



COURSE **SyllabusAccording**

Course Name: Strength of Materials Lab

Course Number: 04082233

General Course Information:

Course title	Strength of Materials Lab
Course number	04082233
Credit hours	(0 Hr Theory, 1 Hr practical)
Contact hours	-
Prerequisites/corequisites	Strength of Materials 04082232
Academic Program	Renewable Energy Engineering
Program code	REE
Awarding institution	Isra University
Faculty	Engineering
Department	Renewable Energy Engineering
Level of course	3 rd Year
Academic year /semester	2 nd 2021-2022
Awarded qualification	B. Sc.
Other department(s) involved in teaching the course	-
Language of instruction	English
Date of production/revision	29 Mar 2022

Course Coordinator:

Coordinator's Name: Dr. Ismail Hdaib
Office No.: 4210
Office Phone: 2486
Office Hours: Su. 13.00 – 14.00
Email: ismail.hdaib@iu.edu.jo

Other Instructors:

Instructor's Name:
Office No.:
Office Phone:
Office Hours:
Email:

Course Description (English/Arabic):

English	Strength of Materials Lab. (1 semester hour) Laboratory course. Applying Impact, Buckling, Beam Deflection, Torsion, Tensile, Stiffness, Hardness & Creep concepts to practical applications.
Arabic	مختبر مقاومة المواد. (1 ساعة فصل دراسي) مقرر مختبر. تطبيق مفاهيم التأثير والتواء وانحراف الشعاع والالتواء والشد والصلابة والصلادة والزحف على التطبيقات العملية.

Text Book: Author(s), Title, Publisher, Edition, Year, Book website.

1. Strength of Materials Laboratory Experiments Manual.

References: Author(s), Title, Publisher, Edition, Year, Book website.

Mechanics of Materials Sixth Edition By Ferdinand P Beer, E Russell Johnston, John T Dewolf & David F Mazurek.

Course Educational Objectives (CEOs):

1.	Perform Tensile Test, Impact Test, Creep Test.
2.	Perform Stiffness Test, Hardness Test, Buckling Test.
3.	Perform Beam Deflection Test, & Torsion Test.
4.	Obtain Mechanical Properties of Materials

Intended Learning Outcomes (ILO's):

	Intended Learning Outcomes (ILO's)	Relationship to CEOs	Contribution to PLOs
A	Knowledge and Understanding:		
B	Intellectual skills:		
C	Subject specific skills:		
C1	Conduct experiments on Impact, Buckling, Beam Deflection, Torsion, Tensile, Stiffness, Hardness & Creep collect data, perform analysis and interpret results to draw valid conclusions through standard test procedures	1, 2, 3,	1, 3, 7
C2	Determine Mechanical properties and performance Materials.	4,5	1, 3, 7

Weekly Schedule (please chose the type of teaching)

☒ (3 hrs Face – To - Face)

☐ (2 hrs Face – To - Face+1 hr Asynchronous) (Hybrid)

☐ (3 hrs Online)

Week	First Hour (.....)	Second Hour (.....)	Third Hour (.....)	Ach. ILOs	Ach. PLOs	Descriptor s*
1	Preliminary Test	Preliminary Test	Preliminary Test	A1	1,2	K
2	Tensile Test	Tensile Test	Tensile Test	A1	1,2	S
3	Stiffness Test	Stiffness Test	Stiffness Test	A1,A2	1,2	S
4	Torsion Test	Torsion Test	Torsion Test	A1,A2	1,2	S
5	Impact Test	Impact Test	Impact Test	A1,A2	1,2	S
6	Revision & Quiz	Revision & Quiz	Revision & Quiz	A2	1,2	C
7	Midterm Exam	Midterm Exam	Midterm Exam	A2	1,2	C
8	Beam Deflection Test	Beam Deflection Test	Beam Deflection Test	A2	1,2	S
9	Hardness Test	Hardness Test	Hardness Test		1,2	S
10	Buckling Test	Buckling Test	Buckling Test	A1,A2 ,B1	1,2	S
11	Creep Test	Creep Test	Creep Test	A1,A2 ,B1	1,2	S
12	Revision	Revision	Revision	A1,A2 ,B1	1,2	K
13	Reports Session & Quiz	Reports Session & Quiz	Reports Session & Quiz	A1,A2 ,B1	1,2	C
14	Final exam	Final exam	Final exam	A1,A2 ,B1	1,2	C

* K: Knowledge, S: Skills, C: Competency

Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

- (3 hrs Face – To - Face)
- (2 hrs. Face – To - Face +1 hr Asynchronous) (Hybrid)
- (3 hrs Online)
- Course Videos
- Practice Labs
- Discussion Forums
- Quizzes
- Other Interactive online activities

Course Policies:

A- Attendance policies:

The maximum allowed absences is 15% of the lectures.

B- Absences from exams and handing in assignments on time:

Midterm exam can be retaken based on approval of excuse by the instructor's discretion.

Not handing assignment on time will incur penalties.

C- Academic Health and safety procedures

D- Honesty policy regarding cheating, plagiarism, and misbehaviour:

Cheating, plagiarism, misbehaviour will result in zero grade and further disciplinary actions may be taken.

E- Grading policy:

- All homework is to be posted online through the e-learning system.
- Exams will be marked within 72 hours and the marked exam papers will be handed to the students.
- Online Activities (Course Videos, Practice labs, Discussion Forums, Reports, & Quizzes) **20%**
- Midterm **30%**
- Final Exam **50%**

F- Available university services that support achievement in the course: **E-Learning Platform, Labs, Library.**

Required equipment:

- PC / Laptop with webcam and mic
- Internet Connection
- Access to Online Compiles such as:
Access to the IU E-Learning Platform at: <https://elearn.iu.edu.jo/>

Assessment Tools implemented in the course:

Final Exam
Midterm Exam
Quizzes
Practice Labs
Discussion Forums

Program Learning Outcome (PLOs):

Program Learning Outcomes describe what students are expected to know and be able to do by the time of graduation. These relate to the knowledge, skills, and behaviours that students acquire as they progress through the program. A graduate of the () program will demonstrate		Bloom Taxonomy Levels*
a	An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	1
b	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
c	An ability to communicate effectively with a range of audiences.	3
d	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.	4
e	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.	2
f	An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.	2
g	An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.	3

*Bloom Taxonomy Levels

Level#	1	2	3	4	5	6
Level Name	Knowledge	Comprehension	Application	Analysis	Evaluation	Synthesis

Responsible Persons and their Signatures:

Course Coordinator	D. Ismail Hdaib	Completed Date	29 / 3 / 2022
		Signature	
Received by (Department Head)	D. Zakarya Al Omary	Received Date	29 / 3 / 2022
		Signature	