

Syllabus

METALLURGICAL AND MATERIALS ENGINEERING DESIGN AND PRACTICE Part I

MME 4271 - Fall 2019

Course Description:

Metallurgical and Materials Engineering Design and Practice (Parts 1 and 2) integrates concepts from all areas of materials science and metallurgical engineering into a practical senior-level capstone course with a focus on design practice. Students are expected to participate in group project assignments to apply knowledge acquired during their engineering education toward the generation of real-world design solutions. The fundamentals of requirements specification, experimental design, materials selection, materials processing and project execution will serve as the common structure in the development of the design project to be presented for critical peer review at the end of Part 2 of this course series. Successful completion of both design courses will require the students to demonstrate effective communication skills, both oral and written.

Part 1 of this course will involve lectures on modern materials design practice and the application of analytical tools as part of the design process, specifically failure modes and effects analysis (FMEA) and hazards analysis (HA). Case studies on relevant design successes and failures will be presented throughout the semester and critically discussed during laboratory sessions of the course. During Part 1 of this course, students will be expected to develop a group design project concept and present a critical design review (CDR) before the end of the semester. For consideration, several industry-sponsored project ideas will be offered during the 6 weeks of the semester. However, project groups are free to propose an independent design project.

Instructor: Darren M. Cone
Email: dmcone@utep.edu (*preferred method of communication*)
Phone: 747-5785
Office: Metallurgy M302B

Office Hours: Tuesday 10:30 am - 12:00 pm
Thursday 10:30 am - 12:00 pm

If you are unable to attend normal office hours, please email me so that we can make other arrangements as needed.

Meeting Times and Places:

Lectures will be held on Thursdays 9:30 - 10:30 in PSCI 314. Laboratory sessions will be on Thursday afternoons from 3:00 – 6:00 pm in LART 307.

Deliverables and Grading:

Class participation/discussion	10%
Critical Design Review (CDR)	
- Presentation	45%
- Document	45%

Classroom Etiquette: Part of being a professional is arriving on time and being prepared to participate. Another part is respecting the other people in the class, including the speaker. If you come late to class or have to leave early, please do so quietly. Please use professional discretion with your cell phone, and turn off the ringer during class. If you must answer the phone, please leave the class discreetly. You may return to the class once your call is finished.

Cheating/Plagiarism:

Cheating is unethical and not acceptable. Plagiarism is using information or original wording in a paper or reference without giving credit to the source of that information or wording: it is also not acceptable. You may not submit work for this class that you did for another class. If you are found to be cheating or plagiarizing, you will be subject to disciplinary action, per UTEP catalog policy. Refer to

<http://www.utep.edu/dos/acadintg.htm> for further information.

Disabilities:

I will make any reasonable accommodation for students with limitations due to disabilities, including learning disabilities. Please see me personally before or after class in the first two weeks or make an appointment to discuss any special needs you might have. If you have a disability and need classroom accommodations, please contact The Center for Accommodations and Support Services (CASS) at 747-5148, or by email to cass@utep.edu, or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at www.sa.utep.edu/cass.