

## Syllabus for MAE 3324 – 001 Fall 2011

**Instructor's Name:** Nancy Michael

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**Office Hours:** 11-12 am Tuesday/Thursday

**Course Number, Section and Course Title:** MAE 3324 – 001, Structure and mechanical behavior of materials

**Time and Place of Class Meetings:** 221 Woolf Hall, T,Th, 9:30am – 10:50pm, Aug 25 – Dec 9, 2010

**FINAL EXAM:** Thursday, Dec 15, 8-10:30 am.

**Classroom Etiquette:** Turn off electronic devices. Please: no earphones, texting, or open laptops during class. If you arrive late, take your seat quietly creating minimal distraction for other students.

**Description of Course Content:** This course is concerned with the interrelationships between processing, structure (crystal and microstructure) and electrical, mechanical and chemical properties of engineering materials, with emphasis on the mechanical behavior of metals, polymers and composite materials.

The Material covered will include the following sections of the textbook. Students are responsible for material in these sections and lecture content.

1.1-.6	Introduction
2.1-.8	Atomic Structure and Atomic Bonding
3.1-.6, .9 -.19, .21	Structure of Metals and Ceramics
4.1-.12	Polymer Structures
5.1-.13	Imperfections in Solids
6.1-.7	Diffusion
10.1-.15, .19 -.21	Phase Diagrams
11.1-.17	Phase Transformations
7.1-.20	Mechanical Properties
8.1-.14, .17-.19	Deformation and Strengthening Mechanisms
9.1-.5, .7-16	Failure
12.1-.13, .15	Electrical Properties
15.1-.10	Composites

**Student Learning Outcomes:** Students will have a thorough understanding of the factors affecting the mechanical behavior of solids. Students will be able to interpret simple phase diagrams and have an understanding of the relationship between, crystal structure, thermal history, composition, microstructure, and strength of metal alloys.

**Requirements:** CHEM 1465, PHYS 1444, and MAE 2312 (or concurrent)

**Required Textbooks and Other Course Materials:** Fundamentals of Materials Science and Engineering, an integrated approach, 3rd ed. William Callister.

**Class website is on Blackboard.** <http://elearn.uta.edu> Login with your NetID and password.

HW assignments and solutions will be posted. When used for lecture, presentation slides will also be made available through the class website.

### Grading Policy:

Exam 1: 15%	A	≥ 90% of full credit
Exam 2: 20%	B	≥ 80%
Exam 3: 20%	C	≥ 70%
Final (comprehensive): 30%	D	≥ 60%
Quiz/homework: 15%		

**EXAMS:** Major exams will be closed book/closed notes. You will need a ruler. An equation sheet will be provided and can be found on the course website for review prior to exam. During exams, no caps/hats may be worn, students may not leave the classroom for any reason (no bathroom breaks allowed), seating will be assigned, and book bags, phones, and other electronic devices will be left at the front of the room.

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**Homework:** Approximately weekly homework assignments. Homework is due at the beginning of class and will not be accepted more than 10 min after class begins. No late homework accepted. Use one side of paper only and write clearly. Homework is not accepted by email.

**Quiz:** In class quizzes may be announced or unannounced. The material covered on a quiz may include the day's reading assignments and previous homework or lecture material.

**Homework/Quiz grade:** Each homework assignment and quiz will be graded and assigned a score up to 100%, the lowest score will be dropped, then all remaining assignments and quizzes will be averaged together to make the H/Q portion of your grade.

**Make-up Exam Policy:** The grade for one missed midterm exam may be made up by substituting the final exam grade for the missed exam. There is no provision for a second missed midterm.

### **Descriptions of major assignments and examinations with due dates:**

**Tentative** Schedule: These dates may be adjusted by one class period (before or after given date) depending on material covered.

Mid-term 1: Tuesday, Sept 20

Mid-term 2: Thursday, Oct 27

Mid-term 3: Thursday, Dec 1

Final: Thursday, Dec 15, 8 – 10:30 am

**Attendance Policy:** Attendance is required. Students are responsible for material covered in class.

**Drop Policy:** Refer to the University drop policy. Last day to drop is Nov 4.

**Americans with Disabilities Act:** The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal opportunity legislation; reference Public Law 92-112 – The Rehabilitation Act of 1973 as amended. With the passage of federal legislation entitled *Americans with Disabilities Act (ADA)*, pursuant to section 504 of the Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens. As a faculty member, I am required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty of their need for accommodation and in providing authorized documentation through designated administrative channels. Information regarding specific diagnostic criteria and policies for obtaining academic accommodations can be found at [www.uta.edu/disability](http://www.uta.edu/disability). Also, you may visit the Office for Students with Disabilities in room 102 of University Hall or call them 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. "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 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." (Regents' Rules and Regulations, Series 50101, Section 2.2)

**Student Support Services Available:** The University of Texas at Arlington supports a variety of student success programs to help you connect with the University and achieve academic success. These programs include learning assistance, developmental education, advising and mentoring, admission and transition, and federally funded programs. Students requiring assistance academically, personally or socially should contact the Office of Student Success Programs at (817) 272-6107 for more information and appropriate referrals.

**E-Culture Policy:** The University of Texas at Arlington has adopted the University email address as an official means of communication with students. Through the use of email, UT Arlington is able to provide students with relevant and timely information, designed to facilitate student success. In particular, important information concerning registration, financial aid, payment of bills, and graduation may be sent to students through email.

All students are assigned an email account and information about activating and using it is available at [www.uta.edu/email](http://www.uta.edu/email). New students (first semester at UT Arlington) are able to activate their email account 24 hours after registering for courses. There is not additional charge to students for using this account, and it remains active as long as a student is enrolled at UT Arlington. Students are responsible for checking their email regularly.

**Grade Grievance Policy:** Please refer to the undergraduate catalog.