Instructor: Dr. Mark Wasikowski: mark.wasikowski@unt.edu Hours: F101L TR afternoons or by appoint

Schedule: TTH 8:30 – 9:20 AM, Room: NTDP B185 Class and labs share assigned lecture and lab times. Lab attendance is mandatory, but meeting times may vary from registration. Lab sections provide groups common time and facilities for project completion.


Catalog Course Description: Advanced treatment of engineering design principles with an emphasis on product and systems design, development and manufacture. Mimics “real world” environment with students working in teams to prepare product specification, develop several concepts, perform detailed design, and construct prototypes subject to engineering, performance and economic constraints.

Course Topics: Prerequisite(s): must NOT be pre-engineering major and must passed:
- Teamwork EENG 2405 or 2610: Circuit Analysis
- Engineering Design MEEN 3100 Manufacturing (Co-requisite)
- Project Management MEEN 3130 Machine Element Design
- Communication MEEN 3210 Heat Transfer
- Public Speaking skills MEEN 3230 System Dynamics and Control
- Safety and Ethics

Student Learning Objectives:
This class will address the following outcomes:
  a. Formulate a design problem, conduct relevant research, and develop feasible solutions
  b. Develop project management skills: task assignment, cost analysis, purchasing/budgeting, scheduling, time management
  c. Carry out component-level design and incorporate it into the system-level design
  d. Teamwork, Oral and written communication of the preliminary and final results

ABET Criteria:
MEEN 4150 addresses following ABET program outcomes:
  a) Apply knowledge of mathematics, engineering and science
  b) Design / conduct experiments to verify / validate their design projects. Analyze. Interpret data
  c) Develop project-based learning skills through design and implementation of a system, component or process that meets the needs within realistic constraints
  d) Function in multi-disciplinary teams
  e) Identify, formulate and solve engineering problems
  f) Have an understanding of professional and ethical responsibility
  g) Communicate effectively
  h) Achieve broad education necessary to understand the impact of mechanical and energy engineering solutions in a global and societal context
  i) Understand learning processes and need for learning
  j) Achieve knowledge of contemporary issues
  k) Use techniques, skills and computer-based tools for conducting experiments and carrying out designs
  l) Apply principles of engineering, basic science and mathematics to model, analyze, design and realize physical systems, components or processes in both thermal and mechanical systems areas.
Course Evaluation: Students work in teams. Each team selects a design project with help of faculty adviser. Our goal is to perform a project conceptual/preliminary design. Designs will be brought to completion in MEEN 4250. As this is a team-based course, each student’s final grade has a team-based and individual-based component. Team-based score components are derived from deliverables prepared as a team. All members receive same team-based score unless there is evidence of non-participation of a team member. The individual-based score components are generated from progress reports, peer evaluations and other assignments. Attendance is mandatory for senior design lecture and lab since this is a team based course.

Team Projects given to monitor each team’s progress in design process. Assignments will consist of written reports, group presentations and a final comprehensive written report combined with a presentation of your design. Assignments will be evaluated by instructor. In case of a dispute on grading, faculty advisor will be consulted and grades will be averaged to determine final grade. It should be noted that each team member is required to participate equally in group assignments and presentations. Each student will be evaluated on participation by their team members and faculty advisors.

Weekly Progress Reports will be required from every student once teams are selected. Due dates will be announced in advance and a template for progress reports will be provided on Blackboard. Class attendance/participation will be part of individual grade. Each group will submit a binder at end of semester. The binder should contain meeting minutes, team member research notes, and copies of weekly assignments. All paperwork associated with project should go in binder.

Characteristics/Expectations of “A” Students:
- assignments, action items, deliverables are high quality, completed on time and in format requested
- Attends asks questions, participates with enthusiasm
- Team, sponsor and faculty advisor meetings are attended and prepared for
- Communicate effectively with team members, instructor, faculty and others throughout semester.
- Take initiative to learn from others outside of class utilizing their knowledge to further project
- Student values different perspectives in team members and works to create consensus/decisions
- Student is self-motivated and accomplishes tasks without prodding from others.

Grade Evaluation: (90/80/70/60)

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Disability Policy: Reasonable accommodation is made to facilitate special needs. If special accommodations are required, student must meet with Office of Disability Accommodation (ODA), Union Suite 322, (940) 565-4323. After meeting, contact me to discuss accommodations. Information http://www.unt.edu/oda

Class Policies: Assignments turned in to instructor in paper form. Emails not accepted. Late submissions, but before next class date have grade reduced by 50%. Late submissions after next class date not accepted. Excusable absences are accepted only if student informs professor before event such as illness and non-reschedulable prior appointments, or after event, such as medical or other emergencies, within a reasonable time frame. In all cases, academic honesty is expected.

Dishonesty: Any form of dishonesty during semester result in a final grade of F and recommendation for expulsion to Provost. No exceptions. Avoid cheating or any misconduct. You will very shortly become a practicing professional engineer. Appropriate behavior is expected. If you are having personal problems, come and talk to instructor.