



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

Course name:	Human Factors and Work Measurement Lab		
Course code:	96482		
Credits hours	one credit hours		
Contact hours/room:	Five sections every day from 01:00-04:00		
Course instructor's name, E-mail, and phone:	Eng Rawan Tarawneh rtarawneh@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):	Human factors Lab sheets		
Course Description:	The human factors and work measurement lab studies the 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.		
Providing Department:	Industrial Engineering		
Prerequisite Course:	96481 Human factors in engineering		
Course type	Practical and theoretical		
Assessment Methods:	Method	Weight %	Date
	Student professionalism	5%	---
	Mid Exam	30%	
	Laboratory reports and quiz	25%	
	Final Exam	40%	
	#	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	6
	CLO2	Understand and use anthropometric data in design. To learn how to locate and describe reference points for taking anthropometric measurements.	2,6,5
	CLO3	To learn how to use the measuring instruments. To determine an appropriate set of anthropometric measurements to be able to design a workplace, a product or a tool. To express anthropometric measures in percentiles of any similar population for which data are available.	2,6
	CLO4	To learn how to measure the Grip strength and Estimate whole body strength due to the portability and practicality of grip dynamometry. To be able to measure general body strength and endurance limit of human body , analyze the factors affecting human strength.	2,6
	CLO5	Capable of addressing job design through general rules including designing for manual material handling tasks, sitting and standing work, choosing the appropriate heights for work surfaces.	2,6,7

	CLO6	Applying RWL formula to address high risks of job design and meet the requirements of health and safety needs.	1,2,6
	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	2
	CLO8	To be able to work and function in teams and assigning responsibility according to skill set for the team members ,and to integrate the team input in order to get a conclusion of the task.	5
	CLO9	To be able to defined the learning curve phenomenon, and to identify eye-hand coordination as well as arm hand coordination tasks , measuring the level of visual acuity in steadiness and aiming and the ability to detect and discriminate small objects in some work applications.	2,6

Brief list of topics	Week #	Topic
	1	Introduction
	2-3	Anthropometry and Workspace design
	4	Measuring body strength
	5	Strength evaluation system
	6-7	Measuring physical workload
	8	Mid term exam
	9-10	RWL from Psychophysical Data and NIOSH lifting equation.
	11-12	the learning curve phenomenon using the Mirror Tracing Apparatus
	13-14	Aiming and steadiness
Important Notes:	<ul style="list-style-type: none"> • 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 	

<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>	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 producesolutions 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>		

