

**ABET Course Syllabus – Mechanical Engineering**

**MECH 4382 – Senior Design Project 2**

**Spring 2012**

**CREDITS:** 3 hours.

**CONTACT HOURS:** One 165-minute meeting/lecture per week.

**COURSE COORDINATOR/INSTRUCTOR:** Yonas Tadesse.

**TEXTBOOK/SUPPLEMENTAL MATERIALS:** No textbooks required.

**COURSE DESCRIPTION:**

Project-based course. Student groups design, build and test a device that solves an open-ended mechanical engineering design problem. MECH 4381 focuses on background research and engineering analysis, MECH 4382 on prototype construction and testing. As a designated MECH Writing-Intensive Course, MECH 4381-4382 also focuses on the refinement of students' engineering communications skills and their use of writing as a critical-thinking and learning tool.

**PREREQUISITES/CO-REQUISITES:** MECH 4381—Senior Design Project 1

**COURSE DESIGNATION:** Required.

**COURSE LEARNING OUTCOMES (CLOs from 4381 &4382):**

1. Develop project management skills: work breakdown structure, manufacturing plan, cost estimation, resource allocation and scheduling. ABET outcome (a, c, e, g).
2. Build and test a working prototype, and perform design iterations. ABET outcome (a, b, c, i, j, k).
3. Function in disciplinary or multi-disciplinary teams. ABET outcome (d, g).
4. Document, report, present project progress and final results. ABET outcome: (f, g).

**TOPICS TAUGHT:**

Project planning.

Testing procedure of components and evaluation.

Manufacturing methods.

Redesigning.

Engineering presentation and report writing.