

**Department** : Engineering

**Course number** : MEM 215W

**Course title** : Advanced Manufacturing Systems

**Credits** : 4

**Contact Person** : Marty Wood

**WQ:** W

**Catalog Copy** :

MEM 215W Advanced Manufacturing Systems

Second semester. Four credits. Two three-hour laboratory periods. Prerequisite: ME 221 and MEM 211; ENGL 105 or 110 or 111 or 250.

Capstone design course for the MEM Program. Design applications involving construction and analysis of manufacturing system models. Students submit write-ups for several small projects. One large project is completed by all students in the course, with a written report and oral presentation. Projects incorporate major concepts studied in prior courses.

**W Criteria** :

1. Course Description and Objectives: This course is the capstone of the Management and Engineering for Manufacturing program. In the course, students will have the opportunity to analyze an actual production system through a company-sponsored project (50%). Students will meet with the companies, collect data for the project, and come up with a written (25-40 typed pages) and oral presentation addressing the current production process and making recommendations for changes.

In addition, students will be responsible for analyzing smaller projects (case studies) during the semester. These projects will emphasize engineering and business concepts and allow students to make reports (8-5 pages) about specific recommendations for the case. In addition, the case will allow students to consider the interaction between manufacturing technologies and the complete strategy of the firm. In this way, students will not only have practice in solving problems, but also have a framework for determining which problems are most critical to the success of the firm.

2. The primary modes of written instruction to students are:

- Formal classroom instruction supplemented by a handout prescribing a format or an example.
- Written commentary from the teacher of record or faculty project advisor

– Individuals/group conferences

– Oral presentation instruction is by example

3. – There will be a number of case studies (tentative plans are for seven) and will be distributed as the semester progresses. It will require you to analyze a particular problem in greater detail, construct a computer model for solving it and report what recommendations you would make as a result of studying the computer model. These cases will be spread out through the semester.

– Work on projects will be done in groups and the oral and written portions of the reports will be equally weighted. The midterm presentation will take place on the Friday after spring break. The final presentation will take place on the last Friday of class. In addition, students will be expected to participate in senior exhibition day that is sponsored by the Engineering School.

Behavior that appears to be cheating cannot and will not be tolerated and will be punished appropriately (from earning NO CREDIT on an assignment to a failing grade in the class along with a notation on your permanent transcript stating that you failed due to academic dishonesty). Behavior that appears to be cheating includes copying from classmate solutions or copying from homework solutions provided in class or from past semesters, should be prevented by students and/or reported to instructors.

**Role of Grad Students :** There are no graduate assistants for this class.

**Supplementary Information**