

Course E-Syllabus

1	Course title	Human Factors in Engineering
2	Course number	0906481
3	Credit hours	3
	Contact hours (theory, practical)	Sun, Tue, and Thur 11:30-12:30, Mon. Wed. 10:00-11:30
4	Prerequisites/corequisites	0906384
5	Program title	B.Sc. Industrial Engineering
6	Program code	
7	Awarding institution	University of Jordan
8	School	Engineering
9	Department	Industrial Engineering
10	Level of course	Fourth Year
11	Year of study and semester (s)	Fall (1 st semester) 2020/2021
12	Final Qualification	BSc Industrial Engineering
13	Other department (s) involved in teaching the course	
14	Language of Instruction	English
15	Teaching methodology	<input type="checkbox"/> Blended <input checked="" type="checkbox"/> Online
16	Electronic platform(s)	<input checked="" type="checkbox"/> Moodle <input checked="" type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype <input type="checkbox"/> Zoom <input type="checkbox"/> Others.....
17	Date of production/revision	Oct. 6 2020

18 Course Coordinator:

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19 Other instructors:

Name:
Office number:
Phone number:
Email:

Name:
Office number:
Phone number:
Email:

20 Course Description:

Physical work and physical and physiological capacity and lumination, improving worker efficiency, anthropometry mental work and information input processing and decision making, design of displays and control, study of physical and social environment the work place.

21 Course aims and outcomes:

A- Aims:

This is a mandatory class as it represents basic knowledge and understandings that are important for the Industrial engineer to design jobs that integrate man and machine. The basic knowledge gained after completing this course will enable students to:

- Protect the safety and health of workers
- Optimize the performance of workers
- Gain an edge over the competition by deep understanding of the needs and capacities of humans.

B- Intended Learning Outcomes (ILOs):

#	After successful completion of this course, the student will be able to	Mapping with SOs
CLO1	Understand the impacts of practicing human factors engineering on workplaces, including injury prevention and safety, minimize error and improve performance, and improving competitiveness through designing for comfort	2,4
CLO2	Understand and use anthropometric data in design.	1,6
CLO3	Knowledgeable in the basic ergonomics study methodologies including, biomechanics, indirect calorimetry, and psychophysiology.	1
CLO4	Identify risk factors and understand the etiology of ergonomics related injuries	1,4
CLO5	Know and systematically apply risk controls to risk factors	2
CLO6	Capable of addressing job design through general rules including designing for sitting and standing work, choosing the appropriate heights for work surfaces, lighting requirements, hot and cold work environments, and effects of noise and vibration	1,2
CLO7	Know the specific ergonomics issues and able to apply principles of human factors engineering in, use and selection of hand tools, manual material handling tasks, and office work	1,2,7
CLO8	Understand the terminology of man-machine interface, and the selection and layout design of displays and controls	2,4
CLO9	General knowledge and appreciation of organizational factors and the sources and effects of stress at work	4
CLO10	General knowledge and appreciation of cognitive ergonomics including the human capacity limitation in memory and attention	4

22. Topic Outline and Schedule:

Week	Lecture	Topic	Teaching Methods*/platform	Evaluation Methods**	References
1	1.1	Introduction	e-learning	Self-Paced	Video recorded lecture/PPT
	1.2	Continue	MS Teams	Q&A / Discussion	
	1.3	Continue	e-learning	Quiz 1	
2	2.1	Measurements of the human body (Anthropometry)	e-learning	Self-Paced	Video recorded lecture/PPT
	2.2	Continue.	MS Teams	Q&A / Discussion	
	2.3	Continue.	e-learning	Quiz 2	
3	3.1	The Anatomical and Mechanical Structure of the Human Body	e-learning	Self-Paced	Video recorded lecture/PPT
	3.2	Continue.	MS Teams	Q&A / Discussion	
	3.3	Continue.	e-learning	Quiz 3	
4	4.1	How the Body Does Its Work	e-learning	Self-Paced	Video recorded lecture/PPT
	4.2	Continue.	MS Teams	Q&A / Discussion	
	4.3	Continue.	e-learning	Quiz 4	
5	5.1	Continue.	e-learning	Self-Paced	Video recorded lecture/PPT
	5.2	Continue.	MS Teams	Q&A / Discussion	
	5.3	Continue.	e-learning	Quiz 5	
6	6.1	Continue.	e-learning	Self-Paced	Video recorded lecture/PPT
	6.2	Continue.	MS Teams	Q&A / Discussion	
	6.3	Mid Exam	On campus	Mid Exam	
7	7.1	How the Body Interacts with Its Environment	e-learning	Self-Paced	Video recorded lecture/PPT
	7.2	Continue.	MS Teams	Q&A / Discussion	
	7.3	Continue.	e-learning	Quiz 6	
8	8.1	Continue.	e-learning	Self-Paced	Video recorded lecture/PPT
	8.2	Continue.	MS Teams	Q&A / Discussion	
	8.3	Continue.	e-learning	Quiz 7	
9	9.1	Human Senses	e-learning	Self-Paced	Video recorded lecture/PPT
	9.2	Continue	MS Teams	Q&A / Discussion	
	9.3	Continue	e-learning	Quiz 8	
10	10.1	Continue	e-learning	Self-Paced	Video recorded lecture/PPT
	10.2	Continue	MS Teams	Q&A / Discussion	
	10.3	Continue	e-learning	Quiz 10	

11	11.1	Design for the Moving Body	e-learning	Self-Paced	Video recorded lecture/PPT
	11.2	Continue	MS Teams	Q&A / Discussion	
	11.3	Continue	e-learning	Quiz 11	
12	12.1	Handling Loads	e-learning	Self-Paced	Video recorded lecture/PPT
	12.2	Continue	MS Teams	Q&A / Discussion	
	12.3	Continue	e-learning	Quiz 12	
13	13.1	Computer workstation	e-learning	Self-Paced	Video recorded lecture/PPT
	13.2	Continue	MS Teams	Q&A / Discussion	
	13.3	Continue	e-learning	Quiz 13	
14	14.1	Hand Tools	e-learning	Self-Paced	Video recorded lecture/PPT
	14.2	Continue	MS Teams	Q&A / Discussion	
	14.3	Continue	e-learning	Quiz 14	
15	15.1	Continue	e-learning	Self-Paced	Video recorded lecture/PPT
	15.2	Continue	MS Teams	Q&A / Discussion	
	15.3	Continue	e-learning	Quiz 15	

- Teaching methods include: Synchronous lecturing/meeting (MS Teams); Asynchronous lecturing/meeting (Self-Paced)
- Evaluation methods include: Homework, Quiz, Exam, pre-lab quiz...etc

23 Evaluation Methods:

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

Evaluation Activity	Mark	Topic(s)	Period (Week)	Platform
Quizzes	20	Weekly	Weekly	Moodle
Mid Exam	30	All covered	Week 6	TBD
Final	50	All covered	Week 16	TBD

24 Course Requirements (e.g: students should have a computer, internet connection, webcam, account on a specific software/platform...etc):

computer, internet connection, webcam and microphone

25 Course Policies:

- A- Attendance policies:
- B- Absences from exams and submitting assignments on time:
- C- Health and safety procedures:
- D- Honesty policy regarding cheating, plagiarism, misbehavior:
- E- Grading policy:
- F- Available university services that support achievement in the course:

26 References:

- A- Required book(s), assigned reading and audio-visuals:
Ergonomics; How to Design for Ease & Efficiency (Second or Third Edition), Karl Kroemer, Henrike Kroemer and Katrin Kroemer-Elbert.
- B- Recommended books, materials and media:
Several references and will be made available to students through e-learning.

27 Additional information:

The B.Sc. in industrial Engineering program enables students to achieve, by the time of graduation the following program learning outcome (SOs)				
1	<i>an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics</i>	6	<i>an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions</i>	
2	<i>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</i>	7	<i>an ability to acquire and apply new knowledge as needed, using appropriate learning strategies</i>	
3	<i>an ability to communicate effectively with a range of audiences</i>			
4	<i>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</i>			
5	<i>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</i>			

Name of Course Coordinator: Dr. Awwad Dababneh Signature: ----- Date: 8/10/2020

Head of Curriculum Committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of Curriculum Committee/Faculty: ----- Signature: -----

Dean: ----- Signature: -----