CS 1411—Introduction to Programming in Matlab
Section 1
Fall Semester 2018

Course Information

Instructor  Steve Holtz
Email  sholtz@d.umn.edu (Email Policy)
Phone  218–726–7664
Office  Heller Hall 319
Office Hours  Monday 3:15 to 5:00 PM
              Wednesday 3:15 to 4:30 PM
Course Web Site  http://www.d.umn.edu/~sholtz/cs1411-1/f18/index.php
Teaching Assistants  See the course home page.
Software  This course provides access to UMD’s Full Access Student Computer Labs.
          MATLAB version R2018a or later is required for all coursework.
          Note that all required software is already installed and configured for course work on the ITSS Full Access Lab machines. This software is available on or off-campus via the Apps4U platform. Off-campus access is via the Apps4U via BYOD (Bring Your Own Device) platform.
Lecture  Section 1—3:30 to 4:45 PM on Tuesday and Thursday in MonH 203
Lab  Section 3—11:00 AM to 12:50 PM on Tuesday in MWAH 177

Course Prerequisite(s)

One or two years of high school mathematics.

Course Description

An introduction to programming in the MATLAB language. Topics covered will include the creation of algorithms, function definition, basic programming statements, input and output, mathematical operations, matrix manipulation, and representing data. As time allows, additional coverage of plotting methods, data structures using cellular arrays and other advanced topics.

Course Objectives

This course introduces students to programming in MATLAB. MATLAB is a widely used programming language and development environment for developing mathematical functions, simulations and other processes. As a result of this course, students will learn a high-level programming language (MATLAB) that enables them to construct software objects (programs) to solve a variety of problems. The process of programming involves: understanding a problem; analyzing that problem; and developing a formal solution that solves that problem. Students will develop programs outside of formal class time helping them to develop the skills necessary to create programs independently. Solving programming problems requires students to learn to think creatively about solutions to problems that make use of information.

UMD’s Student Learning Outcomes

This course supports UMD’s Student Learning Outcome 1: Demonstration of competence in a major field.

Policies

Exams  • Your valid U Card (UMD ID card) may be required at the start of every exam. If your ID is required you will not be allowed to take (or makeup) the exam without presenting it first.
Exams are closed book, closed calculator, and closed notes. No makeup examination will be given without written confirmation of a University-sanctioned excused absence and prior consent of the instructor. See the course excused absence policy below. Computer Science department policy requires at least 70% of the points in this course to come from examinations (including quizzes).

Final Exam
- The two hour final exam is cumulative.
- It is departmental policy not to return final exams.
- Under no circumstances will a final exam be given early.
- The final exam will be administered at the time and place according to the final exam schedule and not at any earlier time. This course will adhere to UMD's Final Exam Policy.

Lectures
Broadly disseminating class notes and/or course materials beyond the classroom community or accepting compensation for taking and distributing classroom notes and/or any course materials is plagiarism. You cannot use the lecture notes or other material from this course in any way you choose. See UMD's Appropriate Use of Class Notes and Course Materials Policy.

Grading

<table>
<thead>
<tr>
<th>What</th>
<th>Weight</th>
<th>Date</th>
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<tbody>
<tr>
<td>Midterm 1</td>
<td>22.5</td>
<td>Tuesday, October 2nd, 3:30 to 4:45 PM</td>
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<tr>
<td>Midterm 2</td>
<td>22.5</td>
<td>Tuesday, November 6th, 3:30 to 4:45 PM</td>
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<tr>
<td>Final Exam</td>
<td>25</td>
<td>Thursday, December 13th, 2:00 to 3:55 PM</td>
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<tr>
<td>Labs (12)</td>
<td>12</td>
<td>See Course Schedule</td>
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<tr>
<td>Projects (5)</td>
<td>18</td>
<td>See Course Schedule</td>
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<tr>
<td><strong>Total Weight</strong></td>
<td>100</td>
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To calculate your current Total Weight, use the following worksheet:

<table>
<thead>
<tr>
<th>Actual Scores (AS)</th>
<th>Running Total of Actual Scores (RAS)</th>
<th>Maximum Points per Assignment (MP)</th>
<th>Running Total of Maximum Points (RMP)</th>
<th>Section Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab 1</td>
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<td></td>
<td></td>
<td>LAB = RAS/RMP</td>
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<tr>
<td>Lab 2</td>
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<td>Lab 3</td>
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<td>Lab 4</td>
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<td>Lab 7</td>
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<td>Lab 9</td>
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<td>Lab 13</td>
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<tr>
<td>Project 1</td>
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<td>P = RAS/RMP</td>
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<td>Project 2</td>
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<td>Midterm 1</td>
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<td>M1 = AS/MP</td>
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<tr>
<td>Midterm 2</td>
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<tr>
<td>Final</td>
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<td>F = AS/MP</td>
</tr>
</tbody>
</table>

Calculate the Section Percentage for each row by dividing the appropriate column totals indicated by the equation in this column. For example, assuming that in the lab row we have the RAS column showing a total sum of 78 and the RMP column showing a total sum of 90, then to calculate the LAB Section Percentage, we have LAB = RAS/RMP = 78/90 = 0.867.

Plug the results in the last column into the expression below and solve for TotalWeight.
TotalWeight = LAB * 12 + P * 18 + M1 * 22.5 + M2 * 22.5 + F * 25

You can also use the Grade Estimator. This tool is available from the course Web site.

Final grades are based on your TotalWeight with:

- A- cutoff at 90
- B- cutoff at 80
- C- cutoff at 70
- D cutoff at 60
- F is below 60

These cutoffs may be lowered, but they will not be raised.

Scores will be posted using the eGradebook system: [http://www.d.umn.edu/egradebook/](http://www.d.umn.edu/egradebook/).

<table>
<thead>
<tr>
<th>Syllabus or Schedule Revision</th>
<th>The instructor reserves the right to make changes to the course syllabus or schedule at any time. Revisions will be posted on the course Web site and announced during lecture.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Material</td>
<td>You are responsible for reading assigned textbook material and for obtaining any material covered in lecture and lab, including: lecture notes. assignments and handouts. turning in projects and labs.</td>
</tr>
<tr>
<td>Attendance</td>
<td>If you are unable to attend a class meeting (lecture, lab, or discussion), it is your responsibility to obtain any notes, assignments, and extra copies of handouts from a fellow student.</td>
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<tr>
<td></td>
<td>If you must miss a class meeting where an assignment must be turned in, you should either: Turn in the assignment early Obtain and submit written confirmation of a University-sactioned excused absence and prearrange a due date extension with the instructor (see the course excused absence policy below)</td>
</tr>
<tr>
<td>Excused Absence</td>
<td>Students are expected to attend all scheduled class meetings. It is the responsibility of students to plan their schedules to avoid excessive conflict with course requirements. However, there are legitimate and verifiable circumstances that lead to excused student absence from the classroom. University-sactioned reasons for excusing an absence include: subpoenas, jury duty, military duty, religious observances, illness, bereavement for immediate family, and NCAA varsity intercollegiate athletics. For complete information, please see UMD’s Excused Absence Policy. Due date extensions for course assignments and make-up examinations will only be granted for a University-sactioned excused absence and with proof supplied in writing from a proper authority. The written proof can be supplied via email.</td>
</tr>
<tr>
<td>Student Conduct Code</td>
<td>Appropriate classroom conduct promotes an environment of academic achievement and integrity. Disruptive classroom behavior that substantially or repeatedly interrupts either the instructor’s ability to teach, or student learning, is prohibited. Students are expected to adhere to Board of Regents policy: Student Conduct Code.</td>
</tr>
<tr>
<td>Teaching &amp; Learning</td>
<td>UMD is committed to providing a positive, safe, and inclusive place for all who study and work here. Instructors and students have a mutual responsibility to insure that the environment in all of these settings supports teaching and learning, is respectful of the rights and freedoms of all members, and promotes a civil and open exchange of ideas. This course will adhere to UMD’s Teaching &amp; Learning Policy.</td>
</tr>
<tr>
<td>Academic Integrity</td>
<td>All assignments in this course will involve individual work. Submissions that are overly similar could result in the involved individuals to called into the instructor’s office and possible plagiarism charges imposed. The repercussions resulting from these charges will vary on a per-case basis and may be turned over to the University as a charge of academic dishonesty. Academic dishonesty tarnishes UMD’s reputation and discredits the accomplishments of students. Academic dishonesty is regarded as a serious offense by all members of the academic community. This course will adhere to UMD’s Student Academic integrity Policy.</td>
</tr>
<tr>
<td>Assignments</td>
<td>Attend all lecture and lab sessions. Do your own work on all assignments. Do not ask or answer code related questions of your fellow students. When you and a fellow student work in this way it is likely that you’ll produce overly similar code and you</td>
</tr>
</tbody>
</table>
increase the likelihood that you’ll get called in on a possible plagiarism violation.

- Start all programming-related assignments early so you have ample time to resolve any difficulties.
- NEVER place any of your work on a Web server. Even in a “secret” directory.
- You should expect to put 12 hours per week (on average) into this course [3 hours of your time for each credit hour]. This includes attending three hours of lecture and two hours of lab each week. So, you should expect to spend 7 hours per week working on course-related material outside of the formally scheduled course time.

Help
If you need help with a project, start with:
1. course materials, such as text, notes, and previous assignments.
2. the TA on duty in HH 314 or MWAH 177.
3. your own TA during their office hours.
4. the instructor during office hours.

When emailing for assistance with a problem, you must follow the course email policy. Be sure to include ALL of your source code in your email (attachments work well), if you have a programming related question.

Submissions
Hard copy (paper) submissions of homework and project assignments are required to be turned in.

- Hard copy submission can be made (in order of preference):
  1. to your teaching assistant at the beginning of your lab session on the due date.
  2. in your lab section’s drop box in MWAH 177 before due date.
  3. to your instructor before or after lecture before due date.

Late Work
Late work will be handled in the following manner:
Assignments
- turned in at beginning of class session on the due date—full credit.
- turned in any later time on the due date or the next day—25% deduction.
- after one day late—zero points.

Word of wisdom: Start programming your solution to an assignment early.

The instructor’s consent is mandatory for extensions to assignment due dates. Do NOT approach your teaching assistant to obtain a due date extension.

Assignment Points
In order to earn points, each assignment must exceed a threshold of 40% of available points.

Duo Two-Factor Authentication
Starting in November 2018, the University will begin migrating accounts to Duo. Duo is a two-factor authentication system that uses your username/password (something you know) and a hardware device (something you have) to authenticate a user attempting to access University computer systems.

If, and when, you start to use Duo to sign in to University applications, YOU ARE STRONGLY ENCOURAGED to set up back-up devices so that you are prepared in the event that your primary Duo device is unavailable (you forgot it, it was stolen, it’s broken, the battery is dead, etc.). Learn about back up devices at z.umn.edu/backupdevices.

As a Duo user, it is your responsibility to come prepared to sign in to applications necessary for class activities. If you are unable to sign in, you may lose points for the class activity. Failure to bring your Duo device or a back-up is not an excused absence or a valid reason for due date extensions or other make-up work to be assigned.

Learn more about Duo at z.umn.edu/duosecurity.

Students with Disabilities
It is the policy and practice of the University of Minnesota Duluth to create inclusive learning environments for all students, including students with disabilities. If there are aspects of this course that result in barriers to your inclusion or your ability to meet course requirements—such as time limited exams, inaccessible Web content, or the use of non-captioned videos—please notify the instructor as soon as possible. You are also encouraged to contact the Office of Disability Resources (DR) to discuss and arrange reasonable accommodations. Please call 218–726–6130 or visit the DR Website at https://www.d.umn.edu/disability-resources for more information.