MTSC 4060
MATERIALS SELECTION AND PERFORMANCE
Spring, 2011 - 3 credits
Class Instructor: Dr. Srinivasan G. Srivilliputhur, Office: E-119, Discovery Park.
Email: srinivasan.srivilliputhur@unt.edu; Phone: 940-369-8273
Office Hours: Walk-in or e-mail to make an appointment
Lecture: Monday 11:00 AM – 12:50 PM; Wednesday 11.00 AM – 11.50 PM
Location: UNT Discovery Park, Room D-212

COURSE INFORMATION
Goals / Learning Objectives: This course will provide the student with an understanding of how materials structure, properties, and processing interact to affect their performance. This knowledge will ultimately guide us to formulate and implement solutions to many materials engineering problems. We will use CES EduPack Software from Granta Design to explore challenges in materials selection.

Prerequisites: The student must be familiar with fundamentals of materials science – crystal structure, bonding, and processing. We will emphasize concepts and use “case studies” format.

Examinations, Projects, and Grading: There will be two exams and one class project shared by a team of 3-4 students. Homework (HW) and quizzes will be on the menu. Tentatively, the overall grading will be as follows.

Class Participation, HW etc. 10%; CES EduPack Exercises 20%
Class Project 20%; Two Exams 50%

Makeup Exam Policy: If a student cannot take the exam on the scheduled date due to some unavoidable circumstances, such as out of town business trip, sickness, etc., then he/she must notify the instructor in writing before the scheduled exam time to schedule a makeup exam.

Class Projects
- I have two ideas for your class projects. I’m also open to hearing your suggestions.
- The last six class periods in April will be fully devoted to working on your projects.
- Your project report will be a fun YouTube presentation for middle / high school students.
- You need to give me an outline of each person’s role in developing your project.
- If necessary, I will give you a total budget of $50 to develop your presentations.
- Grades in project of all students in a group may not be same.

Class Attendance is Mandatory. Please notify me if you have to miss a class or will be late.

Program Outcome Coverage
(a) An ability to apply their knowledge of mathematics, science, and engineering.
(b) An ability to design and conduct experiments, and to analyze and interpret data.
(c) An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.

(d) An ability to function on multi-disciplinary teams.

(e) An ability to identify, define, and solve engineering problems.

(f) An understanding of professional and ethical responsibilities.

(g) An ability to communicate effectively.

(h) An ability to understand the impact of engineering solutions in a global, economic, environmental, and societal context.

(i) To recognize the need for, and an ability to engage in life-long learning.

(j) To gain knowledge of contemporary issues.

(k) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

**Academic Integrity** – Plagiarism and cheating will NOT be tolerated. Please see UNT academic manual for the definition of plagiarism. Any student caught cheating will be given an overall **F grade (Fail)**. When in doubt please ask me.

**Additional References**


**Prepared By:** Srinivasan G. Srivilliputhur, **Last Revised:** January 18, 2011.

**MTSC 4060 TENTATIVE CLASS OUTLINE**

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<td>Professor @ TMS Meeting: Work on Class Project</td>
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<td><strong>SPRING BREAK</strong></td>
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<td>Class Project Research, Planning, and Preparation</td>
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<td><strong>Final Class Project Presentation</strong></td>
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