

# IME 3150: Work Analysis and Design Lab

Course Syllabus – Fall 2007

## 2003/2005 Catalog Data:

The purpose of this design course is to use the knowledge, skills, and abilities learned in IME 305 and apply them to an industry-based project. Major elements included in the project include: human factors, work design principles, work environment, economic justification, work measurement, and the design process. NOT FOR ENGINEERING CREDIT. **Prerequisite: IME 3050 or taken concurrently**

## Prerequisite by Topic:

Students are expected to have the following abilities:

1. Basic knowledge of methods engineering, measurement of human work systems, techniques for operational analysis, work measurement, and work sampling. Working knowledge of basic predetermined motion-time systems and standard data development are expected.
2. Effectively communicate (written and oral).
3. Basic knowledge of word processing, spreadsheets, world wide web, and e-mail.

## Suggested Textbook:

Niebel, Benjamin, and Freivalds, Andris (2003). Methods, Standards, and Work Design. McGraw Hill, Eleventh Edition.

## Course Instructors:

Ms. Stephanie Means, Office: E-229, Parkview Campus, Phone: (269) 276-3384, FAX: (269) 276-3353, E-mail: [stephanie.means@wmich.edu](mailto:stephanie.means@wmich.edu), Office Hours: 5:30-6:20 pm Mondays or by appointment only.

## Objectives<sup>1</sup>:

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

1. Apply the knowledge skills and abilities learned in Work Design (IME 305) and apply them to an industrial base problem. (a,b,c,d,e,f,g,j,k)

More specifically the objective of this project is to select a process and/or workstation, evaluate it, document problems, and make appropriate recommendations. The culmination of this project will be a double spaced typed report (25 pages) and a Power Point presentation.

## Topics (tentative):

Wk 1 (9/10)	Introduction, Objectives, Form Groups
Wk 2 (9/17)	Topic Development, Pre-proposal, Weekly Notebooks
Wk 3 (9/24)	Pre-Proposal, Weekly Notebooks
Wk 4 (10/1)	Interview Questions, Pre-Proposal, Weekly Notebooks
Wk 5 (10/8)	Interview Questions, Weekly Notebooks
Wk 6 (10/15)	Guidelines for Mid-term Presentation, Weekly Notebooks
Wk 7 (10/22)	<b>Mid-term Progress Presentation</b>
Wk 8 (10/29)	Weekly Notebooks
Wk 9 (11/5)	Guidelines for Draft and Final Report, Weekly Notebooks
Wk 10 (11/12)	1 <sup>st</sup> Draft Due (optional), Weekly Notebooks
Wk 11 (11/19)	Weekly Notebooks
Wk 12 (11/26)	Weekly Notebooks
Wk 13 (12/3)	Weekly Notebooks
Wk 15 (12/10)	<b>Semester Project and Presentation Day, NO EXCEPTIONS!!!! (7:15 – 9:15 pm)</b>

**Evaluation:**

1.	Project	100%
	Mid-term presentation	10%
	Final Presentation	20%
	Written Report + Peer Evaluations	70%

**Grading Scale (Tentative):**

A = 90 – 100, BA = 88 – 89.9, B = 80 – 87.9, CB = 78 – 79.9, C = 70 – 77.9, DC = 68 – 69.9, D = 60 – 67.9, E < 60.

**Performance Criteria<sup>2</sup>:**

The students should have the ability to:

**Objective 1**

- 1.1 Accurately define a problem and its corresponding constraints. (1)
- 1.2 Function as a productive and effective member of a team. (1)
- 1.3 Document work in a scholarly manner. (1)
- 1.4 Document reasonable recommendations accompanied by justification acceptable within the profession. (1)
- 1.5 Present information and ideas in a professional manner. (1)

**Computer Usage:**

Use of PC based software (Word, Excel, Power Point) and the worldwide web is required for the project. All tools/techniques will make use of these technologies in one form or another.

**Oral and Written Communications:**

Effective communication (oral and written) is a requirement for success in this class. Semester projects will be presented to the class and the industrial partner at the end of the semester.

**Calculus Usage:**

Calculus is not directly used in this course however may be used during design/redesign of recommendations.

**Library Usage:**

Reference material is on reserve at the library and is expected to be used to supplement the material discussed during class.

**Course Coordinator:**

Dr. T.K. Fredericks, Department of Industrial and Manufacturing Engineering. Office: E-223 Parkview Campus, Phone: (269) 276-3360, FAX: (269) 276-3353, E-mail: [fredericks@wmich.edu](mailto:fredericks@wmich.edu).

<sup>1</sup> Letters in parentheses at the end of each objective refer to ABET Engineering Criteria 2000.

<sup>2</sup> Numbers in parentheses refer to the method of evaluation as listed in previous section.