



School of Engineering  
*Information  
Technology Program*

**ITP 168 – Introduction to MATLAB**

**Units: 2**

**Spring 2018 – Monday/Wednesday – 6:00pm-7:20pm**

**Instructor:** Ashley Williams

**Office:** TBD

**Office Hours:** TBD

**Contact Info:** [will920@usc.edu](mailto:will920@usc.edu)

**Teaching Assistant:** TBD

**Office:** TBD

**Office Hours:** TBD

**Contact Info:** TBD

**IT Help:** Provided by Viterbi IT

**Hours of Service:** 8am–5pm M-F

**Walk-in:** DRB 205

**Contact Info:** (213) 740-0517

**Email:** [engrhelp@usc.edu](mailto:engrhelp@usc.edu)

## Course Description

Fundamentals of MATLAB: a high-performance numeric computation and visualization environment. Overview of linear algebra and matrix manipulation using 2-D and 3-D plotting routines; programming in MATLAB; basic numerical analysis

## Learning Objectives

Overview of MATLAB features; problem-solving methodology; arrays; use of files; functions and data structures; programming; plotting; solution of linear algebraic equations; statistics and probability; numerical methods for calculus and differential equations; and basics of symbolic methods; 2D and 3D visualization of scientific data

**Prerequisite(s):** None

**Co-Requisite(s):** None

**Concurrent Enrollment:** None

**Recommended Preparation:** MATH 118x or MATH 125

## Course Notes

All lecture slides and course content including homework and lab assignments will be posted to the course Blackboard page. Midterm and Final Examination are to be done by hand.

## Technological Proficiency and Hardware/Software Required

Students are expected to be able to perform the following tasks before the course begins:

- **Create a ZIP file that contains one or more files**
- **UnZIP a file that contains one or more files**
- **Submit files through Blackboard's submission page**
- **Install MATLAB software**

MATLAB is available for download at: <https://software.usc.edu/>

## Required Readings and Supplementary Materials

Students are required to purchase a zyBooks account for the duration of the semester. Readings will be posted to zyBooks and participation will be contingent upon completion of the readings and online exercises. Subscribe at <http://zybooks.zyante.com> using the specific code given in class.

Optional textbook: "Mastering MATLAB" Duane Hanselman, Bruce Littlefield. Pearson Education. ISBN: 9780136013303

## Description and Assessment of Assignments

What kind of work is to be done and how should it be completed, i.e. how the learning outcome will be assessed. Include any assessment and grading rubrics to be used.

## Grading Breakdown

You will be graded on the following

ITEM	% of Grade	
Lab Assignments	15	
Homework Assignments	25	
Midterm Exam	25	
Final Exam	30	
zyBooks Readings	5	
<b>TOTAL</b>	<b>100</b>	

## Grading Scale

Course final grades will be determined using the following scale

A	93+
A-	90 - <93
B+	87 - <90
B	83 - <87
B-	80 - <83
C+	77 - <80
C	73 - <77
C-	70 - <73
D+	67 - <70
D	63 - <67
D-	60 - <63
F	<60

## Assignment Submission Policy

Homework and lab assignments are to be submitted on Blackboard only. Any other form of submission to instructor, teaching assistant, or grader will not be counted. Only the last submission on Blackboard will be graded. Students will not be able to get points for any previous submissions regardless of whether the previous submissions were correct or on time.

Lab assignments are assigned during the class session and are due at the end of the class session. Students will still be able to submit after the deadline but any submission marked "Late" by Blackboard will automatically receive a score of 0. Lab assignments are graded as PASS/FAIL. There will be no partial credit awarded on any lab. A lab is deemed as "PASSED" if the student has:

1. Completed the task assigned using the specified constructs and functions denoted in the assignment sheet
2. Followed all style guidelines
3. Includes header and comments throughout

Any submission lacking the aforementioned attributes is automatically deemed "FAILED". Reason for failure will always be given to student as justification. There may be other reasons than those listed above for failure of a lab assignment at the instructor's discretion.

There are no makeup labs. The only exception is a medical/family emergency, provided the student notify the instructor and provide official documentation for the emergency.

Homework assignments are assigned at the end of the week and will be due one or two weeks after being assigned. The assignment sheet will have the due date listed. Homework will be accepted after the deadline with the following penalties:

- After due date/time up to 24 hours: -10% of total possible points for assignment
- 24 hours after due date/time up to 48 hours: -20% of total possible points for assignment
- 48 hours after due date/time up to 72 hours: -40% of total possible points for assignment
- 72 hours or more after due date/time: No credit for assignment

Extensions for homework will only be granted for those students who have a medical/family emergency or illness resulting in an inability to complete the assignment on time. Students must provide official documentation.

### **Grading Timeline**

Grading of labs will be done by the end of the week on which the lab was assigned.

Grading of homework will be done within one week of the deadline.

### **Additional Policies**

Students are expected to complete the zyBooks readings and activities by the end of the week on which they were assigned. The end of the week is Saturday at midnight. If a student has not completed all of the readings and activities, they will be given a participation grade based on the percentage they have completed.

Make-up policy for exams: To make up for a missed exam, the student must provide a satisfactory reason (as determined by the instructor) along with proper documentation. Make-up exams are generally only offered in emergency situations.

Before logging off any ITP-owned computer (laptops, desktops in OHE 540, OHE 542, KAP 107, KAP 160, KAP 162, KAP 267) students must ensure that they have saved any work to either a USB drive or a service such as Dropbox. Any work saved to the computer will be erased after restarting the computer. ITP is not responsible for any work lost.

ITP offers Open Lab use for all students enrolled in ITP classes. These open labs are held beginning the second week of classes through the last week of classes.

Hours are listed at: <http://itp.usc.edu/labs/>.

This course will make use of Piazza, an online discussion forum. Students will be invited to join the class discussion, but are not required to. Students may post questions, answer other student's questions, post anonymously, or post privately. Students are not allowed to post homework or lab code to Piazza publicly. Students may post homework or lab code privately on Piazza to instructors only. Any student caught posting homework or lab code on Piazza will be punished through SJACS.

## Course Schedule: A Weekly Breakdown

	Topics/Daily Activities	Readings and Homework	Deliverable/ Due Dates
<b>Week 1</b>	Day 1: Intro Day 2: Variables	No Lab No Lab	Week 1 Reading Due
<b>Week 2</b>	Day 1: NO CLASS: HOLIDAY Day 2: Basics/Algorithms	LP1 HW1 Assigned	Week 2 Reading Due
<b>Week 3</b>	Day 1: Array Basics Day 2: Array Functions	LP2 LP3 HW2 Assigned	Week 3 Reading Due HW1 Due (1/26)
<b>Week 4</b>	Day 1: Conditionals Day 2: Conditionals	LP4 LP5 HW3 Assigned	Week 4 Reading Due HW2 Due (2/2)
<b>Week 5</b>	Day 1: Loops Day 2: Loops	LP6 LP7 HW4 Assigned	Week 5 Reading Due HW3 Due (2/9)
<b>Week 6</b>	Day 1: Cell Arrays Day 2: Structures	LP8 LP9 HW5 Assigned	Week 6 Reading Due HW4 Due (2/16)
<b>Week 7</b>	Day 1: NO CLASS: HOLIDAY Day 2: File I/O	LP10 HW6 Assigned	Week 7 Reading Due HW5 Due (2/23)
<b>Week 8</b>	Day 1: Midterm Day 2: Halfway Review	LP11	
<b>Week 9</b>	Day 1: Functions Day 2: Functions	LP12 LP13 HW7 Assigned	Week 9 Reading Due HW6 Due (3/9)
<b>Week 10</b>	Day 1: Functions Day 2: 2D Plotting	LP14 LP15	Week 10 Reading Due
<b>Week 11</b>	Day 1: Animating Plots Day 2: 3D Plotting	LP16 LP17 HW8 Assigned	Week 11 Reading Due HW7 Due (3/30)
<b>Week 12</b>	Day 1: Data Analysis Day 2: Differentiation	LP18 LP19 HW9 Assigned	Week 12 Reading Due HW8 Due (4/6)
<b>Week 13</b>	Day 1: Integration Day 2: Linear Algebra	LP20 LP21 HW10 Assigned	Week 13 Reading Due HW9 Due (4/13)
<b>Week 14</b>	Day 1: Linear Algebra Day 2: Strings	LP22 LP23	Week 14 Reading Due
<b>Week 15</b>	Day 1: Regular Expressions Day 2: Final Exam Review	LP24 LP25	HW10 Due (4/27)
<b>FINAL</b>			Date: For the date and time of the final for this class, consult the USC <i>Schedule of Classes</i> at <a href="http://www.usc.edu/soc">www.usc.edu/soc</a> .

## Statement on Academic Conduct and Support Systems

### Academic Conduct:

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Part B, Section 11, “Behavior Violating University Standards” <https://policy.usc.edu/scampus-part-b/>. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct>

In this class, all homework submissions will be compared with current, previous, and future students’ submissions. If your work is found to be a copy of another person’s work, or if you submit someone else’s work as your own, the instructors will file a report with SJACS with a recommended penalty of an F in the course.

It is not okay to look through another student’s code. It does not matter if this code is online or from a student you know, it is cheating. Do not share your code with anyone else in this or a future section of the course, as allowing someone else to copy your code carries the same penalty as you copying the code yourself.

### Support Systems:

*Student Counseling Services (SCS) - (213) 740-7711 – 24/7 on call*

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention. <https://engemannshc.usc.edu/counseling/>

*National Suicide Prevention Lifeline - 1-800-273-8255*

Provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week. <http://www.suicidepreventionlifeline.org>

*Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-4900 - 24/7 on call*

Free and confidential therapy services, workshops, and training for situations related to gender-based harm. <https://engemannshc.usc.edu/rsvp/>

*Sexual Assault Resource Center*

For more information about how to get help or help a survivor, rights, reporting options, and additional resources, visit the website: <http://sarc.usc.edu/>

*Office of Equity and Diversity (OED)/Title IX Compliance – (213) 740-5086*

Works with faculty, staff, visitors, applicants, and students around issues of protected class. <https://equity.usc.edu/>

*Bias Assessment Response and Support*

Incidents of bias, hate crimes and microaggressions need to be reported allowing for appropriate investigation and response. <https://studentaffairs.usc.edu/bias-assessment-response-support/>

*The Office of Disability Services and Programs*

Provides certification for students with disabilities and helps arrange relevant accommodations. <http://dsp.usc.edu>

*Student Support and Advocacy – (213) 821-4710*

Assists students and families in resolving complex issues adversely affecting their success as a student EX: personal, financial, and academic <https://studentaffairs.usc.edu/ssa/>

*Diversity at USC*

Information on events, programs and training, the Diversity Task Force (including representatives for each school), chronology, participation, and various resources for students. <https://diversity.usc.edu/>

*USC Emergency Information*

Provides safety and other updates, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible, <http://emergency.usc.edu>

*USC Department of Public Safety – 213-740-4321 (UPC) and 323-442-1000 (HSC) for 24-hour emergency assistance or to report a crime.*

Provides overall safety to USC community. <http://dps.usc.edu>