

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

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