



The University of Jordan
School of Engineering
Industrial Engineering Department
2nd Semester 2020/2021

Course name:	Human Factors in Engineering		
Course code:	96481		
Credits hours	Three credit hours		
Contact hours/room:	Section 1 (001 IE): Sunday, Tuesday , Thursday: 11:30-12:30 Section 2 (001 IE): Monday, Wednesday 10:0-11:30-		
Course instructor's name, E-mail, and phone:	Awwad Dababneh, PhD dababneh@ju.edu.jo 22933		
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:	Physical work and physical and physiological capacity and lamination, 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.		
Providing Department:	Industrial Engineering		
Prerequisite Course:	0906384 Methods Engineering & Work Measurements		
Course type			
Assessment Methods:	Method	Weight %	Date
	Quizzes And Student professionalism	5%	---
	Mid Exam	30%	
	Projects	15%	
	Final Exam	50%	
	#	After successful completion of this course, the student will be able to	Mapping with SOs
	CL O1	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
	CL O2	Understand and use anthropometric data in design.	1,6
	CL O3	Knowledgeable in the basic ergonomics study methodologies including, biomechanics, indirect calorimetry, and psychophysiology.	1
	CL O4	Identify risk factors and understand the etiology of ergonomics related injuries	1,4
	CL O5	Know and systematically apply risk controls to risk factors	2
	CL O6	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

	CL O7	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
	CL O8	Understand the terminology of man-machine interface, and the selection and layout design of displays and controls	2,4
	CL O9	General knowledge and appreciation of organizational factors and the sources and effects of stress at work	4
	CL O10	General knowledge and appreciation of cognitive ergonomics including the human capacity limitation in memory and attention	4
Brief list of topics	Week #	Topic	
	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 and solving problems	
	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	Project evaluation(submission of the project and an evaluation)	
16	Selection, Design, and Arrangement of Controls and Displays.		
Important Notes:	<ul style="list-style-type: none"> • 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 home works. • 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. 		
<i>The B.Sc. in industrial Engineering program enables students to achieve, by the time of graduation the following program learning outcome (SOs)</i>			
1	<i>An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.</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>
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>	6	<i>an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions</i>
3	<i>An ability to communicate effectively with a range of audiences.</i>	7	<i>an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.</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>		