

# MAS 3114: Computational Linear Algebra

## FALL 2022

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### Contact Information:

#### Course Coordinator/Instructor

**Dr. Shu-Jen Huang**

Lecture: MWF Period 5 in LIT101

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#### Teaching Assistant (TA)

**Ovidiu Nechita**

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

## MAS 3114: Calendar, Fall 2022

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
			Aug 24 Module 1	25	26 Module 2
28	29 Module 3	30 Drop/Add Deadline	31 Module 4	Sept 1 HW 1-2	2 MATLAB Q&A
4	5 <b>Labor Day No Class</b>	6	7 Module 5	8 HW 3-4	9 Module 7
11 MATLAB 1	12 Module 8	13	14 Module 9	15 HW 5, 7, 8	16 Review
18 HW 9	19 <b>EXAM 1</b>	20	21 Module 11	22	23 Module 12
25	26 Module 13	27	28 Module 14	29 HW 11-12	30 Q&A
Oct 2 MATLAB 2	3 Module 15	4	5 Module 16	6 HW 13-14	7 <b>UF Homecoming No Class</b>
9	10 Module 17	11	12 Review	13 HW 15-17	14 <b>EXAM 2</b>
16	17 Module 18	18	19 Module 19	20	21 Module 20
23 MATLAB 3	24 Module 21	25	26 Q&A	27 HW 18-20	28 Module 22
30	31 Module 23	Nov 1	2 Module 24	3 HW 21-23	4 Review
6 HW 24	7 <b>EXAM 3</b>	8	9 Module 27	10	11 <b>Veterans Day No Class</b>
13	14 Module 28	15	16 Module 29	17 HW 27-28	18 Q&A
20 MATLAB 4	21 <b>No Class Withdraw Deadline</b>	22	23 <b>Thanksgiving No Class</b>	24 <b>Thanksgiving</b>	25 <b>Thanksgiving No Class</b>
27	28 Module 30	29	30 Module 31	Dec 1 HW 29-30	2 Review
4 HW 31	5 <b>EXAM 4</b>	6	7 <b>MAKEUP EXAMS</b>	8 <b>Reading Day</b>	9 <b>Reading Day</b>

- All assignments are due at 11:59PM EDT/EST on the date indicated in the calendar.
- Each exam is given in class during the class period.

## 1. INTRODUCTION

**1a COURSE CONTENT:** MAS 3114 is a 3-credit course on linear algebra whose topics are of computational nature. The topics include linear equations, matrices, determinants, vector spaces, linear transformations, inner products, and eigenvalues. This course emphasizes computational aspects of Linear Algebra. MAS 3114 is designed to serve science, computer science, quantitative science, engineering majors, and mathematics minors. Mathematics majors are required to take MAS 4105, Linear Algebra 1.

**1b PREREQUISITES:** MAC 2312 with a minimum grade of C and experience with a scientific programming language.

**1c REQUIRED MATERIALS :**

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

Access code to **MyLab and Mastering** is required in the course. Access code 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 you do not wish to authorize charges to your student financial account, you may purchase access code at the [UF bookstore](#) instead, which will be more expensive than opting-in.

Please see the **Course Information** page in Canvas for complete information on obtaining access code through UF All Access and registration with MyLab and Mastering.

**1d E-LEARNING CANVAS:** All course-related information is posted on Canvas.

**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 course homepage regularly for 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** meet MWF5 in LIT 101. **Attendance is required.** The course material is divided into five units:

- Unit 1: M01 – M06    Linear Systems
- Unit 2: M07 – M14    Matrices & Determinants
- Unit 3: M15 – M21    Vector Spaces & Bases
- Unit 4: M22 – M26    Eigenvalues & Eigenvectors
- Unit 5: M27 – M32    Orthogonal Sets & Linear Models

You are responsible for learning lecture material missed due to an absence. Students can print out the lecture outlines from Canvas through the **Lectures** tab. You may also purchase a course pack from Target Copy Center.

## 2. ASSESSMENTS

**2a LECTURE PARTICIPATION QUIZZES:** There are 27 sets of lecture quizzes (LQ) given on the material of the lectures. Students are expected to work individually on these assignments. The two lowest LQ grades will be dropped at the end of the semester.

NOTE: The due date for each LQ is the same as for the corresponding HW assignment shown in the course calendar.

**2b MYLAB HOMEWORK:** Each online Homework assignment (HW) is a set of problems assigned on MyLab and numbered according to the Module covered. A HW assignment will give you necessary practice for mastering the material delivered in lecture. There will be a total of 27 homework assignments offered and the two lowest scores will be dropped at the end of the semester.

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

**2d EXAMS:** There will be four exams offered during the semester. All exam will be given in the lecture hall during the regular class time on the dates indicated in the calendar. An exam duration is 50 minutes.

An optional make-up exam can be taken on one of the four exams. It may be necessary to miss an exam during the semester or you may not be satisfied with your grade earned on exams. For these reasons, an optional make-up exam will be offered on the date indicated in the course calendar no documentation is needed to take it. You can take/retake only **one** of the four exams. The grade on the makeup will replace your grade on the corresponding exam **only if** you do better on the make-up exam than on the regular Exam. A makeup is in the same format and covers the same portion of the material as the corresponding exam.

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

**2e MAKE-UP POLICIES:** All make-up work must be approved by the course instructor and you must provide documentation of your absence.

- **Make-up Exams:** If you are missing an exam due to a **legitimate reason** (being sick, being away on the UF business, family emergency, or religious holidays), you can either take the regular makeup at the end of the semester or you can request to take an early makeup. **To be eligible for an early makeup**, you must send a request to the instructor prior to the exam, and an early makeup will be scheduled in the following week if your request is approved. A late request will not be accepted.

- **Lecture Quizzes, MyLab Assignments and MATLAB Assignments:** There are no make-ups, unless, you have documented illness or other extenuating circumstances. You must contact the instructor prior to the deadline and request for an extension.

**Late submissions: Due Date** is not the **Do Date!** DO NOT wait to start your assignments the day that they are due. If there are any last minute difficulties with your computer or access, you will be out of luck. However, lecture quizzes, MyLab homework assignments and MATLAB assignments can be submitted late with a 25% penalty for each day beyond the due date.

- **Extra Credit Assignments:** no make-ups on any extra credit assignments

### 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)	6.25 %
27 MyLab assignments (drop the two lowest grades)	28.75 %
4 MATLAB assignments	15.00 %
4 Exams	50.00 %
	<b>100.00 %</b>

Your final grade will be rounded to the nearest hundredth and a letter grade will be given using the following grading scale:

A	90.00 - 100 %	C	67.00 - 73.99 %
A-	87.00 - 89.99 %	C-*	64.00 - 66.99 %
B+	84.00 - 86.99 %	D+	60.00 - 63.99 %
B	80.00 - 83.99 %	D	57.00 - 59.99 %
B-	77.00 - 79.99 %	D-	54.00 - 56.99 %
C+	74.00 - 76.99 %	E	0 - 53.99 %

**There will be no additional curve in this course, and extra assignments for individual students to improve a grade are NOT possible.**

**\*NOTE:** A grade of C- DOES NOT give Gordon Rule or General Education credit!

**3b ONE WEEK POLICY:** All grades are posted in the Canvas gradebook You are responsible for verifying that those grades are accurate. **You have one week after a score has been posted to contact your instructor if there is a grading or recording issue.** Any grade concerns must communicate through Canvas Mails due to security/privacy issues. 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:** All students are required to abide by the Academic Honesty Guidelines which have been accepted by the University. The academic community of students and faculty at the University of Florida strives to develop, sustain and protect an environment of honesty, trust, and respect. Students are expected to pursue knowledge with integrity. Exhibiting honesty in academic pursuits and reporting violations of the Academic Honesty Guidelines will encourage others to act with integrity. Violations of the Academic Honesty Guidelines shall result in judicial action and a student being subject to the sanctions in paragraph XIV of the Student Code of Conduct. The conduct set forth hereinafter constitutes a violation of the Academic Honesty Guidelines (University of Florida Rule 6C1-4.017).

[The UF Honor Code](#) specifies a number of behaviors that are in violation of this code and the possible sanctions. We are bound by university policy to report any instance of suspected cheating to the proper authorities. In addition, we remind you that lectures given in this class are the property of the University/faculty member and may not be used for any commercial purpose. Students found to be in violation may be subject to discipline under the Student Conduct Code.

**4b STUDENTS WITH LEARNING DISABILITIES:** Students requesting class and exam accommodations must register with the [Disability Resource Center\(DRC\)](#) by providing appropriate documentation. An accommodation letter must be sent to Dr. Huang once approved by DRC, and students with disabilities should follow the DRC procedure as early as possible in the semester since the accommodations are not retroactive.

**DRC ATR policy:** Students who wish to take an exam at DRC must submit your [accommodated test request \(ATR\)](#) at least four business days in advance of the exam. This does not include the day of the exam, weekends, or holidays.

**4c COVID POLICY:** In response to COVID-19, the following recommendations are in place to maintain your learning environment, to enhance the safety of our in-classroom interactions, and to further the health and safety of ourselves, our neighbors, and our loved ones.

- If you are not vaccinated, get vaccinated. Vaccines are readily available and have been demonstrated to be safe and effective against the COVID-19 virus. Visit [one.ufl.edu](https://one.ufl.edu) for screening/testing and vaccination opportunities.
- If you are sick, stay home. Please call your primary care provider if you are ill and need immediate care or the UF Student Health Care Center at 352-392-1161 to be evaluated.
- Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work.

#### **4d 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 having any other concerns.

**4e DIVERSITY, EQUITY, AND INCLUSION:** The Mathematics Department is committed to diversity and inclusion of all students. We acknowledge, respect, and value the diverse nature, background and perspective of students and believe that it furthers academic achievements. It is our intent to present materials and activities that are respectful of diversity: race, color, creed, gender, gender identity, sexual orientation, age, religious status, national origin, ethnicity, disability, socioeconomic status, and any other distinguishing qualities.

**4f ONLINE COURSE EVALUATION:** Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via [GatorEvals](#). Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

**This syllabus is subject to change. You will be notified if any changes are made.**