathwork, Matlab Software, textbook and Handouts.

26. Course Policies:

A- Attendance policies:

Students are expected to attend every class session and they are responsible for all material, announcements, schedule changes, etc., discussed in class. The university policy regarding the attendance will be strictly adhered to.

B- Absences from exams and submitting assignments on time:

There will be no makeup exams for any exam that will be taken during the course. exceptions to this rule is restricted only to the following cases: -

- Death of only first order relatives (father, mother, sister, or brother).
- Hospital entry (in-patient) during the time of the examination.

Any other cases will be given the zero mark in the corresponding exam.

C- Health and safety procedures:

None.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

Department and college instructions regarding cheating and misappropriation will be applied.

E- Grading policy:

Assessment	Mark
Quizzes	10
Project	20
Midterm exam	30
Final exam	40
Total	100

F- Available university services that support achievement in the course:

27. References:

A- Required book(s), assigned reading and audio-visuals:

1. Statics and Mechanics of Materials, Russell C. Hibbeler, Prentice Hall, 2016, 5th Edition.

B- Recommended books, materials, and media:

28. Additional information:

None

Name of the Instructor or the Course Coordinator: ……**Eng.Samer Salah**……	Signature: ……..……	Date: ……..……
Name of the Head of Quality Assurance Committee/ Department ……	Signature: ……..……	Date: ……..……
Name of the Head of Department ……	Signature: ……..……	Date: ……..……
Name of the Head of Quality Assurance Committee/ School or Center ……	Signature: ……..……	Date: ……..……
Name of the Dean or the Director ……	Signature: ……..……	Date: ……..……