

**MAS 3114 (Web)**  
FALL 2019

## **SYLLABUS**

**COURSE TITLE:** Computational Linear Algebra

**CATALOG DESCRIPTION:** Linear equations, matrices, and determinants; vector spaces and linear transformations; inner products and eigenvalues. This course emphasizes computational aspects of Linear Algebra.

**COURSE CONTENT:** MAS 3114 is designed to serve science, computer science, quantitative science, engineering majors, and mathematics minors. Mathematics majors are required to take MAS 4105.

MAS 3114 is a 3-credit course on linear algebra whose topics are of computational nature. The topics include linear equations, matrices, determinants, vectors, vector spaces, linear transformations, inner products, eigenvalues, and applications.

Computer projects are assigned (5 per semester). We require the students to learn MATLAB, a programming environment, for the projects. Proofs are not stressed as much as in MAS 4105 Linear Algebra 1. The course is delivered entirely online.

**PREREQUISITES:** familiarity with a programming language and a grade of a C or better in MAC 2312.

**COURSE GOALS:** By the end of the term, we expect the students to be able to analyze and solve linear systems and apply their knowledge to the real world problems.

**INSTRUCTOR:** **Dr. Larissa Williamson**  
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**TEACHING ASSISTANT:** **Mahdi Kouretchian**  
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**Course Calendar**  
**MAS 3114 – Web**

<b>Fall 2019</b>	<b>Monday</b>	<b>Tue</b>	<b>Wed</b>	<b>Thursday</b>	<b>Friday</b>
August	19	20	21 M1	22	23 M2
September	26 M3	27	28 M4	29 HW&LC M1-M3 Skill Survey Quiz	30 M5
	2 Labor Day	3	4 M6	5 HW&LC M4-M5	6 M7 <b>Project 0</b>
	9 M8	10	11 M9	12 HW&LC M6-M8 Review1 LC due	13 M10 <b>Project 1</b>
	16 M11	17	18 M12	19 HW&LC M9-11	20 M13
	23 M14	24	25 Review	26 HW&LC M12-14 Review2 LC due	27 <b>Exam1:M1-14</b>
October	30 M15	1	2 M16	3 HW&LC M15 <b>Project2</b>	4 Homecoming
	7 M17	8	9 M18	10 HW&LC M16-17	11 M19
	14 M20	15	16 M21	17 HW&LC M18-20	18 M22
	21 M23	22	23 M24	24 HW&LC M21-23 Review3 LC due	25 <b>Project 3</b>
November	28 M25	29	30 M26	31 HW&LC M24-25	1
	4 M27	5	6 Review	7 HW&LC M26-27 Review4 LC due	8 <b>Exam2:M15-26</b>
	11 Veterans Day	12	13 M28	14	15 <b>Project4</b> M29
	18 M30 <b>MakeUp Exam</b>	19	20 M31	21 HW&LC M28-30	22 M32
December	25	26	27 Holiday	28 Thanks	29 giving
	2 HW&LC M31-32 Review5 LC due	3 <b>Quiz:</b> <b>M27-M32</b>	4	5 Reading Day	6 Reading Day

## Delivering Content

### TEXTBOOK & ACCESS CODE:

1) We use the following textbook in this course:

**Linear Algebra and Its Applications**, 5<sup>th</sup> edition,  
by David C. Lay, Steven R. Lay, Judi J. McDonald\*

2) Access code to **MyLab & Mastering** is required in the course.

**The access code can be obtained through UF All Access by authorizing charges to your student financials account and is provided at a discounted price\*\***

**If you do not wish to authorize charges to your student financials account, you may purchase an access code at the Campus bookstore instead**

**(<https://www.bkstr.com/floridastore>), which will be more expensive than opting in.**

\* Registration with MyLab gives you an access to an electronic version of the textbook. If you wish to purchase a print text, you may also purchase those at the bookstore at a discounted price.

**\*\*Please see “Course Materials and Registration Instructions” on Canvas for complete information on obtaining an access code to MyLab by authorizing charges to your student financial account through UF All Access program.**

LECTURE NOTES: Lecture note shells make the note taking easier and are required in the course. They can be printed from Canvas at <https://lss.at.ufl.edu/> (under **Lecture Notes**) or purchased at Target Copy (1412 W University Ave, Gainesville, FL 32603).

TEXTBOOK READINGS: Reading the textbook is a part of learning process. The students are strongly recommended to read the corresponding sections of the textbook after (or before) viewing Part I or Part II of a lecture and before taking the quiz in Learning Catalytics. Pages of the textbook that match the content of a lecture are listed in the corresponding Module on Canvas.

## Course Structure

**The course is delivered in E-learning (Canvas):** <https://lss.at.ufl.edu/>

It is divided into **5 units**:

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

MODULES & DUE DATES: The course has total of 32 Modules. It is advisable to complete a module on the date indicated in the Calendar so that you will stay on track and avoid having too many Modules to complete by the Due Date. Each Module becomes available in MyLab & Mastering at least 10 days prior to the due date and will be closed on the Due Date at 11:59 pm ET. The assignments required to be completed for each Module include on-line Homework and Learning Catalytics quiz (please read section “Lecture Participation” in the current syllabus).

REVIEW MODULES: The dates indicated in the calendar as “Review# LC due” are the due dates for Review Modules. A Review Module is the last one in each Unit. Working on the Review modules will help you to prepare for the exams and Quiz. The assignment required to be completed for each Review Module is **Learning Catalytics Quiz** (there is no homework assigned for a Review Module).

TEXTBOOK HOMEWORK: Textbook homework problems are assigned after each lecture. **They will not be graded** but should be considered as an additional tool for mastering the material. A list of recommended Textbook Homework problems is located in each corresponding Module on Canvas.

## Assessments

ON-LINE HOMEWORK: Each on-line **Homework** assignment (HW) is a set of problems assigned in MyLab and numbered according to the Module covered. The HW assignment will give you necessary practice for mastering the material delivered in lecture. A homework assignment is due at 11:59 pm on the due date indicated on the course Calendar, on Canvas, and on MyLab and Mastering. The HW **will be closed after the due date**. A credit for a HW will be given according to the percent value of the correct work completed. There will be total of 32 assignments offered, and the **2 lowest scores will be dropped** at the end of the term.

LECTURE PARTICIPATION QUIZZES: Viewing lectures is an important part of the learning process and required in the course. Your Lecture Participation will be monitored by Pearson’s Learning Catalytics software that can be accessed from MyLab & Mastering after you register with the site.

Important: Please make sure that you will join the correct session in Learning Catalytics. If the link on MyLab Homepage "Join Session in Progress" takes you to a “wrong” session, click on a small link at the bottom of the page that says “Join another session”. It will show you the list of all running sessions and you will be able to choose the “correct” session to join. More information about Learning Catalytics is located on the Canvas page “Course Tools and Technology” under “Course Materials & Registration Instructions”.

Your responses will be graded and recorded in the gradebook. A total of 37 sessions will be offered. There are 2 questions per session. Each question is in the “many choice” format and worth 1 point; the grade will be assigned as 75% for participation and 25% for correctness. Each session will be counted out of 1.75 points. Thus, the students can earn 0.25 point bonus for answering both questions correctly. **The 5 lowest scores on the Lecture Participation will be dropped at the end of the term.**

EXAMS & QUIZ: There will be two Exams, one Quiz, and an optional MakeUp Exam offered in MyLab & Mastering during the term. Exam 1 covers Units 1-2, Exam 2 covers Units 3-4, the mandatory Quiz covers Unit 5, and an optional MakeUp is a re-take for Exam 1 **OR** Exam 2. All exams and the Quiz have to be taken on the dates indicated in the Calendar. The exams in this course are proctored through ProctorU. You can schedule your session on the ProctorU site for any time between 12 am and 9 pm on the day of the exam. Each exam contains 26 multiple-choice questions, which includes 2 bonus questions. The student will have 100 minutes to complete each exam and is only permitted access to pencils, an eraser, and scratch paper while

the exam is in progress. The exams will be graded by MyLab software upon submission, and the grade on Canvas will be counted out of 24 points. A 60-minute Quiz contains 12 multiple-choice questions and will be graded out of 12 points. The Quiz is mandatory but does not require proctoring. The review for exam or the Quiz will become available after the due date and can be accessed from MyLab Gradebook. It may be necessary to miss Exam 1 or Exam 2 during the term or you might not be satisfied with one of your grades earned on the midterm Exams. For these reasons, an OPTIONAL MakeUp Exam will be given on the date indicated in the Calendar – no documentation is needed to take it. The grade on the MakeUp will replace your grade on the corresponding midterm Exam only if you do better on the MakeUp than on the regular Exam. The format of the MakeUp is the same as the format of a midterm exam. Please see the complete information on Exams and ProctorU on Canvas under the link “Exam Information”.

**Important:** No calculators are allowed on Exams! While taking your exam with the ProctorU, you cannot use any notes or open ANY other program or file on your computer except the ones that are required. If you open a program or file such as MATLAB, Calculator, MyMathLab homework, or Lecture Notes, the ProctorU will send Incident Report to the Instructor.

PROJECTS: 5 computer projects will be assigned during the semester. All projects are to be completed by using MATLAB software. Project 0 is an individual project and will be counted out of 10 points. Projects 1–4 are group projects and each is worth 30 points. The projects have to be submitted on Canvas through Assignments link before the due dates indicated in the Calendar. Please visit the link “MATLAB Projects” on Canvas homepage for more information.

## Makeup Policy

**MAKEUP POLICY ON ON-LINE HOMEWORK:** If you missed the due date on a homework assignment on a legitimate and documented reason (which include: being sick, being away on UF business, family emergency), you have to present a valid documentation to Dr. Williamson prior to the due date or right after you came back to school if you were sick. Late excuse documentation will not be accepted. **No extensions on HW will be given after the due date without an appropriate documentation.**

**MAKEUP POLICY ON EXAMS:** **If you are missing a Unit Exam due to legitimate documented circumstances** (which include: being sick, being away on UF business, family emergency), you have an option to take the MakeUp Exam. However, if you wish to make it up earlier in the semester and save the MakeUp for another test, you will need to contact **Dr. Williamson** ([lwill@ufl.edu](mailto:lwill@ufl.edu)) and provide the documentation at least a week prior to the test or immediately afterwards if you were sick. **Important:** an early make-up exam has to be scheduled within one week time frame of presenting the documentation; if an early make-up has not been scheduled in a timing manner, the student will take the regular MakeUp. No make-up will be given on the MakeUp Exam. **Late excuse documentation will not be accepted.** No make-ups will be given at the end of the term. Missing the Quiz without an appropriate documentation and making it up at a later date will result in deduction of points at the instructor’s discretion.

**IMPORTANT NOTE:** Homework, exams, quizzes, and projects will not be reviewed, offered, and/or accepted for grading at the end of the term. We will not accept any late excuse

documentation. You can discuss an Exam, homework, LC quiz, or Project within one week and the Quiz within one day with your instructor if there is a grading error or any other problem. The “Late Submission” policy on Projects is posted on each individual Project page on Canvas.

## Grades

**COURSE GRADE:** The course grade is assigned based on the student’ performance on the following weighted categories:

32	Lecture Participation	@	56 points	10 %
30	On-line homework	@	90 points	15 %
5	Projects	@	130 points	23 %
1	Quiz	@	60 points	10 %
2	Exams	@	<u>240 points</u>	<u>42 %</u>
<b>Total:</b>			576 points	100 %

The course grade is the grade satisfying the conditions below and **will be adhered** to:

<b>Minimum %</b>		<b>Minimum %</b>	
A	90 %	C-	62 %
A-	86 %	D+	58 %
B+	82 %	D	54 %
B	78 %	D-	50 %
B-	74 %	E	0 %
C+	70 %		
C	66 %		

**Note:** We have 0.5% round up margin towards a higher letter grade.

**GRADE POSTING:** All grades will be posted in a timing manner on E-Learning (Canvas) at <http://lss.at.ufl.edu> . You are advised to check regularly whether your grades are handled and recorded properly. You should immediately report any problem with your grade to Instructor.

## Miscellaneous

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

**DRC ACCOMODATIONS:** If you feel that you need special accommodations that would help you to facilitate your learning and improve the outcomes, you should register with the Disability Resource Center (352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)) by providing documentation. Once registered, students will receive an accommodation letter, which they present to the Instructor. Students with disabilities should initialize this process as soon as possible to receive accommodations early in the semester in order to have a better chance for success.

**HELP:** Please visit Resources & Help link on the Canvas Homepage for the information.

## Additional Information

**Grades:** Grading will be in accord with the UF policy stated at <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

**Honor Code:** “UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The [Honor Code](#) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.”

**Class Attendance:** “Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx> “

**Accommodations for Students with Disabilities:** “Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://www.dso.ufl.edu/drc/>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.”

**Online Evaluations:** “Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.”

**Contact information for the Counseling and Wellness Center:** <https://counseling.ufl.edu/> 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.