

# MAS3114: Computational Linear Algebra

Summer 2024

Sections 11591 (UF Online) & 11592 (Residential Online)

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## Contact Information:

### Course Coordinator / Instructor

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The course homepage is in [e-Learning Canvas](#). The information for office hours can be found on Canvas.

**IMPORTANT:** While taking this class online, you **MUST** take the exams with Honorlock on the dates shown on the course calendar and you **MUST** have steady internet access. Traveling or lack of internet access is **NOT** an acceptable excuse for makeup.

## MAS 3114 Online: Calendar, Summer 2024

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
	May 13 Introduction	14 Lesson 1 <i>Drop/Add deadline</i>	15 Lesson 2	16 Lesson 3	17 <b>HW 1-2</b>
19	20 MATLAB synchronous zoom session @ 12:30pm	21 Lesson 4	22 Lesson 5	23 Lesson 6	24 <b>HW 3-5 MATLAB 0</b>
26	27 <b>HOLIDAY NO CLASS</b>	28 MATLAB synchronous zoom session @ 12:30pm	29 Lesson 7	30 Lesson 8	31 <b>HW 6-7 MATLAB 1</b>
June 2	3 Lesson 9	4 Lesson 10	5 Review	6 Review	7 <b>HW 8-9 Practice Exam 1</b>
9	10 <b>EXAM 1 (L1-9)</b>	11 Lesson 11	12 Lesson 12	13 MATLAB synchronous zoom session @ 12:30pm	14 <b>HW 10-12</b>
16 <b>MATLAB 2</b>	17 Lesson 13	18 Lesson 14	19 <b>HOLIDAY NO CLASS</b>	20 Lesson 15	21 <b>HW 12-15</b>
23	<b>June 24-28 SUMMER BREAK</b>				
30	July 1 Lesson 16	2 Lesson 17	3 Lesson 18	4 <b>HOLIDAY NO CLASS</b>	5 <b>HW 16-18</b>
7	8 Review <b>Practice Exam 2</b>	9 Review	10 <b>EXAM 2 (L10-18)</b>	11 MATLAB synchronous zoom session @ 12:30pm	12
14 <b>MATLAB 3</b>	15 Lesson 19	16 Lesson 20	17 Lesson 21	18 Lesson 22	19 <b>HW 19-21</b>
21	22 Lesson 23	23 Lesson 24	24 Lesson 25	25 MATLAB synchronous zoom session @ 12:30pm	26 <b>HW 22-24</b>
28 <b>MATLAB 4</b>	29 Lesson 26	30 Lesson 27	31 Review	Aug 1 Review	2 <b>HW 25-27 Practice Exam 3 Withdraw deadline</b>
4	5 <b>EXAM 3 (L19-27)</b>	6 Review	7 <b>MAKEUP EXAM (optional; L1-27)</b>	8	9

- **HW assignments (including LQs and MyLabs) are due at 11:59PM EDT on the date indicated in the calendar.**
- **Each exam is open from 12PM(noon)—11:59PM EDT in Canvas on the exam date, and it's proctored by Honorlock.**

## 1. INTRODUCTION

**1a COURSE CONTENT:** MAS3114 is a 3-credit course on linear algebra whose topics are of computational nature. The topics include linear equations, linear transformations, matrices, determinants, vector spaces, eigenvalues, and inner products. This course emphasizes computational aspects of Linear Algebra. MAS3114 is designed to serve science, computer science, quantitative science, engineering majors, and mathematics minors. Mathematics majors are required to take MAS4105, Linear Algebra 1.

**Learning Objectives/Outcomes:** Upon successful completion of the course, students will:

- Solve linear systems of equations explicitly and numerically.
- Demonstrate understanding of linear transformations and their importance to applied science.
- Perform basic matrix calculations and compute determinants of matrices.
- Explain basic linear algebra concepts including vector space, subspace, span, linear independence, basis, and dimension.
- Diagonalize a matrix when applicable.
- Demonstrate understanding of inner products and orthogonality.
- Determine least-squares solution of linear system.

**1b PREREQUISITES:** MAC2312 with a minimum grade of C and experience with a scientific programming language.

**1c REREQUIRED MATERIALS:**

**Textbook:** **Linear Algebra and Its Applications**, 6th edition, by David C. Lay

An access code to **MyLab and Mastering** is required for the course. It can be obtained through [UF All Access program](#) by authorizing charges to your student financial account and is provided at a reduced price. This option will become available starting one week prior to the beginning of the semester and ends three weeks after the first day of class. If a student does not wish to authorize charges to his student financial account, he may purchase an access code at the [UF bookstore](#) instead, which will be more expensive than opting-in.

See the **Orientation Module** on Canvas for details on obtaining an access code through UF All Access and registration with MyLab and Mastering.

**1d E-LEARNING CANVAS:** All course-related information is posted on Canvas. Students are required to complete the **Orientation Module** and **Course Orientation Quiz** to unlock the remaining Canvas pages and start Unit 1.

**Turn on Notifications** in your Canvas account so that you can receive timely alerts in your UF email. See the [instructions](#) for Canvas Notification settings.

**Check Canvas Announcements.** Due to the volume of email instructors receive, we cannot reply to each request for the information that is already posted online.

**1e LECTURES:** The lecture videos provide the main presentation of course material. To keep up with the course, we recommend watching the videos daily by following the schedule posted on the course calendar. The course material is divided into three units:

- Unit 1: Lessons 1 – 9      Linear Systems & Matrices
- Unit 2: Lessons 10 – 18    Determinants & Vector Spaces
- Unit 3: Lessons 19 – 27    Eigenvectors & Orthogonal Sets

**Lecture notes outlines:** Students can download and print them out from each unit page in Canvas. Or, you have an option to purchase the printed outlines at [Target Copy Center](#). It is important that students have a hard copy of the lecture notes to follow the lectures more easily when watching the videos.

## 2. ASSESSMENTS

**2a LEARNING QUIZZES:** There are 27 sets of learning quizzes (LQs) given on the lesson material, and there are three attempts for each LQ. Students are expected to work individually on these assignments. The two lowest LQ grades will be dropped at the end of the semester.

**2b MYLAB HOMEWORK:** Each online MyLab assignment is a set of problems assigned on MyLab and numbered according to the lesson covered. MyLab assignments provide necessary practice for mastering the material delivered in lecture. Students have five attempts for most questions (except for multiple-choice or true-false questions) in MyLab assignments before the due date. There will be a total of 27 sets of assignments assigned and the two lowest scores will be dropped at the end of the semester.

**NOTE:** The due date for HW assignment (including LQ and MyLab) for each lesson is shown in the course calendar.

**2c MATLAB ASSIGNMENTS:** Four MATLAB assignments will be assigned during the semester, and each assignment must be completed using MATLAB software and submitted on Gradescope by its due date. For more information on the assignments, visit the **MATLAB** page on Canvas and read the instructions for each assignment.

There are five synchronous MATLAB Zoom sessions scheduled this semester. The Zoom sessions will be recorded and posted in Canvas for the students who are not able to attend.

**2d EXAMS:** There will be three unit exams offered during the semester. The **cumulative** make-up exam (optional) can be taken on the last day of classes. If a student is satisfied with his grade, then he is not required to take the optional make-up exam. If a student takes all three unit exams and optional make-up exam, then the lowest exam grade will be dropped at the end of the semester.

**NOTE:** Calculators may be useful for some homework problems but are not required for the course. Calculators are not allowed on the exams.

**Important Exam Policies:** MAS3114 requires all students to take online exams through **Honorlock** on the listed dates. Each exam opens for a 12-hour period (from 12:00PM noon to 11:59PM) on the exam date, and we recommend starting your test no later than 10:30PM since all exams are closed at midnight. Students with conflicts, including scheduled working hours or traveling, must make advance arrangements to take the exam at the scheduled time.

UF will rely on a Test-In-Place plan for online proctored exams. Each student is expected to use their place of residence whether on or off campus for scheduled online exams. To successfully complete an online proctored exam, students need a quiet space with adequate lighting, no distractions, and a strong and steady internet connection.

**The following applies to all exams:**

- (1) Students are responsible for material covered in lectures and assignments.
- (2) Prior to test start, you will need the following:
  - working web camera and microphone
  - stable internet connection
  - Google Chrome browser and Honorlock Chrome extension
- (3) Bring only the following while taking an online exam with Honorlock: Government issued photo ID (or Student Gator One ID) with a legible signature and blank scratch paper (up to 10 sheets).
- (4) Students are required to perform a scan on their desk and keyboard and show the front and back of each scratch paper before starting the first math question on the exam. A room scan is not required.
- (5) The following items/actions are not permitted:
  - No writing visible on desk or on walls. Make sure music/televisions are not playing in the background.
  - Only blank loose-leaf scratch paper (no notepad) is allowed.
  - No websites other than Canvas and the Honorlock proctoring extension should be used or open while taking a proctored exam.
  - Close all other programs and/or windows on the testing computer prior to logging into the proctored test environment.
  - Communication or receiving assistance from others is not permitted during a proctored assessment.
  - Using a phone or any other electronic device, other than your test-taking device, is not permitted. Headphones or smart watches are not permitted.
  - Remain visible in the web camera during the entire duration of the exam.
  - Leaving the room during the testing period is not permitted.

- Dual monitors are not permitted.

**NOTE:** If a student is suspected of academic misconduct during an exam, the incident will be reported to the DSO. In case the student is found to be responsible for the misconduct, the grade for the exam in question cannot be replaced with the optional makeup exam grade.

**Exam Grades:** All MAS3114 exam grades will be released within 3 days after each scheduled exam. Students can view exam questions and answers during office hours within one week of releasing grades.

**2e MAKE-UP POLICIES:** We do not consider traveling or lack of internet access as a valid excuse for makeup. Students must provide documentation for makeup and all makeup work must be approved by Dr. Huang.

- **Make-up Exams:** If a student is missing an exam due to a **legitimate reason** (being sick, being away on the UF business, family emergency, or religious holidays), he may provide documentations and request to take an early makeup. **To be eligible for an early makeup**, he must send a request to Dr. Huang prior to the exam, and an early makeup will be scheduled in the following week if the request is approved. A late request will not be accepted, but students may take the optional makeup exam at the end of the semester.

**UF Exam Policies:** No student is required to take more than three exams in one day. Do not ask for a make-up exam when you have three or less exams on the same day.

- **LQs, MyLab and MATLAB Assignments:** There is no makeup. If a student has documented illness or other extenuating circumstances, he must contact Dr. Huang prior to the deadline and request an extension.

**Late submissions: Due Date** is not the **Do Date**! DO NOT wait to start the assignments on the day that they are due. Note that LQs, MyLab and MATLAB assignments can be submitted late with a 25-point penalty for each day beyond the due date.

**Warning:** Students need to consider carefully whether it is worth submitting an assignment late. For example, if a student has already scored 90% before the due date, his grade would decrease if he continues to work on the assignment and submits it late, as he can only receive a maximum grade of 75%.

**Assignments Review:** Students can always review their assignments after submission. After the deadline, students should only click “review” when reviewing the assignments and the grade is subject to the late penalty when clicking “submit”.

- **Extra Credit Assignments**– Course Orientation Quiz, Practice Exams, and Discussion Board Participations: no makeup or extension on any extra credit assignments

If a student has issues with technical difficulties for Canvas, contact the **UF Help Desk** or call 352-392-HELP(4357). Any requests for makeup due to technical issues **MUST** be accompanied by the ticket number received from the Help Desk when the problem is reported to them. The ticket number will document the time and date of the problem. Students **MUST** e-mail Dr. Huang before the due date to discuss makeup.

### 3. GRADING

**3a COURSE GRADE:** The course grade is assigned based on the students' performance on the following weighted categories:

27 Lecture Quizzes (drop the two lowest grades)	7.00 %
27 MyLab assignments (drop the two lowest grades)	28.00 %
4 MATLAB assignments	15.00 %
3 Unit Exams	50.00 %
	<b>100.00 %</b>

The final letter grade will be given using the following grading scale:

A	90.00 - 100 %	C	68.00 - 72.49 %
A-	86.50 - 89.99 %	C-*	64.50 - 67.99 %
B+	83.00 - 86.49 %	D+	61.00 - 64.49 %
B	79.50 - 82.99 %	D	57.50 - 60.99 %
B-	76.00 - 79.49 %	D-	54.00 - 57.49 %
C+	72.50 - 75.99 %	E	0 - 53.99 %

There is a built-in curve in the grade scheme and there will be no additional curve or rounding considered at the end of the semester. Extra assignments for individual students to improve their grades are **NOT** possible.

**Extra Credit:** The calculation is not correct in Canvas when there are still missing grades during the semester, and it will be accurate at the end of the semester when all grades are posted.

**3b ONE WEEK POLICY:** All grades are posted in the Canvas gradebook. Students are responsible for verifying that those grades are accurate. Students have one week after a score has been posted to contact the instructor if there is a grading or recording issue. Any grade concerns must be communicated through Canvas Mails for security and privacy reasons. We will not consider any grading disputes nor make any grades adjustment at the end of the semester.

**3c INCOMPLETE:** A student who has completed a major portion of the course with a passing grade but is unable to complete the last exam or other course requirements due to illness or emergency may be granted an incomplete,

indicated by a grade of “I”. This allows the student to complete the course within the first six weeks of the following semester. The student must contact the course coordinator to sign the [incomplete grade contract](#), and must provide documentation of the extenuating circumstances preventing him or her from taking the final exam. The grade of “I” is never used to avoid an undesirable grade and does not allow a student to redo work already graded or to retake the course. See the [official incomplete grade policy](#) for details.

#### 4. MISCELLANEOUS

**4a ACADEMIC HONESTY:** University of Florida students are bound by the Honor Pledge. On all work submitted for credit by a student, the following pledge is required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Student Honor Code and Conduct Code (Regulation 4.040) specifies a number of behaviors that are in violation of this code, as well as the process for reported allegations and sanctions that may be implemented. All potential violations of the code will be reported to Student Conduct and Conflict Resolution. If a student is found responsible for an Honor Code violation in this course, the instructor will enter a Grade Adjustment sanction which may be up to or including failure of the course.

**4b STUDENTS WITH LEARNING DISABILITIES:** Students requesting class and exam accommodations must register with the [Disability Resource Center \(DRC\)](#) by providing appropriate documentation. A letter of accommodation must be sent to Dr. Huang at least three business days before a scheduled exam to receive exam accommodation. Students with disabilities should follow the DRC procedure as early as possible in the semester since the accommodations are not retroactive.

**4c UF CAMUPUS RESOURCES:**

- E-learning technical support: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).
- [U Matter, We Care](#) provides students in distress with support and coordination of the wide variety of appropriate resources. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. Remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.
- [UF Counseling Center](#) provides information and helps students who are experiencing test-related stress and anxiety or have any other concerns.

**4d ONLINE COURSE EVALUATION:** Students are encouraged to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via [GatorEvals](#). Students will be notified when the evaluation period opens. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.