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

Course name:	**Methods Engineering and work measurement**			
Course code:	0906384			
Credits hours	3			
Contact hours/room:	Section 1: (Sunday, Tuesday, Thursday) (11:30-12:30) small auditorium Section 2: (Monday, Wednesday) (11:30-13:00) IE 101			
Course instructor's name, E-mail, and phone:	Rawan Tarawneh rtarawneh@ju.edu.jo 22940			
Course Coordinator:				
Text book:	Groover (2014). Work Systems: The Methods, Measurement and management of Work. First edition, Pearson.			
Other reference(s):	Freivalds, and Niebel, (2013). Niebel's Methods, Standards and Work Design, 13th edition, McGraw-Hill.			
Course Description:	Study of manufacturing and service methods and processes, analytical techniques for of process flow and efficiency, improving processes study of time and movement, standardization of methods and time measurements, project.			
Providing Department:	Industrial Engineering			
Prerequisite Course:	Statistics I 0936251			
Course type	Required course			
Assessment Methods:	**Method**	**Weight %**	**Date**	
	Mid exam	30		
	Quizzes + homework	20		
	Final Exam	50		

Course Learning Outcomes:	#	**After successful completion of this course, the student will be able to**	**SO**	
	CLO1	Use the different traditional IE charts and diagrams (operation chart, flow process chart, form process chart, worker process chart, operator machine, operator multi-machine, gang chart, left hand right hand chart,…) for any process that produce a product or service.	**2**	
	CLO2	Improve the process through the use of the cost reduction formula (eliminate, combine rearrange , simplify of the different process activities)	**2**	
	CLO3	Plan and carryout direct time study.	**1**	
	CLO4	Plan and carryout work sampling study	**1**	
	CLO5	Develop standard time	**2**	
	CLO6	Understand the importance of standard time, and use it to answer different questions (how many machines do we need?, how many operators should we	**2**	

		hire?, how fast to move conveyers?, how much will the product cost?...etc.		
	CLO7	Select the suitable work measurement technique for any process.	**1,2**	
	CLO8	Define and measure efficiency and effectiveness for any process or organization.	**2**	

	Week #	**Topic**
Brief list of topics	1	Historical background about motion and time study. (Frank and Lillian Gilbreth, Fredrick Taylor, Deming, and others)
	2	Importance of motion and time study.
	3-4	The lean manufacturing, and introduction to TOYOTA Production System.
	4	Manual assembly line.
	5-8	Charting and diagramming techniques for operations analysis, Operation charts Process charts Flow diagrams Activity charts Process map
	9	Introduction to Work measurement
	10,11	Direct Time Study
	13, 14	Work Sampling
	15	Incentives
	16	Schedule flexibility
Important Notes:	• 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.	

The B.Sc. in industrial Engineering program enables students to achieve, by the time of graduation the following program learning outcome (SOs)

1	*an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics*	**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*
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*	*6*	*an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions*
3	*an ability to communicate effectively with a range of audiences*	*7*	*an ability to acquire and apply new knowledge as needed, using appropriate learning strategies*
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*		