

MAS 3114
SPRING 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 a 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.

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: M: period 8, W: periods 7&8, F: period 8
E-mail: lwill@ufl.edu
Webpage: <https://people.clas.ufl.edu/lwill/>

TA (Grader):
Office:
Office Hours:
Email:

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

The OPTIONAL Final Exam is on Thursday, May 2, from 8:00 – 8:50 PM at CSE A101

Course Calendar

MAS 3114 – 07HF (17604)

Spring 2019	Monday	Tue	Wed	Thursday	Friday
January	7 M1	8	9 M2	10	11 M3
	14 M4	15	16 M5	17 Skill Survey Quiz Modules1-3 due	18 M6
	21 Holiday	22	23 Review1	24 Modules4-6 due	25 Exam1:M1-6
February	28 M7	29	30 M8	31 Module 7 due	1 Project 0 M9
	4 M10	5	6 M11	7 Modules 8-10 due	8 Project 1 M12
	11 M13	12	13 M14	14 Modules11-13 due	15 Review2
	18 Module 14 due Exam2:M7-14	19	20 M15	21	22 M16
March	25 M17	26	27 Project2 M18	28 Modules15-17 due	1 M19
S P R I N G B R E A K: March 2 – March 10					
	11 M20	12	13 M21	14 Modules18-20 due	15 Review3
	18 Module 21 due Exam3:M15-21	19	20 M22	21	22 M23
	25 M24	26	27 M25	28 Modules22-24 due	29 Project3 M26
April	1 Review4	2	3 Exam4:M22-26	4 Module25-26 due	5 M27
	8 M28	9	10 M29	11 Modules27-28 due	12 M30
	15 M31	16	17 M32	18 Modules29-31 due	19 Project4 Review 5
	22 Module 32 due Review	23	24 Quiz:M27-32 Review	25 No Class	26 No Class

TEXTBOOK & ACCESS CODE:

1) We use the following textbook in this course:

Linear Algebra and Its Applications, 5th 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**

You must authorize charges until 02/01/2019. 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 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 assignment, which is required to be completed for each Module, is On-line Homework.

REVIEW: The dates indicated in the calendar as “Review#” 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 exams and the quiz.

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 Assignments page. 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 a UF business, a 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** viewing a lecture and **BEFORE** doing the homework. The pages of the textbook that match the content of a lecture are listed in each corresponding Module on Canvas.

LECTURE PARTICIPATION: Starting the second week of classes, lecture participation will be taken in the lecture hall during each lecture. The students are required to register with **MyLab & Mastering** in order to use Pearson's Learning Catalytics system and get points for participation. The students will access the system from Canvas by clicking on the link **MyLab & Mastering** on the left-hand panel. The active session will be shown on MyMathLab Course Home page. The students simply click on the active session's number to join. Learning Catalytics allows the Students to use their smartphone, tablet, or laptop to respond to the questions in class, and their responses will be graded and recorded in the gradebook. A total of 33 sessions will be graded. There will be 2 questions per session. Each question is worth 1 point and the grade will be assigned as 75% for participation and 25% for correctness. A student will get a full credit 1.75 by attempting two questions and answering one correctly. If a student answers both questions correctly, he/she receives 2 points for the session, which includes 0.25 bonus. **The three lowest scores for the lecture participation will be dropped at the end of the term** to compensate for occasional absences, device failures, etc.

EXAMS & QUIZ: There will be four Unit Exams, one Quiz, and an optional Final Exam offered during the term. Each Unit exam covers the corresponding Unit, the Quiz covers Unit 5, and the optional Final is cumulative – it covers Units 1-5. All exams for this course will be given in the **lecture hall** on the dates indicated in the Calendar during the **regular class time**. The Quiz has to be completed within MyLab and Mastering on the date indicated in the Calendar. The Quiz is mandatory but does not require proctoring. Each exam contains 12 five-point multiple-choice questions and 5 one-point true/false bonus questions. A 60-minute Quiz in MyLab contains 12 multiple-choice questions and will be graded out of 12 points by MyLab software. 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 Thursday, May 2, at 8:00 PM at CSE A101. The best 4 out of 5 exam scores will count.

MAKEUP POLICY ON EXAMS: **If you are missing a Unit Exam due to legitimate documented circumstances** (which include: being sick, being away on a UF business, a 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 day of classes and save the Final for another test, you can schedule a makeup earlier:** please contact **Dr. Williamson** (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 makeup has to be scheduled within one week time frame of presenting the documentation; if a makeup has not been scheduled in a timing manner, the student will take the

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

PROJECTS: 5 computer projects will be assigned during the semester and submitted on Canvas before the due dates indicated in the Calendar. All projects are to be completed by using MATLAB software. Please visit the link "MATLAB Projects" on Canvas homepage for more information. The individual Project 0 is **for bonus**. It is worth 5 points – this score will be added to the score for Project 1. Projects 1–4 are group projects and each is worth 30 points.

IMPORTANT NOTE: Homework, exams, 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 or homework within one week and the Final exam or Project – within 2 days 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 are 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 DRC.

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

30	Lecture Participation	@	52.5 points	9.33 %
30	On-line homework	@	90 points	16 %
4	Projects	@	120 points	21.33 %
1	Quiz	@	60 points	10.67 %
4	Exams	@	<u>240 points</u>	<u>42.67 %</u>
Total:			562.5 points	100 %

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

	Minimum %		Minimum %
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 the **Resources & Help** link on Canvas Homepage for complete 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.