Course Syllabus
MFG 5359: Computer-Aided Manufacturing
Spring 2019

Instructor: Dr. Ivan Renteria
Office: E226E Engineering Building
Office Hour: Tuesday and Thursday 3:00-4:30 PM
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Course Description (3 Credits)

Modern concepts about the use of computers for design and manufacturing, including theory of computer numerical control (CNC), transformation and manipulation of objects, solid modeling, finite element method and introduction to solid works.

Major References:

- Class notes
- References

  [1] Farid Amirouche, Principles of computer-aided design and manufacturing, 2004, Second edition, Pearson

  [2] Mikell Groover, Automation, production systems, and computer-integrated manufacturing.2019, Fifth edition, Pearson.

Topics

- ✓ Computer-aided design
- ✓ Transformation and manipulation of objects
- ✓ Description of curves and surfaces
- ✓ Solid modeling
- ✓ Optimization techniques
- ✓ Introduction to the Finite-Element Method
- ✓ Trusses-A Finite-Element Approach
- ✓ Heat-Conduction analysis and the Finite-Element Method
- ✓ Dynamic analysis- A Finite-Element Approach
- ✓ Introduction to Solid Works
- ✓ Computer numerical control

Course Grading Distribution:

Homework/Assignments/Quizzes	10%
Project	20%
Exams	30%
Final Exam	40%

Grading Scheme:

Grades will be distributed based on the following scale:

% of Points Possible	Grade Assigned
≥90	A
≥ 80	B
≥ 70	C
≥ 60	D
< 60	F

The instructor reserves the right to lower the grading scale at the end of the semester. It is expected that each assignment (homeworks, examinations and projects) be professional. The instructor reserves the right to penalize unprofessional responses to any assignment up to including awarding a zero (0) for the assignment.