

MSE 250: Structure & Properties of Materials

Course and Faculty Information

Course Description: Basic concepts of material structure and its relation to properties. Application to engineering problems

Credits: 3

Prerequisites: CHM 114 or 113 with Pre- or corequisite(s): CHM 116

Instructor: Prof. Terry Alford, Dr. David Theodore

Contact Info:

- **Prof. Terry Alford**
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Office Hours: Zoom Link: <https://zoom.us/j/4890677198> (Links to an external site.)
[Links to an external site.](#)

Office hours will be held virtually unless other arrangements are made ahead of time. We will be available online during the following timeframes. Days Times (AZ Time zone, Mountain Standard Time)

TDA

Please note: we will wait online for 10 minutes from the start of the session. If nobody joins, we will end the meeting. If none of the above times works for you, we are also available by appointment.

Recitation:

Recitations will be mandatory and done via Zoom. During this period students will have graded interactive learning activities and quizzes. You must attend the session in which you are enrolled.

All times are Tempe local times (Mountain Standard Time).

- Friday 9:00 AM 7 PM
- Saturday 9:00 AM noon 7 PM

Course Learning Outcomes

This course is intended for engineering undergraduate students. A key purpose of this course is to familiarize students with fundamental concepts and terms used in MSE. This course introduces the relationship between structure-processing-property performance.

This is different from most engineering courses in that it is based on:

- Rudimentary introduction of fundamental concepts - "an explanation can never be too clear"
- Focus on terminology - "need to know the language"
- Limited number of select topics - "not every topic needs to be covered"
- Limited depth of presentation - "not every detail needs to be presented"
- Student's inquiry and curiosity prevailing - "nurture the desire to understand and apply"

Textbooks

Required:

Introduction to Materials Science and Engineering – Books 1 to 5
David Theodore & Terry L. Alford, e-Books, Amazon.com

Optional Reference Book:

Materials Science and Engineering: An Introduction, 9th Edition
William Callister and David Rethwisch, e-Book

Course Access

Your ASU courses can be accessed by both my.asu.edu ([Links to an external site.](#))[Links to an external site.](#) and myasucourses.asu.edu ([Links to an external site.](#))[Links to an external site.](#); bookmark both in the event that one site is down.

Computer Requirements

This is a fully online course; therefore, it requires a computer with internet access and the following technologies:

- Web browsers ([Chrome \(Links to an external site.\)](#)[Links to an external site.](#), [Mozilla Firefox \(Links to an external site.\)](#)[Links to an external site.](#), or [Safari \(Links to an external site.\)](#)[Links to an external site.](#))
- [Adobe Acrobat Reader \(Links to an external site.\)](#)[Links to an external site.](#) (free)
- [Adobe Flash Player \(Links to an external site.\)](#)[Links to an external site.](#) (free)
- Webcam, microphone, headset/earbuds, and speaker
- Microsoft Office ([Microsoft 365 is free \(Links to an external site.\)](#)[Links to an external site.](#) for all currently-enrolled ASU students)
- Reliable broadband internet connection (DSL or cable) to stream videos.

Note: A smartphone, iPad, Chromebook, etc. will not be sufficient for completing your work in ASU Online courses. While you will be able to access course content with mobile devices, you must use a computer for all assignments, quizzes, and virtual labs.

Student Success

To be successful:

- check the course daily
- read announcements
- read and respond to course email messages as needed
- complete assignments by the due dates specified
- communicate regularly with your instructor and peers
- create a study and/or assignment schedule to stay on track
- access [ASU Online Student Resources \(Links to an external site.\)](#)[Links to an external site.](#)

Grading

Your grade will be determined based on the following grading schema:

Grade	Percentage
A+	100% - 97%
A	<97-94%
A-	<94-90%
B+	<90-87%
B	<87-84%
B-	<84-80%
C+	<80-77%
C	<77-70%
D	<70-60%
E	<60%

Submitting Assignments

All assignments, unless otherwise announced, **MUST** be submitted to the designated area of Canvas. Do not submit an assignment via email.

Assignment due dates follow Arizona Standard time. Click the following link to access the [Time Converter \(Links to an external site.\)Links to an external site.](#) to ensure you account for the difference in Time Zones. Note: Arizona does not observe daylight savings time.

Grading Procedure

Grades reflect your performance on assignments and adherence to deadlines. Grades on assignments will be available within 72 hours of the due date in the Gradebook.

Late or Missed Assignments

Notify the instructor **BEFORE** an assignment is due if an urgent situation arises and you are unable to submit the assignment on time.

Follow the appropriate University policies to request an [accommodation for religious practices \(Links to an external site.\)Links to an external site.](#) or to accommodate a missed assignment [due to University-sanctioned activities \(Links to an external site.\)Links to an external site.](#).

Communicating With the Instructor

Community Forum

This course uses a discussion topic called "Community Forum" for general questions and comments about the course. Prior to posting a question or comment, check the syllabus, announcements, and existing posts to ensure it's not redundant. You are encouraged to respond to the questions of your classmates.

Email questions of a personal nature to your instructor. You can expect a response within 72 hours.

Chat

The Chat tool in Canvas allows students and teachers to interact in real time. Use Chat only for informal course-related conversations unless your instructor informs you otherwise. Chat is not ideal for questions about assignments; instructors are not required to monitor it and conversations may be buried or lost.

Email

ASU email is an [official means of communication \(Links to an external site.\)Links to an external site.](#) among students, faculty, and staff. Students are expected to read and act

upon email in a timely fashion. Students bear the responsibility of missed messages and should check their ASU-assigned email regularly.

All instructor correspondence will be sent to your ASU email account.

Syllabus Disclaimer

The syllabus is a statement of intent and serves as an implicit agreement between the instructor and the student. Every effort will be made to avoid changing the course schedule but the possibility exists that unforeseen events will make syllabus changes necessary. Remember to check your ASU email and the course site often.

Class Schedule

MSE 250 - Structure and Properties of Materials													
2019 Summer Session A: Monday, 20 May – Thursday, 26 Jun													
session	date	day	book	lectures	topic	HW due	session	date	day	book	lectures	topic	HW due
1	20-May	M	1	1a	0		21	10-Jun	M	4	16ab	5.5	
2	21-May	T	1	2abc	1.1		22	11-Jun	T	4	17abc	6.1	
3	22-May	W	1	3ab	1.2		23	12-Jun	W	4	18ab	6.2	
4	23-May	Th	1	4abc	2.1		24	13-Jun	Th	4	19ab	6.3	
5	24-May	F	1	5ab	2.2		25	14-Jun	F	4	20abc	7.1	
6	25-May	Sa	1	Recitation			26	15-Jun	Sa	4	Recitation		
7	26-May	Su	1	Exam 1		HW 1	27	16-Jun	Su	4	Exam 4		HW 4
	27-May	M	Memorial Day Observed - No Classes										
8	28-May	T	2	6ab; 7abc	2.3; 2.4		28	17-Jun	M	5	21 ab	7.2	
9	29-May	W	2	8ab	3.1;		29	18-Jun	T	5	22ab	8.1	
10	30-May	Th	2	9ab	3.2A		30	19-Jun	W	5	23ab	8.2	
11	31-May	F	2	9de	3.2B		31	20-Jun	Th	5	24abc	9.1	
12	1-Jun	Sa	2	Recitation			32	21-Jun	F	5			
13	2-Jun	Su	2	Exam 2		HW 2	33	22-Jun	Sa	5	Recitation		
							34	23-Jun	Su	5	Exam 5		HW 5
14	3-Jun	M	3	10abc, 11ab	4.1, 4.2		35	24-Jun	M		review		
15	4-Jun	T	3	12ab	5.1		36	25-Jun	T		review		
16	5-Jun	W	3	13ab	5.2;		37	26-Jun	W		review		
17	6-Jun	Th	3	14ab	5.3		38	27-Jun	Th		Final Exam		
18	7-Jun	F	3	15ab	5.4								
19	8-Jun	Sa	3	Recitation									
20	9-Jun	Su	3	Exam 3		HW 3							