

IME 205 WORK DESIGN

Course Syllabus -Spring 2011

Time: MW 5:30-8:30 pm
Location: Room:G-211, Parkview Campus
Instructor: Dr. Tycho K. Fredericks (Office: E-223)
Phone: 269.276.3360; Fax: 269.276.3353; E-mail: tycho.fredericks@wmich.edu,
Office hours: 4:00 – 5:00 M or by appointment only.
Co-Instructor: Fehime Utkan (Office: E-229)
E-Mail: fehime.utkan@wmich.edu
Office Hours: 2:00-3:00 T or by appointment only

2010-2011 Catalog Description:

Design jobs and work environments in business and industry. Topics include techniques for job design, ergonomics in the workplace, and work measurement. A semester project requiring the design of a workstation is required. Prerequisite: IME 1020.

Textbook:

Frievalds, A., (2009). Neibel's Methods, Standards and Work Design, 12th Ed. McGraw Hill.

Teaching Assistant

Mr. James Burns, E-229 Parkview Campus, E-mail: j.burns@wmich.edu, Office Hours: 8:30-9:30 pm Wednesday

Prerequisites by Topic:

1. Principles of objective presentation of factual material, logical organization, summarization, ethical practices, information gathering techniques, oral communications, and listening through practical applications. (IME 102)
2. Basic knowledge of spreadsheets, drafting software, presentation software, World Wide Web, and e-mail.
3. Basic knowledge of statistics; mean standard deviation, percentiles.

Objectives:

In accordance with the above stated course description, at the conclusion of the semester the students should have the ability to:

1. Analyze and evaluate the productivity of people and machines in manual and semi-automated environment. (a,b,e,f,j,k)
2. Design and redesign tasks and workstations to fit employees. (a,c,e,f,k)
3. Adequately apply standard work measurement techniques to various work environments. (a,b,e,f,j,k)
4. Apply the knowledge, skills, and abilities learned in Work Design and apply them to an industry-based problem. (a,b,c,d,e,f,g,j,k)

Topics by week: (Tentative)

Week	Date	Topic	Chapters
1	<i>January 10</i>	Introduction, Problem Solving and Work Design Methods	Chapter 1
	<i>January 12</i>	Lab	
2	<i>January 17</i>	MLK Day (No Class)	
	<i>January 19</i>	Lab	
3	<i>January 24</i>	Process of six sigma, Motivation Theory	Chapter 18
	<i>January 26</i>	Lab	
4	<i>January 31</i>	Process analysis tools	Chapter 2
	<i>February 2</i>	Lab	
5	<i>February 7</i>	Recording and analysis tools	Chapter 2
	<i>February 9</i>	Lab	
6	<i>February 14</i>	Operations Chart, Written Standard Practices, FMEA	
	<i>February 16</i>	Lab	
7	<i>February 21</i>	Plant Layout	Chapter 3
	<i>February 23</i>	Lab	
8	<i>February 28</i>	Spring Break	
	<i>March 2</i>		
9	<i>March 7</i>	Time Study	Chapter 10
	<i>March 9</i>	Lab	
10	<i>March 14</i>	Time Study, Allowances	
	<i>March 16</i>	Exam 1	
11	<i>March 21</i>	Principles of Motion Economy, Environmental Factors, Manual Work Design	Chapter 4 & 11
	<i>March 23</i>	Lab	
12	<i>March 28</i>	Predetermined Time Systems	Chapter 13
	<i>March 30</i>	Lab	
13	<i>April 4</i>	Work Sampling	Chapter 14
	<i>April 6</i>	Exam II	
14	<i>April 11</i>	Tools of Six Sigma	
	<i>April 13</i>	Lab	
15	<i>April 18</i>	Special topics, Semester projects + Presentations Due	
	<i>April 20</i>	Lab	
16		Final Exam- TBA	

Evaluation:

Exam 1, Exam 2, Final Exam	55 %
Lab (Semester Project, Design Challenges)	25 %
Quiz & Homework	20%

Grading Scale (Tentative)

90-100	A
88-89.9	BA
80-87.9	B
78-79.9	CB
70-77.9	C
68-69.9	DC
60-67.9	D
Below 60	E

Performance Criteria

The students should be able to:

Objective 1

- 1.1 Accurately apply standard problem solving techniques to multiple types of work environments. (1,3,4,5)
- 1.2 Determine the appropriate type of chart to use to solve problems identified in objective 1.1 (1,3,4,5)
- 1.3 Accurately interpret data gathered from charts. (1,3,4,5)

Objective 2

- 2.1 Collect reliable and reproducible data on humans and workstations. (2,3,4,5)
- 2.2 Accurately interpret the statistical meaning of data gathered on humans. (2,4,5)
- 2.3 Understand the ramifications (ethical and legal) of making appropriate recommendations in the workplace. (2,5)

Objective 3

- 3.1 Accurately perform time studies on manual, semi-automated, and automated tasks. (4,5)
- 3.2 Accurately perform work-sampling studies on manual and semi-automated tasks. (4,5)
- 3.3 Accurately apply predetermined time study techniques to justify recommendations. (4,5)

Objective 4

- 4.1 Accurately define a problem and its corresponding constraints. (4)
- 4.2 Function as a productive and effective member of a team. (4)
- 4.3 Document work in a scholarly manner. (4)
- 4.4 Present information and ideas in a professional manner. (4)

Class Polices:

1. All tests will be closed book, closed note type.
2. No make up tests will be given.
3. Late assignments and lab reports will not be accepted.
4. One test score can be dropped. The mean of the other two will be used in the calculation of the exam grade.
5. Failure to have a passing average on the exams/final will result in automatic failure in the class.

Attendance:

Attendance will not be taken, however it is suggested that you attend all scheduled lectures since much of the material covered in class will supplement the text material. You are responsible for all of the assigned reading plus the information covered in lecture.

Individual Work:

All students are expected to do their own work on each exam, homework assignments, and lab project unless specifically instructed to work in-groups. Anyone that does not follow this policy will be given a zero for the assignment and will be recommended for dismissal from the course.