



**DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING
INDUSTRIAL ENGINEERING PROGRAM, BSC.**

Course Syllabus

1. Course number and name

IE 334 Work Measurements

2. Credits and contact hours

(3+0) 3 credit hours, 3 contact hours

3. Course Type

Onsite

4. Instructor's or course coordinator's name

Dr. Hanan Saleet

5. Textbook information

Mikell P. Groover, Work Systems and the Methods, Measurement, and Management of Work, Pearson Education, Inc., ISBN: 0-13-140650-7

a. Other supplemental materials

-handouts.

6. Specific course information

a. Catalog description

Method study, time-motion study, design of the work place using ergonomic principles, job description and job evaluation, operations timing study, standard times and activity- sampling. Charting and diagramming

b. Prerequisites or co-requisites

Prerequisite: IE 231 Statistics and Probability I

c. The course is:

Required in the Industrial Engineering program.

7. Specific goals for the course

a. Course outcomes:

After completion of the course, students are expected to be able to:

1. Illustrate manual work and worker-machine systems
2. Use the techniques of micro-motion and macro-motion study for operational modeling and analysis.
3. Conduct a work station design using motion study principles



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4. Utilize techniques of time study such as predetermined time standards, and stopwatch time study for examining, modeling and solving production and ergonomic related problems.
5. Discuss charting and diagramming for operations analysis
6. **Analyze** of Work systems
7. **Use** AVIX software as a lean tool

b. The following student outcomes are addressed by the course:

- SO-(d) an ability to function on multidisciplinary teams
- SO-(f) an understanding of professional and ethical responsibility
- SO-(g) an ability to communicate effectively

8. Learning Outcomes and their Alignment with Program Educational Objective (PEO's), Methods of Delivery, and Assessment Methods:

Learning Outcomes	Program PEOs	Method of Delivery	Assessment Method
Course Outcomes			
CO-(1): Illustrate manual work and worker-machine systems	-	Lectures (Example and Problems)	Discussion
CO-(2): Use the techniques of micro-motion and macro-motion study for operational modeling and analysis.	-	Lectures (Example and Problems)	Assignment
CO-(3): Conduct a work station design using motion study principles	-	Lectures (Example and Problems)	Assignment
CO-(4): Utilize techniques of time study such as predetermined time standards, and stopwatch time study for examining, modeling and solving production and ergonomic related problems.	-	Lectures (Example and Problems)	Assignment
CO-(5): Discuss charting and diagramming for operations analysis	-	Lectures (Example and Problems)	Quiz
CO-(6): Analyze of Work systems	-	Lectures (Example and Problems)	Project



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CO-(7): Use AVIX software as a lean tool	-	Lectures (Example and Problems)	Project
Student Outcomes			
SO-(d) an ability to function on multidisciplinary teams	2	Lectures (Example and Problems)	Midterm Exam
SO-(f) an understanding of professional and ethical responsibility	1, 3	Term Project	Term Project- Part 2
SO-(g) an ability to communicate effectively	1	Term Project	Term Project- Part 1

9. Weekly Teaching Plan

Lecture	Topic	Method of Delivery
Lec_1	Chapter 1: Introduction	Lecture
Lec_2	Chapter 1: Introduction	Lecture
Lec_3	Interactive videos- Chapter 1	Lecture
Lec_4	Chapter 2: Manual Work and Worker–Machine Systems	Lecture
Lec_5	Chapter 2: Manual Work and Worker–Machine Systems	Lecture
Lec_6	Chapter 2: Manual Work and Worker–Machine Systems	Lecture
Lec_7	Chapter 2: Manual Work and Worker–Machine Systems	Lecture
Lec_8	Chapter 2: Manual Work and Worker–Machine Systems	Lecture
Lec_9	Discussion boards- Chapter 9: Charting and Diagramming Techniques for Operations Analysis	Lecture
Lec_10	Chapter 9: Charting and Diagramming Techniques for Operations Analysis	Lecture
Lec_11	Chapter 9: Charting and Diagramming Techniques for Operations Analysis	Lecture
Lec_12	Chapter 9: Charting and Diagramming Techniques for Operations Analysis	Lecture
Lec_13	Chapter 9: Charting and Diagramming Techniques for Operations Analysis	Lecture
Lec_14	Chapter 9: Charting and Diagramming Techniques for Operations Analysis	Lecture
Lec_15	Chapter 10: Motion Study and Work Design	Lecture



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Lec_16	Chapter 10: Motion Study and Work Design	Lecture
Lec_17	Chapter 10: Motion Study and Work Design	Lecture
Lec_18	Chapter 10: Motion Study and Work Design	Lecture
Lec_19	Chapter 10: Motion Study and Work Design	Lecture
Lec_20	Chapter 10: Motion Study and Work Design	Lecture
Lec_21	Chapter 10: Motion Study and Work Design	Lecture
Lec_22	Chapter 10: Motion Study and Work Design	Lecture
Lec_23	Chapter 10: Motion Study and Work Design	Lecture
Lec_24	Chapter 12: Introduction to Work Measurement	Lecture
Lec_25	Chapter 12: Introduction to Work Measurement	Lecture
Lec_26	Chapter 12: Introduction to Work Measurement	Lecture
Lec_27	Chapter 12: Introduction to Work Measurement	Lecture
Lec_28	Chapter 12: Introduction to Work Measurement	Lecture
Lec_29	Chapter 12: Introduction to Work Measurement	Lecture
Lec_30	Chapter 13: Direct Time Study	Lecture
Lec_31	Chapter 13: Direct Time Study	Lecture
Lec_32	Chapter 13: Direct Time Study	Lecture
Lec_33	Chapter 13: Direct Time Study	Lecture
Lec_34	Chapter 13: Direct Time Study	Lecture
Lec_35	Chapter 13: Direct Time Study	Lecture
Lec_36	Chapter 13: Direct Time Study	Lecture
Lec_37	Chapter 13: Direct Time Study	Lecture
Lec_38	Chapter 14: Predetermined Motion Time Systems	Lecture
Lec_39	Chapter 14: Predetermined Motion Time Systems	Lecture
Lec_40	Chapter 14: Predetermined Motion Time Systems	Lecture
Lec_41	Chapter 14: Predetermined Motion Time Systems	Lecture
Lec_42	Chapter 14: Predetermined Motion Time Systems	Lecture
Lec_43	Chapter 14: Predetermined Motion Time Systems	Lecture
Lec_44	Chapter 14: Predetermined Motion Time Systems	Lecture
Lec_45	Chapter 14: Predetermined Motion Time Systems	Lecture

10. Grade distribution



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Assessment	Grade	Date
- Midterm Exam	30%	
-Project Reports /Quizzes/ Seminar /Homeworks)	20%	
- Final Examination	50%	

Make-up exams will be offered for valid reasons. It may be different from regular exams in content and format.