

THE ENGINEERED WORLD: MATERIALS

Course: FS 301, Unique #65395

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Lectures: MWF 10:00–10:50 AM in ETC 4.150

Office Hours: Tuesday: 2:00–3:00 PM

Wednesday: 2:00–4:00 PM

Required Texts:

1. Edward R. Tufte. *The Visual Display of Quantitative Information*, Second Edition. (Graphics Press LLC: Cheshire, Connecticut) 2001. ISBN 0-9613921-4-2 (\$32.80 at amazon.com, \$32.00 at barnesandnoble.com)
2. Ross King. *Brunelleschi's Dome*. (Penguin Books: New York, New York) 2000. ISBN 0-14-200015-9 (\$11.20 at amazon.com, \$12.60 at barnesandnoble.com)
3. Dava Sobel and William J. H. Andrews. *The Illustrated Longitude*. (Walker & Company: New York, New York) 1998. ISBN 0-8027-7593-4 (\$15.61 at amazon.com, \$22.95 at barnesandnoble.com)

Course Description: This course will develop critical thinking skills, teamwork abilities and writing abilities. The student will learn the fundamental bases of engineering, how to intelligently use and apply technical information and how to effectively and accurately convey technical information to others. The platform for accomplishing these goals will be a study of the historical and modern applications of engineering materials.

Grading Policy: Course grades will be calculated based upon class participation, individual reports, team project reports and presentations, in-class exams and a final report and presentation. Weighting of scores for determining the final course grade is given in the tables below.

Item	Weight	Grade	Minimum Score
Class participation	10%	A	90
Individual reports	30%	B	80
Team project reports and presentations	30%	C	70
In-class exams	15%	D	60
Final report and presentation	15%		

Important Dates: Make note of the following important dates.

January 21st	—	MLK Day Holiday
January 30th	—	Twelfth Class Day
March 10th–15th	—	Spring Break
April 28th	—	Final report due in class at 10:00 AM
May 2nd	—	Last day of classes

Individual Reports: Students will prepare individual written reports on assigned readings, course discussions and out-of-class assignments approximately every one to two weeks. Topics and problems to be addressed in these reports will be assigned by the instructor at least one week before the report is due. These reports may be considered "homework" assignments. Students are encouraged to collaborate on the research required for these reports, but each report submitted must be the final work of one individual. The writing and presentation must be solely that of the individual student. All reports must conform exactly to the format required by the instructor.

Team Project Reports: Team projects will be assigned approximately every two to three weeks, and team reports will be due approximately two weeks following assignment. The instructor will define each project, assign teams and assign due dates. Each team will prepare a written report for each project and make a brief, approximately ten minute, presentation on their project. These reports must represent the work of the entire team, and team members will be required to grade each other on their efforts and their contributions.

Exams: Approximately three short, in-class exams will be administered throughout the semester. These exams will cover assigned reading, class discussions, report topics, team project topics and other information and skills the students are expected to acquire. There is no final exam; a final report is required, however.

Final Report and Presentation: Each student will prepare a final written report and presentation. The final written report will be due at the beginning of class on Monday, May 5, 2008. Any report turned in after that time will be penalized by 25% in grade immediately, plus an additional 25% penalty for every day after the due date. The format and subject of the final written report will be specified by the instructor. Each student will give a brief oral presentation of their final report. The final written report and oral presentation of the final report are to be a result of each student's individual effort. Students are allowed, however, to assist each other in practicing for their final oral report presentation.

Attendance: Attendance and participation in lecture are mandatory and will be considered in grading. Students are expected to keep up with the assigned reading and be prepared to answer questions on these readings during lecture. The instructor must be given written notice a minimum of two weeks in advance for any absences other than emergencies. Refer to the General Information Catalog, available on-line at

<http://www.utexas.edu/student/registrar/catalogs/>

for University policy on attendance. If absence is required because of an emergency, such as personal illness or severe illness of a family member, the instructor should be notified at the earliest convenient opportunity.

Regrades: Errors in grading should be noted *in writing* and provided to the instructor with the graded item for review *no later than one week* after the item is made available to the student. *No regrades will be accepted without a written description* of the grading error, and regrades will only be conducted *in private* by the instructor.

Honesty: Any academic dishonesty will be dealt with according to University policy, including the stiffest penalty which the instructor may assess, usually a failing grade in the course. Dishonesty damages the reputation of the University and its students and will

not be tolerated. Students are encouraged to avoid any form of plagiarism, in particular, by carefully noting and referencing all source materials.

Evaluations: The course and instructor will be evaluated using the standard University evaluation forms at the end of the course. Students are encouraged to provide continuous feedback to the instructor throughout the course. The most effective way to do this is by visiting the instructor during office hours.

Other Items of Importance:

- The University of Texas at Austin provides upon request appropriate academic adjustments for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-6259.
- Web-based, password-protected class sites are associated with all academic courses taught at the University. Syllabi, handouts, assignments and other resources are types of information that may be available within these sites. Site activities could include exchanging e-mail, engaging in class discussions and chats, and exchanging files. In addition, electronic class rosters will be a component of the sites. Students who do not want their names included in these electronic class rosters must restrict their directory information in the Office of the Registrar, Main Building, Room 1.

Course Topics Outline: The following is a topical outline of the course. Only through taking this course is one expected to fully appreciate the relevance and meaning of these topics. What fun is learning without having a few mysteries to solve?

1. Fundamentals of the Scientific Method and Engineering
2. The Measure of Things
3. A Picture is Worth a Thousand Words
4. The Useful Properties of Materials
5. The Greatest Feat of Stone, Brick and Mortar
6. The Old Man and the Sea
7. Disaster Strikes
8. Modern Times