The University of Jordan
Faculty of Engineering
Industrial Engineering Department
2nd Semester 2023/2024

Course name:	Human Factors in Engineering
Course code:	0906481
Credits hours	Three credit hours
Contact hours/room:	Section 1: Sunday, Tuesday, Thursday: 11:30-12:30 Section 2: Monday, Wednesday 10:00-11:30
Course instructor's name, E-mail, and phone:	Dr. Shahed Obeidat Sh.obeidat@ju.edu.jo -------
Course Coordinator:	
Text book:	Ergonomics; How to Design for Ease & Efficiency (Second Edition), Karl Kroemer, Henrike Kroemer and Katrin Kroemer-Elbert.
Other reference(s):	Lecturer notes
Course Description:	Muscular work and identification of physical and physiological abilities, raising the efficiency of muscle work, measurement of human body, mental work and identification of mental abilities, means of receiving information and methods of processing and decision-making in humans, designing devices and means of displaying information machine controls, design of displays, and control the study of social and physical environmental effects on worker performance.
Providing Department:	Industrial Engineering
Prerequisite Course:	0906384 Methods Engineering & Work Measurements
Course type	

Assessment Methods:

Method	**Weight %**	**Date**

Mid Exam	**30%**	
Second exam	**20**%	
Final Exam	**50%**	
#	**After successful completion of this course, the student will be able to**	**SO**

Course Learning Outcomes:

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	1	

		methodologies including, biomechanics, indirect calorimetry, and psychophysiology.		
	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	

	Week #	**Topic**
Brief list of topics	1	Introduction
	2-3	The Anatomical and Mechanical Structure of the Human Body
	4-5	How the Body Does Its Work
	6	MID term exam
	7-8	How the Body Interacts with Its Environment
	9-10	Human Senses.
	11	Designing to Fit the Moving Body
	12	Handling Loads
	13	The Office (Computer) Workstation
	14	Hand Tools
	15	Selection, Design, and Arrangement of Controls and Displays.
	16	Term project
Important Notes:	• Do not hesitate to ask questions. • You are required to bring a notebook and take notes in classes. • Students are expected to attend every class session and they are responsible for all material, announcements, schedule changes, etc., discussed in class. • Discuss the assignments among yourselves. • Don't Cheat; direct copying of others work will NOT be allowed or tolerated and will result in a reduction of grade. If you are found to be cheating in any way, on an exam or assignment, even	

	signing the roll sheet for another student, you will be given an "F" for the course. There will be no exceptions. • All cases of academic dishonesty will be handled in accordance with university policies and regulations. JU policy requires the faculty member to assign ZERO grade (F) if a student misses 15% of the classes that are not excused, and 20% of the classes that are excused. • Students are expected to be ready to take a quiz any time they have a class. There will be no make-up quizzes or homework. • Any students with disabilities who need accommodations in this course are encouraged to speak with the instructor as soon as possible to make appropriate arrangements for these accommodations.

The program student outcomes that support the program educational objectives. The Attainment of these outcomes prepares graduates to enter the professional practice of engineering. Student outcomes are outcomes (1) through (7; the description of these outcomes is shown in this table .and any additional outcomes may be articulated by 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