

Course Syllabus

INTRODUCTION TO MATERIALS SCIENCE AND ENGINEERING
MME 2303 • Fall 2020 • CRN 12139

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Course

COURSE DESCRIPTION:

This course is an introduction to the properties of engineering materials (metals, ceramics, polymers, and composites) and the relationships between structure, properties, performance, and processing to include characterization through materials testing.

PREREQUISITE:

CHEM 1305 with a grade of "C" or better.

REQUIRED COURSE MATERIALS:

- WileyPlus for Course No: A59670: The subscription to WileyPlus also includes access to the book: Materials Science & Engineering: An Introduction, 10th Edition, Callister
- WileyPlus is required for this class, you will not be able to access assignments without a subscription.
- You will also need regular access to a computer, stable, consistent internet, Blackboard, and your UTEP email account.

Communication

CLASS MEETING TIMES AND PLACES:

Online Only, Asynchronous, Blackboard (Bb)

All times listed on this syllabus and Bb will be in Mountain Standard Time (MST)

VIRTUAL OFFICE HOURS:

TR 9:30-10:30am MST or by appointment

I encourage you to drop into my virtual office hours any time throughout the semester, individually or with peers. If you are unable to visit during my office hours, please contact me by email to arrange another time. Office hours provide you and I with a set time to discuss assignments, academic and professional interests, study strategies, or anything that can help you be successful in this class and prepare you for

your career and/or graduate school. The TA for this class will also hold virtual office hours that can be used for questions, tutoring, and other class concerns. Please check Bb for times.

HOW TO USE VIRTUAL OFFICE HOURS:

- Students will access the Virtual Office Hours through the Bb course. In the Navigation Pane, under Communication Tool you will find the link to the Virtual Office Hours.
- Once in the Virtual Office Hours select the session for either Dr. Smith, Teaching Assistant, or Student Lounge, depending on the time and your questions.
- Students will raise their hand immediately upon entry into the session. Click on the Raise Hand icon located at the bottom of the screen. The reason for this is two-fold:
 - It creates a queue so the instructor/TA knows who is next.
 - It alerts the instructor/TA that someone has joined the session.
- Once the instructor or TA has moved the student to a breakout group (if necessary), students may be asked to enable their web cam and show their Student ID for identity verification.

HOW TO CONTACT DR. SMITH

- Bb Email: Use this tool for all communication related to this course, including but not limited to questions about grades or absences. You can find this tool by going to our Bb course and finding *Bb Email* under *Communication Tools* in the Navigation Pane.
- UTEP Email: Use this for all communication **NOT** related to this course, for example advising, career questions, general questions about MME or regarding other courses. You can find this at the *My UTEP* website under *Student Mail*.
- Help Board: Please use the *Help Board* in our Bb course for questions related to course content, assignments, due dates or technical issues with Bb. These questions are viewable by the entire class, so do not post any personal information, i.e. grade, or ID #s. If you know the answer to another students question feel free to answer. I will respond to the Help Board questions every Thursday. You can find this link by going to our Bb course and going to *Discussion Board* under *Communication Tools* in the Navigation Pane. You will see the Help Board listed at the top of list. Click in the Help Board and at the top left click *Create Blog Entry*.

STUDENT LOUNGE

I encourage you to work together in groups to solve homework problems; however, do not copy work or answers. Remember that you must work alone when completing quizzes. Discussing problems in groups is a very effective way to learn difficult concepts. Given the current situation it is not feasible to meet in person so please feel free to use Bb to meet and collaborate with co-students. Use the link for the *Virtual Office Hours* and use the session marked *Student Lounge*. Once you join the session you will automatically be assigned the role of presenter so that anyone in the *Student Lounge* will be able to share their screen or use the whiteboard to collaborate.

Content

STUDENT LEARNING OUTCOMES:

The following list provides you with the concepts that you will learn during this class. These ideas will provide you with a broad understanding of Materials Science and Engineering and prepare you for future classes in the MME program.

- Relate bonding, crystalline structures, and imperfections to material properties.
- Summarize fundamental diffusion concepts.
- Identify the mechanical test that can be used to measure important physical and mechanical properties of industrial materials.
- Understand the mechanics of the various failure modes.
- Understand how processing techniques affect material properties.
- Interpret isomorphous, eutectic, and binary phase diagrams.
- Examine the Fe-C phase diagram and equilibrium structures.
- Understand basic characteristics of Polymers, Ceramics, Composites, and Metals.
- Understand basic manufacturing processes of Polymers, Ceramics, Composites, and Metals.

DELIVERABLES AND GRADING:

The purpose of grading is not to rank you, but to uphold a standard of quality, to give you feedback and to measure how well students understand the learning outcomes. In general, no late work is accepted since this is an asynchronous online course; however, given the extraordinary circumstances that we are dealing with contact the instructor if you are having issues turning in assignments.

Each week on Sunday I will release the Weekly Module, in our Bb course in the navigation pane under *Course Content*, click on *Weekly Modules*. This page will also be set as the Home Page. Select the week's module. Within the module folder you will find reading assignments, mini-lectures, PowerPoints, assignments, discussion boards, quizzes, and all other resources needed for that module. Make sure to review and complete all components of the module in order to receive full credit.

Because this is an online course, attendance is determined by class participation online; participation and activity on Bb are required and will be monitored. Participation is determined by completion of the following activities:

- Reading/Viewing all course materials to ensure understanding of assignment requirements
- Participating in discussion with your peers on the Discussion Boards and Student Lounge (grading rubric provided in the "grading information" area of each forum)
- Completing all Module Activities (assignments, quizzes, etc.)

To preserve a student's GPA, you WILL be dropped from the course for failure to turn in two or more module assignments or if you do not log into Bb weekly. You will first be provided with a warning through Bb email and then dropped from the class if you are not responsive.

The grading percentages are as follows:

Discussion Boards: 25%

Assignments: 25%

Module Quizzes: 40%

Final Exam: 10%

A graded discussion board assignment will be provided bi-weekly. The discussion board assignment may require you to create a video, discuss an assigned journal article, share applicable Materials Science news, or research an assigned topic. The discussion board allows all of the students in the class to share in your learning. The rubric and requirements of discussion board assignments will be provided with each assignment.

Assignments are provided as a way for you to practice problems in order to study for the quizzes and help focus on the learning outcomes. Assignments will be completed for each module and turned in through Bb.

Module Quizzes will be given at the end of each module and will be based on assignment problems, examples from lectures, and any of the resources found in the module. Quizzes will be completed on Bb. Quizzes are to be completed alone and without using any resources other than those explicitly stated in the quiz instructions, this is to include using outside resources like Chegg or any other student.

A comprehensive Final Exam will be given Monday December 7, 2020. The exam will be completed through Bb and available to take all day, but will be timed. Respondus lockdown web browser and a webcam will be used to monitor the exam.

Rules and Resources

[N]ETIQUETTE AND ONLINE BEHAVIOR

Carefully review the documents titled *[N]etiquette and Communication Expectations* in the *Online Learning Guides* area of Bb. Always consider audience. Remember that members of the class and the instructor will be reading any and all postings. Respect and courtesy must be provided to classmates and to instructor at all times. No harassment or inappropriate postings will be tolerated. When reacting to someone else's message, address the ideas, not the person. Post only what anyone would comfortably state in a face-to-face situation.

Blackboard is not a public internet venue; all postings to it should be considered private and confidential. Whatever is posted on in these online spaces is intended for classmates and professor only. Please do not copy documents and paste them to a publicly accessible website, blog, or other space. If students wish to do so, they have the ethical obligation to first request the permission of the writer(s). Discussion board

postings are NOT a summary of course materials, debates, or your opinion. They are critical analysis and academic discussions among students. Above all remember to be respectful of your peers and instructor.

Any interactions/behaviors that do not meet the criteria laid out in the documents listed above or follow rules in the Handbook of Operating Procedures will be referred to the Office of Student Conduct and Conflict Resolution.

TECHNOLOGY REQUIREMENTS

Course content is delivered via the Internet through the Blackboard learning management system (LMS). Ensure your UTEP e-mail account is working and that you have access to the Web and a stable web browser. Mozilla Firefox and Google Chrome are the most supported browsers for Blackboard; other browsers may cause complications with the LMS. When having technical difficulties, update your browser, clear your cache, or try switching to another browser.

You will need to have or have access to a computer/laptop, scanner, a webcam, and a microphone. You will need to download or update the following software: Microsoft Office, Adobe, Flashplayer, Windows Media Player, QuickTime, and Java. Check that your computer hardware and software are up-to-date and able to access all parts of the course. All of the software listed is available through UTEP for free to students.

If you encounter technical difficulties beyond your scope of troubleshooting, please contact the UTEP Help Desk as they are trained specifically in assisting with technological needs of students.

ACADEMIC INTEGRITY AND SCHOLASTIC DISHONESTY:

A fundamental principle for any educational institution, academic integrity is highly valued and seriously regarded at The University of Texas at El Paso. More specifically, students are expected to maintain absolute integrity and a high standard of individual honor in scholastic work undertaken at the University. At a minimum, you should complete any assignments, exams, and other scholastic endeavors with the utmost honesty, which requires you to:

- acknowledge the contributions of other sources to your scholastic efforts;
- complete your assignments independently unless expressly authorized to seek or obtain assistance in preparing them;
- follow instructions for assignments and exams, and observe the standards of your academic discipline; and
- avoid engaging in any form of academic dishonesty on behalf of yourself or another student.

For the official policies on academic integrity and scholastic dishonesty, please refer to Handbook of Operating Procedures.

An additional note on Chegg, Slader, CourseHero, and other similar websites: While there are some legitimate uses of these sites, proceed with caution. Never post questions from the class as this is

regarded as cheating and in general be careful with the accuracy of information you receive from any online source. Also be aware that these entities cooperate fully with academic institutions. For example, Chegg explicitly states, “in the event your institution contacts Chegg as part of an investigation into academic integrity, Chegg is authorized under our Terms of Service and Privacy Policy to cooperate fully in that investigation and we commonly do. This can include providing information to your institution about your user profile, account, site usage activity, and interactions with Chegg Tutors.”

DISABILITIES AND ACCOMMODATIONS:

If you have or believe you have a disability, you may wish to contact the Center for Accommodations and Support Services (CASS) to show documentation of a disability or to register for testing and services. Students who have been designated as disabled must reactivate their standing with the CASS yearly. If you feel that you may have a disability requiring accommodations and/or modifications, contact CASS at 915-747-5148. You also can visit the CASS website at <http://sa.utep.edu/cass> or the CASS office in Room 108 East Union Building (please check if/when the office is open for in-person meetings).

EXCUSED ABSENCES AND/OR COURSE DROP POLICY:

According to UTEP Curriculum and Classroom Policies, “When, in the judgment of the instructor, a student has been absent to such a degree as to impair his or her status relative to credit for the course, the instructor may drop the student from the class with a grade of “W” before the course drop deadline and with a grade of “F” after the course drop deadline.” See academic regulations in the UTEP Undergraduate Catalog for a list of excuse absences. Therefore, if I find that, due to non-performance in the course, you are at risk of failing, I will drop you from the course. I will provide 24 hours advance notice via email.

OR

I will not drop you from the course. However, if you feel that you are unable to complete the course successfully, please let me know and then contact the Registrar’s Office to initiate the drop process. If you do not, you are at risk of receiving an “F” for the course.

MAKE-UP WORK

Make-up work will be given only in the case of a documented emergency. Note that make-up work may be in a different format than the original work, may require more intensive preparation, and may be graded with penalty points. If you miss an assignment and the reason is not considered excusable, you will receive a zero. It is therefore important to reach out to me—in advance if at all possible—and explain with proper documentation why you missed a given course requirement. Once a deadline has been established for make-up work, no further extensions or exceptions will be granted.

COVID-19 PRECAUTIONS & ACCOMMODATIONS:

Students are not permitted on campus when they have a positive COVID-19 test, exposure, or symptoms. If you are ill and cannot complete your work we will arrange for makeup work. I recommend notifying me as soon as possible that you are ill, so that you are not dropped from the course due to inactivity.

You must STAY AT HOME and REPORT if you (1) have been diagnosed with COVID-19, (2) are experiencing COVID-19 symptoms, or (3) have had recent contact with a person who has received a positive coronavirus test. Reports should be made at screening.utep.edu. If you know of anyone who should report any of these three criteria, you should encourage them to report. If the individual cannot report, you can report on their behalf by sending an email to COVIDaction@utep.edu. For each day that you attend campus—for any reason—you must complete the questions on the UTEP screening website (screening.utep.edu) prior to arriving on campus. The website will verify if you are permitted to come to campus. Under no circumstances should anyone come to class when feeling ill or exhibiting any of the known COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, and alternative instruction will be provided. Students are advised to minimize the number of encounters with others to avoid infection.

Wear face coverings when in common areas of campus or when others are present. You must wear a face covering over your nose and mouth at all times in this class. If you choose not to wear a face covering, you may not enter the classroom. If you remove your face covering, you will be asked to put it on or leave the classroom. Students who refuse to wear a face covering and follow preventive COVID-19 guidelines will be dismissed from the class and will be subject to disciplinary action according to Section 1.2.3 Health and Safety and Section 1.2.2.5 Disruptions in the UTEP Handbook of Operating Procedures.

TEST PROCTORING SOFTWARE

Two course assessments (the midterm and final exams) will make use of Respondus Lock Down Browser and Respondus Monitor inside of Blackboard to promote academic integrity. You are encouraged to learn more about how to use these programs prior to the first test.

Please review the following guidelines:

- The assessments will only be available at the times identified on the course calendar.
- You may take the test at any time during the 24-hour window.
- A reliable Internet connection is essential to completing the exam. If you must go to a location to take the exam (such as the library), be sure to follow their health and safety requirements.
- You have 2 attempts to take the test. Once the window closes, your answers will be saved, and no changes can be made. The higher score will be recorded.
- Respondus Lockdown Browser will require that all internet tabs are closed prior to the start of the test.
- Respondus Monitor requires a webcam and microphone.

- You will be required to show the webcam your student ID prior to the start of the test.
- Your face should be completely visible during the test. Blocking the camera will disable the test.
- No notes or textbook materials are permitted during the test. Respondus Monitor requires you to take a video of your surrounding area (desk, chair, walls, etc.)
- You should not have conversations with other people and/or leave and return to the area during the test.

STUDENT RESOURCES:

UTEP provides a variety of student services and support:

- [UTEP Library](#): Access a wide range of resources including online, full-text access to thousands of journals and eBooks plus reference service and librarian assistance for enrolled students.
- [Help Desk](#): Students experiencing technological challenges (email, Blackboard, software, etc.) can submit a ticket to the UTEP Helpdesk for assistance. Contact the Helpdesk via phone, email, chat, website, or in person if on campus.
- [University Writing Center \(UWC\)](#): Submit papers here for assistance with writing style and formatting, ask a tutor for help and explore other writing resources.
- [Math Tutoring Center \(MaRCS\)](#): Ask a tutor for help and explore other available math resources.
- [Military Student Success Center](#): UTEP welcomes military-affiliated students to its degree programs, and the Military Student Success Center and its dedicated staff (many of whom are veterans and students themselves) are here to help personnel in any branch of service to reach their educational goals.
- [RefWorks](#): A bibliographic citation tool; check out the RefWorks tutorial and Fact Sheet and Quick-Start Guide.