

Common Course Outline

EMET 115

Introduction to Lean Principles

3 Semester Hours

Community College of Baltimore County

Description

EMET 115 – 3 Credits - Introduction to Lean Principles

investigates Lean concepts and practices and examines their impact on processes in work environments. Just-in-time process improvements, teamwork, process flow, lead time reduction, production and inventory control and multiple organizational strategies are applied during simulation activities where students explore the differences between lean and traditional production approaches.

3 credits: 3 lecture hours per week

Prerequisites: ACLT 052 or ACLT 053

Course Objectives

Upon successful completion of this course the student will be able to:

1. distinguish the production outcomes associated with traditional versus lean-oriented practices in simulation activities;
2. relate the four stages of team development to participation in departmental and multi-functional teams;
3. prepare a proposal recommending actions that will improve processes and reduce lead time;
4. analyze a supply and distribution system in order to identify waste and opportunities for process improvement;
5. design a production process for the assembly of two products, which includes a changeover from production of one to the other;

6. produce an analysis of inventory management techniques as they are applied to a business simulation;
7. apply throughput philosophy, Takt time development, and buffer management in simulation activities;
8. compare the effectiveness of cost world approach versus throughput world approach to inventory control based on an analysis of two different processes;
9. track and respond effectively to variable elements impacting the production process;
10. use attribute control charting to improve organizational performance;
11. predict the ability to produce goods and services that meet customer needs and expectations based on the character of process output;
12. apply principles of process control to a business simulation;
13. utilize quality improvement tools to improve the production process; and
14. explain how waste impacts the profitability, cycle time, throughput, environmental impact and quality of a process and an organization.

Major Topics

- I. Just In Time
- II. Teamwork
- III. Process Flow
- IV. Principles of Production & Inventory Control
- V. Process Control
- VI. Continuous Process Improvement
- VII. Quality Foundations

Course Requirements

Grading/exams: Grading procedures will be determined by the individual faculty member and will be provided on the first day of class.

The following will be required for this course:

1. Written paper or suitable practical project
2. Midterm exam

3. Comprehensive final (including a practical exam).

In addition, students can expect grades from the following areas:

4. Quizzes
5. Homework Assignments

Other Course Information

EMET 115 – Introduction to Lean Principles is a core course in the Mechanical Engineering Technology option of the Engineering Technology A.A.S. program. It is taught in a classroom environment, and includes hands-on activities which allow students to apply the knowledge they acquire during lecture sessions.