

## SYLLABUS

MME 1301 (Class)

MME 1101 (Lab)

INTRODUCTION to MME DESIGN

**Course Description:** This course is designed to introduce you to the metallurgical and materials engineering profession, including the role and responsibilities of the metallurgical/materials engineer in today's society. This course will introduce you to some of the methods that we use in picking the right material for a particular application, testing material properties, manufacturing metals and other materials, investigating why products or materials sometimes fail, and developing new and improved materials. Along the way, you will gain experience in analyzing data and writing professional reports. We will explore effective procedures for solving simple metallurgical and materials engineering and design problems, using mathematics, common software applications, basic measuring systems and devices, microscopes and laboratory instruments, computational tools, and statistical concepts. The laboratory portion (MME 1101) will provide hands-on, practice-oriented experiences in metallurgy laboratories, both on campus and in nearby industries. The lab experiences will also introduce you to some of the advanced equipment that you will be learning during future course work, including the x-ray diffractometer, scanning electron microscope, etc. Safe practices and ethical behavior in lab work will be emphasized.

**Instructor:** Dr. Christopher Bradley

**Email:** [cbradley2@utep.edu](mailto:cbradley2@utep.edu) (*preferred method of communication*)

**Office:** Metallurgy Suite, Room M201-C

**Office Hours:** TR 2:00-3:00pm (If you need to meet with me, please email me so that we can make other arrangements as needed).

**Required Textbook:** No textbook is required for this course. However, there will be weekly assignments from books available in the library, online references and other materials that I will make available to you on Blackboard and/or in class handouts.

<b>Grading:</b>	<b>MME 1101</b>	Lab Work, Reports, Presentations	100%
	<b>MME 1301</b>	Quizzes/In-class Work	10%
		Lab	20%
		3 Exams	45%
		Final Exam	25%

**Honesty and Professionalism:** Any instance of cheating or plagiarism will be reported to the Dean of Students for appropriate action (which includes possible failure of this course and/or dismissal from the University).

**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. Cell phones are to be silenced during class. If you must answer the phone, please leave the class and return discreetly when the call is over. Notetaking will be done by you, not your cell phone. *If you are caught taking photographs during class, your phone will be confiscated and returned after class is finished.*

**Assignments:** Homework and class assignments are to be handed in on engineering paper which means assignments turned in on standard paper, notepads, index cards, etc. will **not** be accepted. Assignments that require graphical representation will need to be performed using Excel which will be printed out and attached to your assignment. All assignments will require you to **show all work** where necessary in order to receive full credit for the problems. Late homework will **not be accepted** unless otherwise cleared by me, do not assume that I will accept a late assignment(s) without penalty.

**GENERAL COURSE TOPICS (Some topics may change)**

- Developing the problem-solving and design skills of engineering
  - The role of analysis in engineering
  - Dimensions and units
  - Analysis methodology
  - Problem solving using common engineering concepts
  - Using spreadsheet software to analyze data and create professional graphics
- Engineering ethics, including honesty and “data ethics”
- Statistical analysis of data and drawing conclusions from experiments
- Writing concise and professional scientific and engineering reports
- Developing and delivering a powerful presentations
- Planning your career path in metallurgy and materials engineering
- Enforcing laboratory/workplace/chemical safety principles to ensure safe work environments and establish fun hands-on activities

As part of this classroom experience, students should expect to actively participate in discussions, give presentations on a variety of topics and do what every good engineer does instinctively – **Ask Many Questions!**