

# Materials Joining Technology - Spring 2023

MME 4350 - CRN: 26605

MME 5390 - CRN: 27376

MME 6390 - CRN: 27377

## INSTRUCTOR: Paul R. Spencer, P.E.

[prspencer@utep.edu](mailto:prspencer@utep.edu) (preferred contact method)

Office Hours: TR 6:50 pm - 7:30 in LIB208 (after class, or by appointment)

## COURSE DESCRIPTION

Material Joining Technologies: Fundamentals of materials joining theory and application. A variety of technologies will be covered, to include: welding, brazing, soldering, adhesives, etc. for metals, ceramics, polymers, composites and electronic materials. Emphasis will be on both the theoretical principles of each process and practical aspects of the technique and or equipment.

Undergraduate Prerequisites: MME 3406 with a "C" or better.

## TOPICS TO BE COVERED

- Introduction to Joining - A Process and Technology
- Mechanical Joining
- Adhesive Bonding and Cementing
- Welding, Brazing and Soldering - The Processes
- Basic Metallurgy of Welding, Brazing and Soldering
- Hybrid Joining Technologies
- Joining of Metals, Alloys and Intermetallics
- Joining of Ceramics and Glasses
- Joining of Polymers
- Joining of Composite Materials and Structures
- Joining Dissimilar Material Combinations
- Joining Living Tissue and Structures

## REQUIRED MATERIALS

*Joining of Materials and Structures*, Messler Jr., Robert W., Elsevier (2004).  
ISBN: 0-7506-7757-0

## COURSE MEETING TIMES AND LOCATIONS

Lecture: Liberal Arts Bldg., Rm. 208, TR 5:30 - 6:50 pm

## GRADING

This course will include three semester exams and a non-comprehensive final exam.

## Grade Distribution:

100-90 = A      89-80 = B      79-70 = C      69-60 = D      59 and Below = F

100% Exams (x4) (25% each)

**Note:** Students enrolled in the MME 5390 and MASE 6390 cross-listed sections of this course will be subjected to more rigorous, comprehensive and exhaustive examinations, in accordance with their respective academic levels (MS vs PhD). However, the grade distribution scale and breakdown will remain the same for all sections of this course.

## DEADLINES FOR HOMEWORK AND EXAMS

All homework assignments must be uploaded to Blackboard before the posted due dates. Late submissions without prior coordination with me will not be accepted and will be given a grade of zero.

## TECHNOLOGY REQUIREMENTS

This course will be taught in an **in-person format**, but will maintain course content online to accommodate those students who may be required to remain off campus for health reasons. All online content will be distributed through the Blackboard learning management system. Students should ensure their UTEP e-mail account is working and that you have access to the internet with a stable web browser.

For MS Teams used for office hours as required, you need to have access to a computer/laptop with a webcam and a microphone. You will need to download and/or update the following software: Microsoft Office 365, available free to registered UTEP students. Check that your computer hardware and software are up-to-date and able to access all parts of the course. Click the following link for more information about [Microsoft Office 365](#).

**Important:** 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.

## CLASS RECORDINGS

The use of recordings will enable you to have access to class lectures, group discussions, and so on in the event you miss a synchronous or in-person class meeting due to illness or other extenuating circumstance. Our use of such technology is governed by the Federal Educational Rights and Privacy Act (FERPA) and UTEP's acceptable-use policy. A recording of class sessions will be kept and stored by UTEP, in accordance with FERPA and UTEP policies. Your instructor will not share the recordings of your class activities outside of course participants, which include your fellow students, teaching assistants, or graduate assistants, and any guest faculty or community-based learning partners with whom we may engage during a class session. You may not share recordings outside of this course. Doing so may result in disciplinary action. The course materials are only for the use of students currently enrolled in this course and only for the purpose of this course. They may not be further disseminated.

## COURSE COMMUNICATION

- Office Hours: I don't have an office on campus, but I will be available for 30 minutes or so immediately after each class session ends.
- UTEP email - the best way to contact me: [prspencer@utep.edu](mailto:prspencer@utep.edu)
- Announcements: Check the Blackboard announcements frequently for any updates, deadlines, or other important messages.

## 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 excused 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.

Alternatively, 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.

## ACCOMMODATIONS POLICY

The University is committed to providing reasonable accommodations and auxiliary services to students, staff, faculty, job applicants, applicants for admissions, and other beneficiaries of University programs, services and activities with documented disabilities in order to provide them with equal opportunities to participate in programs, services, and activities in compliance with sections 503 and 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act (ADA) of 1990 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. Reasonable accommodations will be made unless it is determined that doing so would cause undue hardship on the University. Students requesting an accommodation based on a disability must register with the [UTEP Center for Accommodations and Support Services](#) (CASS). Contact the Center for Accommodations and Support Services at 915-747-5148, or email them at [cass@utep.edu](mailto:cass@utep.edu), or apply for accommodations online via the [CASS portal](#).

## SCHOLASTIC INTEGRITY

Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another as ones' own. Collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. All suspected violations of academic integrity at The University of Texas at El Paso must be reported to the [Office of Student Conduct and Conflict Resolution \(OSCCR\)](#) for possible disciplinary action. To learn more, please visit [HOOP: Student Conduct and Discipline](#).

## PLAGIARISM DETECTING SOFTWARE

Some of your course work and assessments may be reviewed using SafeAssign or other cheating/plagiarism detecting software. SafeAssign is used to review assignment submissions for originality and will help you learn how to properly attribute sources rather than paraphrase. Other software tools may be employed to ensure students are not utilizing Chegg or other online problem-solving websites for homework, quizzes or exams.

## COPYRIGHT STATEMENT FOR COURSE MATERIALS

All materials used in this course are protected by copyright law. The course materials are only for the use of students currently enrolled in this course and only for the purpose of this course. They may not be further disseminated.

## COVID-19 PRECAUTIONS

You must STAY AT HOME and REPORT if you:

- Have been diagnosed with COVID-19;
- Are experiencing COVID-19 symptoms and are pending a diagnosis.

Reports should be made at [covidaction@utep.edu](mailto:covidaction@utep.edu). The UTEP Covid Action team will advise students on the appropriate next steps, and ensure you have the information necessary to obtain the proper level of care. **Do NOT come to class if you are sick!**

## STUDENT RESOURCES

### Technology Resources:

[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.

### Academic Resources:

[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.

[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.

[History Tutoring Center \(HTC\)](#): Receive assistance with writing history papers, get help from a tutor and explore other history resources.

[RefWorks](#): A bibliographic citation tool; check out the RefWorks tutorial and Fact Sheet and Quick-Start Guide.

### Individual Resources:

[Military Student Success Center](#): Assists personnel in any branch of service to reach their educational goals.

[Center for Accommodations and Support Services](#): Assists students with ADA-related accommodations for coursework, housing, and internships.

[Counseling and Psychological Services](#): Provides a variety of counseling services including individual, couples, and group sessions as well as career and disability assessments.