

## Version 2

DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING – SUMMER 2019

MIE1718S – COMPUTER-INTEGRATED MANUFACTURING – B. BENHABIB,

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**\*\* This course has a prerequisite of at least one U/G Manufacturing Engineering Course – Registration to be approved by Prof. Benhabib (please submit pertinent transcripts, via email, for approval) \*\***

### COURSE CONTENT

- **Competitive Manufacturing:** History of Manufacturing Technologies; Manufacturing Management Strategies
- **Computer-Aided Design**
  - **Conceptual Design:** Conceptual Design Process; Modular Product Design; Industrial Design
  - **Virtual Prototyping:** Solid Modelling; FEA; Optimization; Design of Experiments
  - **Rapid Prototyping:** Processes for Rapid Physical Prototyping; Reverse Engineering
- **Computer-Aided Production and Assembly**
  - **Production/Assembly Machine Control:** Numerical Control Machine Tools; Robotic Manipulators; Automated Guided Vehicles
  - **Manufacturing System Control:** Automata Theory for Discrete-Event-System Modeling; Programmable Logic Controllers

### IMPORTANT DATES

**May 2:** First day of lectures (*All classes start at 10 am for 4 hrs of lectures + 2 hrs of project time*)

**Lecture Dates:** May 2, 3, 6, 7, 13, and 14.

**June 14:** Project-1 due by 4 pm.

**August 11:** Project-2 due by 4 pm.

**Student-Presentations (of Project 2) Date:** August 12, 10 am –

Each presentation is ten slides for ten minutes.

### COURSE-WORK EVALUATION

Project-1 Report 50%, Project-2 Report 32%, and Class Participation 18% (up to 3 points per lecture day).

BONUS: up to 5%, for in-class (Project-2) Presentation on August 12.