

## Master Syllabus

### OPT 1130 - Lean Operations

**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 2012

---

### Course Description:

Lean operations principles including lead time reduction, containerization, module design, standardized work and Takt time, Kanban, 5S's and Office Lean. Two classroom, two lab hours per week.

### General Education Outcomes:

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

### Course Outcomes:

#### Lean production systems

Give examples and explain the differences between traditional operations and Lean operations.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% or better on examinations

**Assessment Method:** Simulations

**Performance Criteria:** 80% of students score 80% or higher on evaluation rubric

#### Lean workcell

Working on sub-teams, create a fully functional workcell that will produce a product on demand with the least labor, equipment and inventory.

**Assessment Method:** Behavioral observations

**Performance Criteria:** Instructor observations as to functioning of team according to rubric. A score of "4" or higher on the rubric in this category achieved by 80% of the students.

**Assessment Method:** Simulations

**Performance Criteria:** 80% of students score 80% or higher on evaluation rubric

**Assessment Method:** Written surveys and/or questionnaires

**Performance Criteria:** Student surveys to evaluate their teammates. 80% of the students received an "8" or better on the survey

#### Systems integration

Working on teams, integrate systems such as labor, equipment, information, calculations into an outcome that will produce a specified product and demand in the most efficient manner.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% of students score 80% or better on examination questions dealing with this topic

**Assessment Method:** Simulations

**Performance Criteria:** 80% of students score "4" or higher on evaluation rubric on this topic

**Assessment Method:** Written surveys and/or questionnaires

**Performance Criteria:** Student surveys that students use to rate their learning indicate that 80% or better feel they are competent in this area.

### Outline:

Value Stream Mapping/Flow Charting  
Leadtime Reduction/Waste Elimination  
Standardized Work and Takt Time  
Quick Changeover  
Kanban (pull systems)  
5 S's (Workplace Organization and Visual Control)  
Customer Service  
Lean in Non-manufacturing Areas such as Offices, Shipping, etc.  
Preventive Maintenance