



**EGME 205 - Digital Computation**  
**Section 20304 Syllabus**  
**Fall 2025**

**Instructor:** Ammar Dalati, M.S. Mechanical Engineering (CSUF)  
**Email:** mdalati@fullerton.edu  
**Office Hours:** Tuesdays 07:00 PM - 08:00 PM, or by appointment, (Discord)

**Class Time/Location:** Tuesdays/Thursdays 05:30 PM - 06:45 PM, (CS-309)

**Course Description:** This course introduces fundamentals of computer programming and uses MATLAB as the computing environment for basic engineering applications. The course focuses on development of algorithms and their implementation as computer programs using model problems selected from engineering, mathematics and physical sciences. No prior programming experience is needed; some background in calculus and linear algebra, and statistics is required.

Prerequisite: MATH 150A

**Course Website:** All handouts, homework, homework submissions, grading, announcements, exams and other information will be distributed through **Canvas**.

**E-mail:** My preferred communication is through e-mail. Please include **[EGME 205]** at the beginning of the subject line for any direct e-mail to me regarding the class. You can expect me to respond within 48 hours.

**Generative AI Policy:** Unethical Use of AI as defined by the University is **explicitly prohibited** in this course. Please review the universities' statement about [Ethical and Responsible Use of AI](#). Attempts to subvert this prohibition shall be treated in accordance with Academic Integrity policies.

**Textbook:**

*MATLAB: An Introduction with Applications 5th Edition, Amos Gilat, ISBN: 9781118629864*

**Student Learning Outcomes:**

1. Describe how and why digital computation can be used in practical engineering situations.
2. Gain the ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
3. Formulate mathematical and engineering problems using MATLAB.
4. Develop and debug MATLAB scripts and functions to automate calculations and model systems.
5. Import, process, and analyze experimental or simulated data in MATLAB.

6. Visualize engineering data using MATLAB plotting tools.

**Grading scale:** Your final letter grade will be distributed roughly according to the following:

| Grade | Percent    | Grade | Percent   | Grade | Percent   | Grade | Percent   |
|-------|------------|-------|-----------|-------|-----------|-------|-----------|
| A+    | 98.0–100.0 | B+    | 87.0–89.9 | C+    | 77.0–79.9 | D+    | 67.0–69.9 |
| A     | 93.0–97.9  | B     | 83.0–86.9 | C     | 73.0–76.9 | D     | 63.0–66.9 |
| A-    | 90.0–92.9  | B-    | 80.0–82.9 | C-    | 70.0–72.9 | D-    | 60.0–62.9 |
|       |            |       |           |       |           | F     | 0.0–59.9  |

*The instructor reserves the right to adjust these values in the students' favor prior to computing final letter grades. Any adjustments will be applied consistently to all students.*

**Grading Calculation:** Your final grade in the course will be a combination of the grades on the homework assignments, midterm exams, and final exam as follows:

| Type     | Quantity | Percentage |
|----------|----------|------------|
| Quizzes  | 10       | 15%        |
| Homework | 13       | 25%        |
| Project  | 1        | 20%        |
| Exams    | 2        | 40%        |

*The grading scale may be subject to change, and any updates or clarifications regarding course materials shall be communicated to the students in a timely manner.*

#### **Attendance and Participation policy: YOUR ATTENDANCE AND PARTICIPATION EXPECTATIONS**

**Homework:** You may turn in late homework up to a week after it was originally due. Each day that a homework is late will be docked 10% off the maximum allowable points, up to a maximum of 50%. It is important that you stay up to date with homework assignments so that you get the appropriate practice and feedback with the course material. Note also that I cannot guarantee that I will give feedback on late homework within a week after it was originally due, but I will do my best to grade them as quickly as I can. At the end of the semester, your lowest homework score will be dropped from your grade. I still encourage you to make an earnest effort at completing all the homework assignments as they provide practice that is crucial to your learning.

**Student Resources Website:** It is the student's responsibility to read and understand the required and important [student information for course syllabi](#). Included is information about:

- University learning goals
- General Education learning objectives
- Netiquette/appropriate online behavior
- Students' rights to accommodations
- Campus student support resources
- Academic integrity
- Emergency preparedness/what to do
- Library services
- Student IT services and competencies
- Software privacy and accessibility
- Accessibility statement
- Diversity statement
- Land acknowledgement
- Final exam schedule
- Semester calendar

**Class Schedule:** The schedule overview and topics are as follows:

| Week  | Date  | Topic                                              | Assignments |
|-------|-------|----------------------------------------------------|-------------|
| 01    | 08/26 | Course Introduction                                | -           |
|       | 08/28 | Ch. 1 Starting w/ MATLAB                           | HW 0        |
| 02    | 09/02 | Ch. 2 Creating Arrays                              | Quiz 1      |
|       | 09/04 |                                                    | HW 1        |
| 03    | 09/09 | Ch. 3 Mathematical Operations w/ Arrays            | Quiz 2      |
|       | 09/11 |                                                    | HW 2        |
| 04    | 09/16 | Ch. 4 Using Script Files and Managing Data         | Quiz 3      |
|       | 09/18 |                                                    | HW 3        |
| 05    | 09/23 | Ch. 5 Two-Dimensional Plots                        | Quiz 4      |
|       | 09/25 |                                                    | HW 4        |
| 06    | 09/30 | Ch. 6 Programming in MATLAB                        | Quiz 5      |
|       | 10/02 |                                                    | HW 5        |
| 07    | 10/07 | Ch. 7 User Defined Function and Function Files     | Quiz 6      |
|       | 10/09 |                                                    | HW 6        |
| 08    | 10/14 | Case Study 1                                       | Quiz 7      |
|       | 10/16 |                                                    | HW 7        |
| 09    | 10/21 | Midterm Exam Review                                | -           |
|       | 10/23 | Midterm Exam                                       | -           |
| 10    | 10/28 | Ch. 8 Polynomials, Curve Fitting and Interpolation | -           |
|       | 10/30 |                                                    | HW 9        |
| 11    | 11/04 | Ch. 9 Applications in Numerical Analysis           | Quiz 8      |
|       | 11/06 |                                                    | HW 10       |
| 12    | 11/11 | Veteran's Day, No Class                            | -           |
| 12    | 11/13 | Final Project Kickoff                              | Quiz 9      |
| 13    | 11/18 | Ch. 10 Three-Dimensional Plots                     | -           |
|       | 11/20 |                                                    | HW 12       |
| 14    | 11/25 | Fall Recess, No Class                              | -           |
|       | 11/27 |                                                    | -           |
| 15    | 12/02 | Ch. 11 Symbolic Math                               | Quiz 10     |
|       | 12/04 |                                                    | HW 13       |
| 16    | 12/09 | Project Day                                        | -           |
|       | 12/11 | Final Review                                       | -           |
| Final | 12/18 | Final Exam                                         | -           |
|       |       | 05:00 PM - 06:50 PM, CS 309                        | -           |

**Note:** The syllabus may be subject to change, and any updates or clarifications regarding course materials shall be communicated to the students in a timely manner.