



THE UNIVERSITY OF ARIZONA
COLLEGE OF ENGINEERING

Civil & Architectural
Engineering & Mechanics

CE 260 Computer Programming in Civil Engineering Spring 2019 - 85879 & 85880

Class Times & Location: Friday - 1:00PM - 1:50PM. M Pacheco ILC, Rm 125
Recitation / Discussion: Monday - 12:00PM - 12:50PM. Saguaro Hall, Rm 114

Description of Course:

(1 unit) This 1-unit course is designed to give students a basic knowledge of MATLAB programming. The course will cover fundamentals of MATLAB operations with arrays (vectors and matrices), it will discuss how to create script files, function files, use loop and conditional statements and present the computed results graphically. Students will be required to write simple programs in MATLAB.

Course Prerequisite(s):

MATH 223

Instructor and Contact Information:

Instructor Name: Cac M. Dao, Ph.D.
Office Location: Civil Engineering Bldg. Rm 324E
Telephone Number: (520) 621-4114
E-mail Address: cmd@email.arizona.edu
Office Hours: Friday 2:00pm - 3:00pm

Preceptors: Xueting Chen (xuetingchen@email.arizona.edu) and Daylan Toledo (daylant@email.arizona.edu)

Grader: William Vail (wavail@email.arizona.edu)

Web Information: <https://d2l.arizona.edu/d2l/home/708137>

Course Format and Teaching Methods:

Web-delivered content, lecture, and in-class discussion with small-group activities.

Course Objectives:

To give students necessary background on MATLAB programming to be ready for advanced courses in numerical analysis and mechanics for civil engineers.

Expected Learning Outcomes:

An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

Absence and Class Participation Policy:

Participating in the course and attending lectures and other course events are vital to the learning process. As such, attendance is required at all lectures and discussion section meetings. Absences may affect a student's final course grade. If you anticipate being absent, are unexpectedly absent, or are unable to participate in class online activities, please contact me as soon as possible. *To request a disability-related accommodation to this attendance policy, please contact the Disability Resource Center at (520) 621-3268 or drc-info@email.arizona.edu.* If you are experiencing unexpected barriers to your success in your courses, the Dean of Students Office is a central support resource for all students and may be helpful. The Dean of Students Office is located in the Robert L. Nugent Building, room 100, or call 520-621-7057.

The UA's policy concerning Class Attendance, Participation, and Administrative Drops is available at: <http://catalog.arizona.edu/policy/class-attendance-participation-and-administrative-drop>

The UA policy regarding absences for any sincerely held religious belief, observance or practice will be accommodated where reasonable, <http://policy.arizona.edu/human-resources/religious-accommodation-policy>.

Absences pre-approved by the UA Dean of Students (or Dean Designee) will be honored. See: <https://deanofstudents.arizona.edu/absences>

Required Texts or Readings:

MATLAB: An Introduction with Applications, Amos Gilat, Pub. John Wiley, Sixth Edition.

Required Software:

MATLAB – Some online tutorial help is available at the following websites

<http://www.mathworks.com/academia/>

http://www.mathworks.com/academia/student_center/tutorials/index.html?link=body

However, if you attend the class regularly and follow the lectures then you do not need any outside help. All registered students can use MATLAB for free. You can download the software from the university website. You can run this software as long as you are a student of the University of Arizona. However, if you want to own the software without any expiration date and would like to use it beyond your student years then you can purchase MATLAB student version that costs about \$100.

Assignments and Examinations:

This course has 3 mid-term exams and 1 final exam. Times for the midterm exams will be announced in the class.

Final Examination:

The date and time of the final exam or project, along with links to the Final Exam Regulations, <https://www.registrar.arizona.edu/courses/final-examination-regulations-and-information>, and Final Exam Schedule, <http://www.registrar.arizona.edu/schedules/finals.htm>

Home Work

Homework problems will be posted on d2l. Homework due date and cutoff time will be announced every time a homework is assigned. The homework submitted after the due date will be marked late but will be graded and returned as long as it is submitted before the cutoff time. Homework submitted after the cutoff time will not be graded and a grade of zero will be assigned.

Grading Scale and Policies:

This course has 3 mid-term exams and 1 final exam. Initial grades are assigned based on the following scale - 75% from 3 mid-term exams (25% weight for each exam) 20% weight for homework, and 5% weight for attendance. Students who are satisfied with their initial grades can skip the final exam and their initial grades will be their final grades. Students who are not happy with their course grades can sit for the final exam. After the final exam, they will receive the final grade which will be calculated based on the following scale - 30% weight for the final exam, 45% weight for 3 mid-term exams (15% weight for each mid-term) 20% weight for the homework and 5% weight for the attendance. Students going for the final exam option will have to take the final grade even if it is lower than their initial grades.

Assignment of the final grade will be based on the following scale:

A	90 - 100
B	80 < 90
C	70 < 80
D	60 < 70
E	< 60

University policy regarding grades and grading systems is available at <http://catalog.arizona.edu/policy/grades-and-grading-system>

Scheduled Topics/Activities:

Week	Topics	Book Sections
1	Class overview (syllabus and policy)	
2	Ch. 1 Starting with MATLAB Ch. 2 Creating Arrays	1.1-1.8 2.1-2.4
3	Martin Luther King, Jr. - no school	
3	Ch. 2 Creating Arrays	2.5-2.10
4	Ch. 3 Mathematical Operations with Arrays	3.1-3.4 3.5-3.7
5	Review for Exam 1 Exam 1: Chapters 1, 2, 3	
6	Ch. 4 Using Script Files and Managing Data	4.1-4.3

7	Ch. 4 Using Script Files and Managing Data Ch. 5 Two-Dimensional Plots	4.4-4.6 5.1-5.5
8	Ch. 5 Two-Dimensional Plots	5.6-5.12
9	Spring Recess – no school	
10	Review for Exam 2 Exam 2: Chapters 4, 5	
11	Ch. 6 Programming in MATLAB	6.1-6.2
12	Ch. 6 Programming in MATLAB	6.3-6.4
13	Ch. 6 Programming in MATLAB	6.5-6.6
14	Ch. 7 User-Defined Functions and Function Files	7.1-7.4
15	Ch. 7 User-Defined Functions and Function Files	7.5-7.9 7.10-7.11
16	Review for Exam 3 Exam 3: Chapters 6, 7	
17	Review for Final Exam	
	Final Exam	

Classroom Behavior Policy:

To foster a positive learning environment, students and instructors have a shared responsibility. We want a safe, welcoming, and inclusive environment where all of us feel comfortable with each other and where we can challenge ourselves to succeed. To that end, our focus is on the tasks at hand and not on extraneous activities (e.g., texting, chatting, reading a newspaper, making phone calls, web surfing, etc.).

Students are asked to refrain from disruptive conversations with people sitting around them during lecture. Students observed engaging in disruptive activity will be asked to cease this behavior. Those who continue to disrupt the class will be asked to leave lecture or discussion and may be reported to the Dean of Students.

Some learning styles are best served by using personal electronics, such as laptops and iPads. These devices can be distracting to other learners. Therefore, students who prefer to use electronic devices for note-taking during lecture should use one side of the classroom.

The use of personal electronics such as laptops, iPads, and other such mobile devices is distracting to the other students and the instructor. Their use can degrade the learning environment. Therefore, students are not permitted to use these devices during the class period.

Threatening Behavior Policy:

The UA Threatening Behavior by Students Policy prohibits threats of physical harm to any member of the University community, including to oneself. See <http://policy.arizona.edu/education-and-student-affairs/threatening-behavior-students>.

Accessibility and Accommodations:

At the University of Arizona we strive to make learning experiences as accessible as possible. If you anticipate or experience barriers based on disability or pregnancy, please contact the Disability Resource Center (520-621-3268, <https://drc.arizona.edu/>) to establish reasonable accommodations.

Code of Academic Integrity:

Students are encouraged to share intellectual views and discuss freely the principles and applications of course materials. However, graded work/exercises must be the product of independent effort unless otherwise instructed. Students are expected to adhere to the UA Code of Academic Integrity as described in the UA General Catalog. See: <http://deanofstudents.arizona.edu/academic-integrity/students/academic-integrity>.

Class Note Copyright:

Selling class notes and/or other course materials to other students or to a third party for resale is not permitted without the instructor's express written consent. Providing student email addresses to a third party is not permitted. Violations to this and other course rules are subject to the Code of Academic Integrity and may result in course sanctions. Additionally, students who use D2L or UA email to sell or buy these copyrighted materials are subject to Code of Conduct Violations for misuse of electronic resources provided by The University of Arizona. This conduct may also constitute copyright infringement.

UA Nondiscrimination and Anti-harassment Policy:

The University is committed to creating and maintaining an environment free of discrimination; see <http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy>

Subject to Change Statement:

Information contained in the course syllabus, other than the grade and absence policy, may be subject to change with advance notice, as deemed appropriate by the instructor.

THESE POLICIES WILL BE STRICTLY ENFORCED WITHOUT EXCEPTION.