

MSE 3300/MSE 5300
Introduction to Materials Science and Engineering
Fall2011

Goals: To provide comprehensive understanding of the physical, mechanical, electrical, magnetic, optical, thermal and chemical properties of metals, semiconductors, polymers and ceramics.

Instructor: Dr. Fuqiang Liu

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Office Hours: From 1:00pm to class begins on Tue and Thur

Time and Place of Class Meetings: WH 308

Description of Course Content:

Introduction
Atomic structure and Interatomic bonding
The structure of crystalline solids
Imperfections in solids
Diffusion
Mechanical properties of metals
Dislocations and strengthening mechanisms
Failure
Phase diagrams
Phase transformations
Mechanical properties
Electrical properties of materials
Corrosion and degradation of materials
Electrical properties (semiconductors)
Magnetic properties
Composites
Thermal properties
Optical properties

Required Textbooks and Other Course Materials: "Materials science and engineering- an introduction" by William D. Callister, Jr and David G. Rethwisch, 8th edition

Homework: weekly

Grading Policy: HW 10%, Exam 1 20%, Exam 2 20%, Exam 3 20%, Final (comprehensive) 30%

Typical grading policy is: >85 A, 70-84 B, 60-69 C, 50-59 D and <50 F
Make up exam will not be provided unless special circumstances warrant.

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. Contact the Financial Aid Office for more information.

Americans with Disabilities Act: The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the *Americans with Disabilities Act (ADA)*. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Academic Integrity: It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University. According to the UT System Regents' Rule 50101, §2.2, "Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts."

Student Support Services Available: The University of Texas at Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. These resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals to resources for any reason, students may contact the Maverick Resource Hotline at 817-272-6107 or visit www.uta.edu/resources for more information.

Classroom behavior:

Students should NOT hold conversations. Wireless communications devices MUST be silenced.