Creative Decisions and Design

Course prefix: ME

Course number: 2110

Section: A

CRN (you may add up to five):
27113

Instructor First Name: Martin

Instructor Last Name: Jacobson

Semester: Spring

Academic year: 2026

Course description:

ME2110: Creative Decisions and Design is a hands-on course focused on design, prototyping, and testing of solutions to complex problems. Students work in teams to build autonomous robots for a competitive design challenge, applying principles of design thinking, prototyping, sensing and controls. The course emphasizes iterative development, system integration, and root cause analysis, supported by CAD modeling, technical report writing, and rapid prototyping. Students learn to plan experiments, analyze data, and communicate the value of design decisions under multiple constraints. The course builds creativity supported by technical rigor and teamwork skills to prepare students for Capstone and engineering practice.

Course learning outcomes:

- To learn the fundamental procedures used for solving engineering design problems.
- To analyze and synthesize design solutions with flexibility, adaptability, and creativity.
- To learn techniques that can enable one to tackle unsolved, open-ended problems.
- To learn by doing through team and individual projects and assignments.

Required course materials:

W. Singhose, J. Donnell, Introductory Mechanical Design Tools (optional)

Grading policy:

- 40% individual, 60% team project grades. A=90%, B=80%, C=70%, D=60%, F<60%

- Class participation grades will be based on instructor and TA evaluations of your participation in studio. (10%)
  Peer evaluation grades will be assessed based on your relative performance on your teams as measured using 3 to 4 structured peer evaluations over the course of the semester.
- Studio preparedness will be evaluated as determined by section instructor. (10%)

Attendance policy:

You are required to attend **all lectures and all studio sessions.**

Missing studios will result in a final grade penalty where 1 missed studio equates to 1 letter grade reduction. If you arrive late to lecture or studio, you will be noted as tardy. Two tardy marks equate to one absence. Furthermore, there will be several short in-lecture quizzes. The quizzes may occur at the beginning of lecture, so do not be late. There are no make-ups for these quizzes. If you are more than 15 minutes late for studio, then you are considered absent. All students are expected to attend and participate in the Final Competition and Design Review.

In the case of a personal emergency or Institute-approved absence, please consult the information on the Division of Student Life website (http://studentlife.gatech.edu/content/class-attendance) and follow the appropriate steps. The Dean of Students Office will make the decision and contact your professors stating what (if any) accommodations will be provided. Please notify your studio instructor and TA immediately for coordination purposes if you will not be able to attend lecture or studio due to any illness.

Academic honesty/integrity statement:

Students are expected to maintain the highest standards of academic integrity. All work submitted must be original and properly cited. Plagiarism, cheating, or any form of academic dishonesty will result in immediate consequences as outlined in the university's academic integrity policy.

- LLMs such as ChatGPT, Grok, Claude, Copilot, Gemini, etc. can be excellent tools to generate ideas, stress-test reasoning, and identify gaps in analysis. They are not substitutes for doing the engineering work (modeling, measurement, testing, and justification).
- Do not copy LLM text into deliverables. Treat LLM output like any web source. Verify facts with authoritative references and cite those, not the LLM.
- Unacceptable use of LLM's include:
  - Copy-pasting blocks of LLM text into your report or slides.
  - Using LLMs to fabricate data, citations, specifications, or test results.
  - Presenting LLM output as authoritative without independent verification.
  - Asking LLMs to write your analysis or conclusions for you.