USC Viterbi
School of Engineering
Information Technology Program

ITP 168 – Introduction to MATLAB

Units: 2
Spring 2018 – Tuesday/Thursday – 5:00pm-6:20pm

Instructor: Raymond Kim
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Teaching Assistant: TBD
Office: TBD
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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

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

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	
TOTAL	100	

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

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