Credits: 3 hours lecture

Instructor: Sara McCaslin

Text(s): Manufacturing Systems Engineering, Hitomi & Hitomi, CRC Press, 2nd Edition

Additional Material:

Course Information

Catalog Description: A study of modern production practices and manufacturing systems including operations and materials planning, inventory control methods, production scheduling, layout of manufacturing cells, machine monitoring, and automation.

Prerequisites: MENG 3319 or Consent of Instructor

Required, Elective, Selected: Elective

Course Goals

Instructional Outcomes: By the end of this course students will be able to:
1. Explain the major steps involved in the manufacture of a product
2. Use terminology that is standard to the study and implementation of a manufacturing system
3. Give concrete examples of issues that arise in a typical manufacturing environment
4. Develop a basic sequence of operations and material flow for the manufacture of an assembled part
5. Discuss modern approaches to inventory control
6. Develop a schedule for the manufacture of an assembled part
7. Design and layout manufacturing cells as part of a sequence of operations
8. Apply automation techniques to a manufacturing process
9. Explain in layman's terms the limitations of automation in a manufacturing environment

Relationship to Student Outcomes: This course supports the following Master of Science in Mechanical Engineering Program Outcomes, which state that our students will:
1. Apply fundamental knowledge of specialized mechanical engineering concepts and modern engineering tools in solving engineering problems. [1 - 4]
2. Demonstrate independent self-learning and research capabilities for solving engineering problems. [5]
3. Recognize their professional responsibility with the society, environment, engineering ethics, and lifelong learning. [3]
4. Demonstrate an ability to effectively communicate results from engineering problems or other intellectual products. [5-9]

Topics Covered
- Overview of manufacturing processes
- Planning the flow of materials
- Sequence of operations
- Inventory control
- Scheduling
- Design and layout of manufacturing cells
- Automation

Prepared By:  Sara McCaslin                          Date:  6/6/2014