

MATERIAL JOINING TECHNOLOGIES

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.

Instructor: Dr. Christopher Bradley

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

Office: Metallurgy Suite, Room M201-C

Office Hours: MW 12:00-1:00pm or by appointment (*If you need to meet with me, please email me so that we can make other arrangements as needed*).

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

Grading:

Assignments (In-class and Take Home)	20%	
3 Exams and weekly quizzes	80%	(10 Quiz minimum, lowest grades dropped)

Note: Students enrolled in the MME 5350 and MASE 6350 cross-listed sections of this course will be subjected to more rigorous, comprehensive, and exhaustive assignments and 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.

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

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 one's 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 [HOOP: Student Conduct and Discipline](#).

Guidance on Artificial Intelligence (AI): Using AI for Brainstorming!

Some AI technologies or automated tools, particularly generative AI such as [ChatGPT](#) or [DALL-E](#), can be beneficial during the early brainstorming stages of an activity, and you are welcome to explore them for that purpose. However, keep in mind that AI-generated ideas are not your own and may hinder your ability to think critically and creatively about a problem. It is also important to remember that these technologies often “hallucinate” or produce materials and information that are inaccurate or incomplete—even providing false citations for use.

That said, you are not allowed to submit any AI-generated work in this course as your own. If you use any information or materials created by AI technology, you are required to cite it like you would any other source. Consider how this will affect your credibility as a writer and scholar before doing so. Any direct use of AI-generated materials submitted as your own work will be treated as plagiarism and reported to the Office of Student Conduct and Conflict Resolution (OSCCR).

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 must 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.**

Course Topics to Be Covered (Tentative!):

- 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

Assignments: Homework and class assignments are to be uploaded to Blackboard 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 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.

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-hour 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.

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

Accommodation 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 accommodation based on a disability must register with the [UTEP Center for Accommodations and Support Services \(CASS\)](#).

COVID-19 Precautions

Please stay home if you have been diagnosed with COVID-19 or are experiencing COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, so that we can work on appropriate accommodation. If you have tested positive for COVID-19, you are encouraged to report your results to covidaction@utep.edu, so that the Dean of Students Office can provide you with support and help with communication with your professors. The Student Health Center is equipped to provide COVID 19 testing.

The Center for Disease Control and Prevention recommends that people in areas of substantial or high COVID-19 transmission wear face masks when indoors in groups of people. The best way that Miners can take care of Miners is to get the vaccine. If you still need the vaccine, it is widely available in the El Paso area, and will be available at no charge on campus during the first week of classes. For more information about the current rates, testing, and vaccinations, please visit epstrong.org.

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.