Design and Professional Practice II

MATSCEN 4382.01

Credit Hours:
3.00

Course Levels:
Undergraduate (1000-5000 level)

Course Components:
Lecture

Course Description:
An in-depth design project to foster independent thinking and to develop problem-solving skills. Design of experiments, applied statistics, presentation and communication skills will be discussed.

Prerequisites and Co-requisites:
Prereq: 4381.01, and enrollment as MatScEn-BS major; or permission of instructor.

Course Goals / Objectives:
- Learn how to execute design projects, work in teams and effectively disseminate their findings
- Learn materials processing methods, testing techniques and how to interpret experimental datasets
- Learn methods for material inspection, how to identify modes of failure and to troubleshoot design problems
- GE Reflctn Booknd LO: Engaged Citizenshp & Intercultural Competency: Studnts consider public health, safety, welfare, global, cultural, social, environmental, & econ factors in applying eng design to produce solutions meeting specified needs.
- GE Reflctn Booknd LO: Personal & Professional Development: Students individually assess and pursue personal professional growth in concert with project requirements and personal career goals.
- GE Reflctn Booknd LO: Cultivate Engineering Mindset: Students develop an engineering mindset that demonstrates constant curiosity, makes connections between disparate bodies of information, and seeks opportunities to create value.
Course Topics:
- Project management (Gannt charts, budgets, tollgates)
- Senior project (project execution)
- Senior project (data analysis and functional testing)
- Manuscript writing and critiquing
- Presentation/Oral communication skills
- Project Presentations

Designation:
Required