Catalog Description: Formal development of the process of designing a product, including ideas generation, engineering development, modeling and analysis, and project planning and management.

Number of Credits: 3 credit hours. Two 1 hour and 20 minutes sessions/week

Meeting Time and Place: Tuesdays and Thursdays 4:00 – 5:20 PM in classroom B192. The class sessions include lectures, review of problems and case studies, and hands-on practices.

Instructor: Dr. Reza Mirshams, Office: F128, Reza.Mirshams@unt.edu, 940-565-2594

Office Hour: Mondays and Fridays, 11:00 AM – 12:00 PM. Please make appointment for other times.


Other Supplemental Reference:

Course Website: The course will use UNT Blackboard Learn at https://learn.unt.edu environment for providing supplemental materials.

Course Learning Outcomes:
1. Demonstrate the importance of making good decisions at the design stages of part and device development so that desired functionality, manufacturability, time to market, cost, quality, robustness and durability are emphasized.
2. Demonstrate the ability to state materials properties and apply these properties to manufacturing processes and design.
3. Demonstrate the ability to compare and distinct the advantages of traditional and non-traditional mechanical manufacturing processes in design process.
4. Demonstrate the ability to interpret product requirements, manufacturing process capability data and apply them to select and/or synthesize suitable manufacturing process(es).
5. Demonstrate the basis process optimization techniques by understanding the role of economic consideration, materials properties and design constraints in manufacturing processes selection.
6. Demonstrate the ability to use a systematic product development process in designing a product or system.
7. Demonstrate the ability to practice skills in the areas of teamwork, oral presentations, and technical writing.
Course Instruction and Assignments
1. This course is made up of a series of assignments and assessments to assist you in achieving the course learning objectives/outcomes. Each week you will work on various combinations of assignments, activities, discussions, readings, research, etc. which will be made available to you by each Monday and close on the following Sunday.

2. Throughout the semester, the activities will include participation of students on a product design or redesign team and demonstration of production process; prepare formal technical reports; and present information before an audience. Students may obtain access to the Engineering Graphics and Manufacturing Laboratories for development of their projects and a prototype of the product.

3. Attendance is required for all class hours; however the course grade is based on performance and effort in submission of the required work and assignments. As a professional manner, it is expected to inform the instructor for not presenting during the scheduled class hours.

4. UNT Backboard will be used for posting the course materials and instructions, assignments, submission of assignments, email communications about the course, and the course grade-book. Be sure to check UNT Blackboard and the course email at least every other day, if not daily.

5. Late submission of an assignment will not be accepted, except with an acceptable excuse by the instructor.

6. All works submitted for credit must be original works created by the scholar uniquely for the class. It is considered inappropriate and unethical, particularly at the graduate level, to make duplicate submissions of a single work for credit in multiple classes, unless specifically requested by the instructor. Work submitted at the graduate level is expected to demonstrate higher-order thinking skills and be of significantly higher quality than work produced at the undergraduate level.

Assessment methodology and distribution

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework assignments</td>
<td>20%</td>
</tr>
<tr>
<td>Midterm exam (Tuesday October 8th, class hour)</td>
<td>25%</td>
</tr>
<tr>
<td>Team Project</td>
<td>30%</td>
</tr>
<tr>
<td>Final exam (Tuesday December 10th, 4:00-6:00 PM)</td>
<td>25%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Grade Assignment
A ≥ 90%; B ≥ 75%; C ≥ 60%; D ≥ 50%

Report Timing
- Week 1 (Sept. 5, 2013): Form Teams
- Week 2 (Sept. 13, 2013): Approve Team Project Topics
- Week 6 (Oct. 11, 2013): Interim Report 1 Due: Project Proposal and Early Concepts with rough prototype of major functionality
- Week 12 (Nov. 22, 2013): Interim Report 2 Due: Concept Selection and Detail Design of Major Subsystem
- Week 15 (Dec.5, 2013): Final Report due (Written and Oral Presentation)

Guidelines for the project reports writing and rubrics for evaluation will be posted on UNT Blackboard course website.

Disabilities Accommodation:
The University of North Texas complies with Section 504 of the 1973 Rehabilitation Act and with the Americans with Disabilities Act of 1990. The University of North Texas provides academic adjustments and auxiliary aids to individuals with disabilities, as defined under the law. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring accommodation, please see the instructor and/or contact the Office of Disability Accommodation at 940-565-4323 during the first week of class.
Class Policies
1. Make-up exams are not allowed unless approved at least one day before exam.
2. Strongly recommended to attend all classes, but not required.
3. This syllabus is subject to minor modifications as the course develops during the semester with changes to be announced during the class hours.
4. UNT endeavors to offer you a high-quality education and to provide a supportive environment to help you learn and grow. And, as a faculty member, I am committed to helping you be successful as a student. Here’s how to succeed at UNT: Show up. Find support. Take control. Be prepared. Get involved. Be persistent.

To learn more about campus resources and information on how you can achieve success, go to https://success.unt.edu.
5. In cooperation with the Office of Disability Accommodation, complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disabilities. Please present your written accommodation request to me before the fourth class day.
6. All rules relating to academic dishonesty will be enforced in accordance with University policies.
7. The UNT Catalog procedures on cheating and plagiarism will be vigorously enforced. It is the duty of each student to protect their work so it is not available to others for submission as their efforts. This is especially true of files that are generated on the computer. Students that knowingly allow others to use their work are partners in this unethical behavior.
8. State common law and federal copyright laws protect this course lectures and materials. They have my own original expression and revisions to the textbook author(s) and I record them at the same time that I deliver them in order. Whereas you are authorized to take notes in class, thereby creating a derivative work from my lecture, and/or make a print of my lecture notes/slides. The authorization extends only to making one set of notes for your own personal use and no other use. You are not authorized to record my lectures, to provide your notes to anyone else or to make any commercial use of them without express prior permission from me.
9. Requests for review of graded work must be submitted during the lecture in which such work is returned to the students. The request should be accompanied by a written justification of the request including any supporting data.
10. Challenges to the course grade must be made according to the university academic policies.
11. An I (incomplete) grade is given only for extenuating circumstances and in accordance with University and Departmental Policies.