

**MAS 3114 (Web)**  
SUMMER 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.

**INSTRUCTOR:** **Dr. Larissa Williamson**  
Office: Little 380, Tel. 352-294-2341  
Office Hours: T: 2:00 pm - 3:15 pm  
R: 12:30 pm - 1:45 pm  
F: 11:00 am - 12:15 pm  
or by Appointment  
E-mail: [lwill@ufl.edu](mailto:lwill@ufl.edu)  
Webpage: <https://people.clas.ufl.edu/lwill/>

**Teaching Assistant:** **Churni Gupta**  
Office: LIT 403  
Office Hours: By Appointment  
Email: [churnibidisha@ufl.edu](mailto:churnibidisha@ufl.edu)

**E-learning (Canvas):** <https://lss.at.ufl.edu/>

The course 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

**FINAL EXAM:** M01 – M32

**Course Calendar**  
**MAS 3114 – Web**

<b>Summer 2019</b>	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>
May	13 M1	14 M2	15	16 M3	17 HW&LC M1-2 Skill Survey Quiz
	20 M4	21 M5	22 M6	23 HW&LC M3-M5	24 <b>Project 0 due</b>
	27 Memorial Day	28 M7	29 M8	30 HW&LC M6-M7 Review1 LC due	31 <b>Project 1 due</b>
June	3 M9	4 M10	5	6 HW&LC M8-10	7 M11
	10 M12	11 M13	12	13 HW&LC M11-13	14 <b>Project 2 due</b>
	17 M14	18 M15	19 HW&LC M14 Review2 LC due	20 <b>Exam1:M1-14</b>	21 M16
	S U M M E R B R E A K: J U N E 22 – 30				
July	1 M17	2 M18	3 HW&LC M15-17	4 Holiday	5 M19
	8 M20	9 M21	10	11 HW&LC M18-20	12 <b>Project3 due</b>
	15 M22	16 M23	17 M24	18 HW&LC M21-23 Review3 LC due	19 M25
	22 M26	23 M27	24 HW&LC M24-26 Review4 LC due	25 <b>Exam2:M15-26</b>	26 M28
August	29 M29	30 M30	31 <b>Project4 due</b>	1 HW&LC M27-29	2 M31
	5 M32	6 HW&LC M30-32 Review5 LC	7 <b>Quiz:M27-32</b>	8	9 <b>Final Exam: M1-M32</b>

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).

MODULES & DUE DATES: It is advisable to complete a module on the date indicated in the Course 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 at least 7 days prior to the due date and will be closed on the Due Date at 11:59 pm ET. The assignments, which are required to be completed for each Module, include On-line Homework and Learning Catalytics quizzes.

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. The assignment that is required to complete for each Review Module is a **Learning Catalytics quiz** (please read the section “Lecture Participation” in the current syllabus).

ON-LINE HOMEWORK: Each on-line **Homework** assignment (HW) is a set of problems assigned in MyLab and numbered according to the module covered. A HW assignment is due at 11:59 pm on the due date indicated in the Calendar and on MyLab and Mastering. 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**.

MAKEUP POLICY ON ON-LINE HOMEWORK: If you missed the due date on homework 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.**

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 and preparing for the Exams. A list of recommended Textbook Homework problems is located in each corresponding Module on Canvas.

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 content of a lecture are listed in each corresponding Module on Canvas.

LECTURE PARTICIPATION: 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. Please see the complete information on registration and access to Learning Catalytics 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 which includes 0.25 bonus for answering both questions correctly. **The five 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 Final Exam offered in MyLab during the term. Exam 1 covers Units 1-2, Exam 2 covers Units 3-4, the mandatory Quiz covers Unit 5, and an optional Final is accumulative – it covers Units 1-5. All exams in this course must be proctored through ProctorU. 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. Please see complete information about Exams and ProctorU on Canvas under the link Exam Information. The Quiz is mandatory but does not require proctoring. All exams and the Quiz have to be taken on the days indicated in the Calendar. You can schedule your session on the ProctorU for any time between 12 am and 9 pm on the day of the exam. Each exam contains 26 multiple-choice questions, which include 2 bonus questions. All exams will be graded by MyLab software upon submission, and the grades 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. It may be necessary to miss an Exam during the term or you might not be satisfied with one of your grades earned on the Unit Exams. For these reasons, an OPTIONAL Final Exam will be given on the last day of classes. **The best 2 out of 3 exam scores will count.**

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.

**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 either to take the Final Exam as a MakeUp, or, if you wish to make it up before the last days of classes and save the Final for another test, you can schedule a

makeup earlier: please 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. Late excuse documentation will not be accepted. No makeups will be given at the end of the term. Missing the Quiz or Final exam without an appropriate documentation and taking a makeup will result in deduction of points at the instructor's discretion.

PROJECTS: 5 computer projects will be assigned during the semester. All projects are to be completed by using MATLAB software. Project 0 is 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.

**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 a Unit Exam, homework, LC quiz, or Project within one week and the Quiz and Final exam – within one day with your instructor if there is a grading error or any other problem. “Late submission” policy on Projects is posted on each individual Project page on Canvas.

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

SPECIAL ACCOMODATIONS: Students with learning disabilities should request accommodations according to the UF policy. Please check on the current status with the DRC.

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 %		

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.

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

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:** <http://www.counseling.ufl.edu/cwc/Default.aspx>, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.