

## Master Syllabus

### OPT 1110 - Operations Work Measurement & Ergonomics

**Division:** Science, Mathematics and Engineering

**Department:** Operations Technology

**Credit Hour Total:** 3.0

**Lecture Hrs:** 2.0 **Lab Hrs:** 2.0

**Prerequisite(s):** OPT 1101

**Date Revised:** October 2013

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#### Course Description:

The application of fundamentals of work measurement techniques including taking time studies, calculating standard times, estimating product costs, performing work sampling and Methods Time Measurement (MTM). Also the understanding of how the human body reacts to loads and stresses and how poor work motions and workplace layouts can contribute to this. Two classroom, two lab hours per week.

#### General Education Outcomes:

- ▣ Oral Communication Competency
- ▣ Critical Thinking/Problem Solving Competency
- ▣ Values/Citizenship/Community Competency
- ▣ Information Literacy Competency

#### Course Outcomes:

##### Principles of Motion Economy

Demonstrate the principles of motion economy as it relates to time and stress on the human body. Demonstrate good motions versus poor motions in a lab or real world environment.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% of students score 80% or higher on exam

**Assessment Method:** Simulations

**Performance Criteria:** 70% of students are able to score at least 70% on practical lab applications

##### Injuries Due to Poor Ergonomics

Describe, demonstrate and identify the types of risks associated with certain motions. Demonstrate measuring the level of the risks associated with such motions during a lab exercise.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% of students score 80% or higher on exam

**Assessment Method:** Simulations

**Performance Criteria:** 70% of students are able to score at least 70% on practical lab applications

##### Principles and Concepts of Ergonomics

Describe and demonstrate the principles of ergonomics on exams and during a lab exercise.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% of students score 80% or higher on exam

**Assessment Method:** Simulations

**Performance Criteria:** 70% of students are able to score at least 70% on practical lab applications

##### Work Measurement Basics

Describe and use basic work measurement tools/techniques such as time study, standard data, Methods Time Measurement (MTM) and work sampling.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% of students score 80% or higher on exam

**Assessment Method:** Simulations

**Performance Criteria:** 70% of students are able to score at least 70% on practical lab applications

#### Outline:

Effective work motions LH/RH Analysis  
Using stop watches to determine time  
Work sampling techniques  
Using time to compare work methods improvement  
Calculation of work standards  
Observe, Standardize, Kaizen Operator work content, Kaizen Equipment, and Kaizen Layout (OSKKK)  
Synthetic Times standards - MTM 1  
Principles and concepts of ergonomics  
Cumulative Trauma Disorders (CTD), causes prevention methods  
Measure ergonomic risk  
Work on a project to design a desirable, productive work environment