



Course Specifications

Course Title:	Work Study Laboratory
Course Code:	ME 495
Program:	Mechanical Engineering (UG)
Department:	Mechanical & Industrial Engineering
College:	College of Engineering
Institution:	Majmaah University

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A. Course Identification

1. Credit hours: 01 (0-0-2)
2. Course type
a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/>
b. Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
3. Level/year at which this course is offered: 09, Fourth Year
4. Pre-requisites for this course (if any): ME 111
5. Co-requisites for this course (if any): None

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	30	80
2	Blended	0	10
3	E-learning	0	10
4	Correspondence	0	0
5	Other	0	0

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	Lecture	15
2	Laboratory/Studio	15
3	Tutorial	0
4	Others (specify)	0
	Total	30
Other Learning Hours*		
1	Study	0
2	Assignments	05
3	Library	0
4	Projects/Research Essays/Theses	05
5	Others (specify)	--
	Total	10

* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

<p>1. Course Description Introduction to Work Study (WS). Productivity and WS. WS approaches. Basic procedure of method study involving job selection, recording facts, critical examination etc. String diagram, Multiple activity chart, Travel chart. Principles of motion economy. Two-handed chart. Fundamental hand motions. Micro-motion and Memo-motion studies. Cyclegraph and Chrono-cyclegraph. Work Measurement (WM). Work sampling. Time study. Computerized WM. PMTS: MTM, Work factor and Standard data. Wage payment and incentive plans</p>
<p>2. Course Main Objective</p>
<p>1. to analyze and evaluate the productivity of people and machines in manual and semi-automated environment and also focus on improving product quality</p>
<p>2. the student will be able to use the tools and techniques of method study (Charts/diagrams)</p>
<p>3. the student will be able to use the tools and techniques of work measurement</p>

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge:	
1.1	Recognize and understand concept of work measurement	a
1.2	Outline and describe time study and related charts preparation	
1.3	Demonstrate use of process quality improvement and process control	k
2	Skills :	
2.1	Differentiate applicability of productivity improvement by	b
2.2	Explain and estimate use of and applicability of control charts	
3	Competence:	
3.1	Understand work sampling and draw sampling curves	h
3.2	Rating factors under variable rating	

C. Course Content

No	List of Topics	Contact Hours
1	Time Study	04
2	Operation Flow Process Chart	04
3	Activity Chart (Right/Left Hand Activity Chart)	04
4	String Diagram	04
5	Motion Study (Therbligs Technique)	04
6	Control charts for Variables	04
7	Control, charts for Attributes	04
8	Exam	02
Total		30

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	Knowledge		
1.1	Recognize and understand concept of work measurement	Demonstration in laboratory and exercising	Record /Final Exam
1.2	Outline and describe time study and related charts preparation	Demonstration in laboratory and exercising	
1.3	Demonstrate use of process quality improvement and process control	Demonstration in laboratory and exercising	Record/Final Exam Assignment
2.0	Skills		
2.1	Differentiate applicability of productivity improvement by	Demonstration in laboratory and exercising	Record/Final Exam
2.2	Explain and estimate use of and applicability of control charts	Demonstration in laboratory and exercising	
3.0	Competence		
3.1	Understand work sampling and draw sampling curves	Explaining and show draw curves and show it changes with change in sample and acceptance numbers document	Final Exam
3.2	Rating factors under variable rating	Demonstration in laboratory and exercising	

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quiz 1	03	05
2	Assignment/Homework	05	05
3	Mid Term 1	07	20
4	Quiz 2	10	05
5	Mid Term2	11	20
6	Assignment/Home work	12	05
7	Final Exam	15	40
			100

*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :

Lecture hours as given in Time Tables : Tuesday 12.0 Noon -1:50 PM
Laboratory

Office hours :	:Every day from 10 AM -11 AM (Office location 044-02-17)
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F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	Introduction to Work Study, International Labor Office: Geneva, 4th Revised edition.
Essential References Materials	Work measurement and Methods Improvement, Lawrence, SA, John Wiley & Sons.
Electronic Materials	Materials placed in Blackboard.
Other Learning Materials	Course related material is provided in Black Board.

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Laboratory
Technology Resources (AV, data show, Smart Board, software, etc.)	Smart board is provided
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Students have their own PCs

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of Teaching	Students	Indirect Assessment
CLOs achievement	Faculty	Direct/Indirect Assessments
Learning Resources	Students	Indirect Assessment
Course Contents	Students	Indirect Assessment

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	Department Council
Reference No.	1/34/9767
Date	25/02/1432 H