

MME 1205 - Graphics CRN: 22597 Spring 2023

INSTRUCTIONAL TEAM

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COURSE DESCRIPTION

MME 1205 (Graphics) is a required 2-credit course (1 hours of lecture and 3 lab hours). Three broad topics will be covered in this class:

- 1) An introduction to the Python programming language
- 2) Applications of Python programming to problems that are unique to Metallurgical, Materials and Biomedical Engineering (MMBME) including numerical analysis of experimental data, quantitative image analysis and basic statistical analysis of material response
- 3) An introduction to digital manufacturing and engineering drawing software using Autodesk Fusion 360.

The goal of this course is to establish a foundation for numerical analysis, digital manufacturing and computational methods that can be carried forward throughout the rest of the MMBME curriculum.

DAILY SCHEDULE

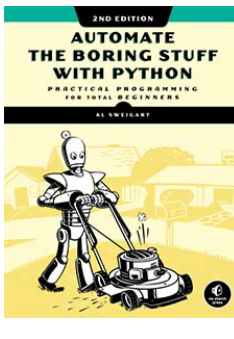
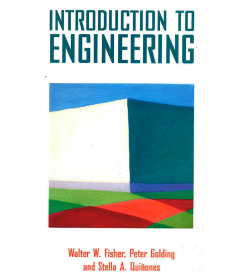
Day	Time	Description
Mon	11:59 pm	Reading assessment due on blackboard
Tues	12:00-12:50 pm	Lecture
Tues	1:00-3:50 pm	Laboratory session with hands on assignments and applications of Python and Solidworks
Wed	9:30 am	Instructor Office Hours (1 hours) Metallurgy M302 or on Teams Alternative times can be scheduled using an outlook calendar request via email to bschuster@utep.edu
TBD	TBD	Please fill https://www.when2meet.com/?23134158-2oUHs to assist the instructional team with scheduling TA office hours.

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DAILY SCHEDULE

Date	Time	Description
March 5, 2024	12:00 pm	Midterm
	1:00 pm	Midterm Portfolio Review
March 20, 2024	11:59 pm	Midterm Grades
March 28, 2024	11:59 pm	Spring Drop/Withdrawal Deadline
May 7, 2024	1:00-2:00 pm	Final Exam
	2:00 – 3:45 pm	Final Portfolio Review

REQUIRED MATERIALS

	<p>FREE TEXTBOOK!</p> <p>https://automatetheboringstuff.com/2e/chapter0/</p> <p>Automate the Boring Stuff with Python By Al Sweigart.</p>
	<p>Introduction to Engineering</p> <p>Select passages will be provided by the instructional team. You do not need to purchase this textbook.</p> <p>Walter Fisher, Peter Golding and Stella Quinones</p>
<p>Personal Computer</p>	<p>To complete this class, you will need to own or borrow a windows, apple or linux computer with a modern processor (Intel I5 or better), at least 8GB of RAM and a 64 bit operating system is recommended. You may be able to borrow one from the Library:</p> <p>https://www.utep.edu/technologysupport/TSCenter/tsc_eqcheckout.html</p>

List of Topics (not in chronological order)

Description	Topics
Introduction to Python	<ul style="list-style-type: none"> Python Basics Flow Control Functions Lists Dictionaries Strings Reading and Writing Files

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	Working with excel, csv and JSON data Numerical python (numpy) Plotting (Matplotlib)
Image Analysis	Quantification of image based microstructural and biomedical data. 2D and 3D analysis Basic statistical analysis from 2D and 3D data. Automation and batch image analysis
Digital Manufacturing	Introduction to computer aided design Basic 3D design and drafting 3D Printing of Structures

GRADING

Description	Percentage
Participation and Attendance*	15%
Reading Assessments	5%
Laboratory Assignments/Homework	45%
Quizzes	5%
Midterm/Portfolio Review**	15%
Final/Portfolio Review**	15%

Rule of 2!

I will drop the 2 lowest grades on your reading assignments, laboratory assignments, and quizzes.

You will lose 50% of the credit for late assignments. If the grade on a particular assignment is the lowest, it will be dropped but no other exceptions will be made. Once a particular assignment has been graded, late submissions will receive a zero.

IMPORTANT

Half of your midterm and final exam grades depend the in-person review of your portfolio that consists of a single jupyter notebook that includes fully functioning code for each individual assignment. If you fall behind or have not completed all of your assignments to date, then you put your midterm and final exam grade at risk! Incomplete midterm portfolio assignments put your

GRADED ASSIGNMENTS

Python assignments should be submitted using jupyter notebooks which will be covered in detail in the class. Assignments should be self contained and include all data, python libraries required to analyze a particular data set. Complete solidworks project files including part, assembly and drawing files should be submitted in a single *.zip file but

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the required deadline. Software version control is important to maintain compatibility for the entire student and instructor group.

TECHNOLOGY REQUIREMENTS

Homework, reading assessments and laboratory assignments will be submitted using the Blackboard learning management system. Ensure your UTEP e-mail account is working and that you have access to the Web and a stable web browser. Please test your preferred internet browser to ensure full compatibility with Blackboard and Blackboard Collaboration Ultra. Please reach out to the UTEP Helpdesk and Instructional Team early in first week of the semester if you have any technical difficulties.

You will need to have access to a computer/laptop, scanner, a webcam, and a microphone. IF YOU DO NOT HAVE A SCANNER, YOU CAN OPT FOR APPS LIKE CAMSCANNER TO SCAN YOUR WORK. You will require access to Adobe Acrobat Reader and Microsoft Office or [Microsoft Office 365](#). Check that your computer hardware and software are up-to-date and able to access all parts of the course.

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. Please do not contact me for this type of assistance. The Help Desk is much better equipped than your Instructional Team!

EXCUSED ABSENCES AND/OR COURSE DROP POLICY

I will provide midterm grades via goldmine and blackboard no later than March 20, 2024. You will be required to have completed all assignments with a grade of 70 or better by this time. If you have not satisfied this requirement, you may be dropped from the class as described by the University policies described below.

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.

DEADLINES, LATE WORK, AND ABSENCE POLICY

See the weekly announcements on Blackboard for the due date and time for your homework assignments, quizzes and other coursework.

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. You will lose 50% off of late assignments. Once these the assignments for the rest of the class have been graded, then you will be assigned a

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zero for that assignment. 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.

Give yourself plenty of time to submit your coursework to avoid technical issues near deadlines.

INCOMPLETE GRADE POLICY

Incomplete grades may be requested only in exceptional circumstances after you have completed at least half of the course requirements. Talk to me immediately if you believe an incomplete is warranted. If granted, we will establish a contract of work to be completed with deadlines.

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, 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](#).

GUIDANCE ON ARTIFICIAL INTELLIGENCE

AI prohibited

Use of AI technologies or automated tools, particularly generative AI such as [ChatGPT](#) or [DALL-E](#), is **not allowed** for assignments in this class. Each student is expected to use critical and creative thinking skills to complete tasks and not rely on computer-generated ideas. 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).

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PLAGIARISM DETECTING SOFTWARE

Some of your course work and assessments may be submitted to SafeAssign, a 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.