

MAS 3114 (Web)
SUMMER 2020

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**
Office: Little 380, Tel. 352-294-2341
Office Hours: By Appointment (via Zoom)
E-mail: lwill@ufl.edu
Webpage: <https://people.clas.ufl.edu/lwill/>
E-Learning: <https://elearning.ufl.edu/>

Course Calendar

Summer 2020	Monday	Tue	Wed	Thursday	Friday
May	11 M1	12 M2	13	14 M3	15 HW&LC M1-2 Skill Survey Quiz
	18 M4	19 M5	20 M6	21 HW&LC M3-M5	22 Project 0 due
	25 Memorial Day	26 M7	27 M8	28 HW&LC M6-M7 Review1 LC due	29 Project 1 due
June	1 M9	2 M10	3	4 HW&LC M8-10	5 M11
	8 M12	9 M13	10	11 HW&LC M11-13	12 Project 2 due
	15 M14	16 M15	17 HW&LC M14 Review2 LC due	18 Exam1:M1-14	19 M16
S U M M E R B R E A K: J U N E 2 2 – J U L Y 3					
July	6 M17	7 M18	8	9 HW&LC M15-17	10 M19
	13 M20	14 M21	15 M22	16 HW&LC M18-20	17 Project3 due
	20 M23	21 M24	22 M25	23 HW&LC M21-23 Review3 LC due	24 M26
	27 M27	28 M28	29 HW&LC M24-26 Review4 LC due	30 Exam2:M15-26	31 M29
August	3 M30	4 Project4 due	5 M31	6 HW&LC M27-29	7 M32
	10 MakeUp Exam	11	12 HW&LC M30-32 Review5 LC	13 Quiz: M27-32	14

Delivering Content

TEXTBOOK & ACCESS CODE: 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*

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

An 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 E-Learning (Canvas) for complete information on obtaining an access code to MyLab by authorizing charges to your student financial account through UF All Access program.**

LECTURES & LECTURE NOTES: Lectures for this course are pre-recorded and available for viewing in each Module on Canvas. Lecture note shells make the note taking easier and are required in the course. They can be printed from E-Learning (under **Lecture Notes**). The Course Packet can be purchased or ordered and shipped from the Target Copy (1412 W University Ave, Gainesville, FL 32603, <http://target-copy.com/>)

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 or doing the homework. 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 on E-Learning (Canvas): <https://elearning.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 Course Calendar as “M#”, so that you will stay on track and avoid having too many Modules to complete by the Due Date. Working on a Module requires viewing the Lecture and completing MyLab assignments, which include On-line Homework (HW) and Learning Catalytics (LC) quiz (please read sections “On-line Homework” and “Lecture Participation Quizzes” of the current syllabus). MyLab assignments will be available at least a week prior to the due date and closed on the Due Date at 11:59 pm ET.

REVIEW MODULES: The dates indicated in the Course 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 the Quiz. The assignment required to be completed for each Review Module is a **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 a total of 32 homework assignments offered, and the **2 lowest scores will be dropped** at the end of the term.

LECTURE PARTICIPATION QUIZZES: Viewing and analyzing lectures on Canvas is considered to be Lecture Participation and required in the course. Your Lecture Participation will be monitored by Pearson’s Learning Catalytics (LC) software that can be accessed from MyLab & Mastering after you register with the site. The due dates for the LC quizzes for M1-M32 are the same as for the corresponding HW and, for the Review Modules, the due dates are marked in the Course Calendar as “Review# LC”. Your LC quizzes responses will be graded and recorded in the gradebook. A total of 37 LC 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, a student 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.**

Important: Make sure that you will join the correct session on Learning Catalytics (LC). If, when accessing the site, it takes you to a “wrong” session, click on the small link on the bottom of the page that says “Join another session”. It will bring up the list of all running sessions and you can choose the “correct” session to join. More information on Learning Catalytics is located on Canvas page “Course Tools and Technology” under “Course Materials & Registration Instructions”.

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 either for Exam 1 **OR** for Exam 2. All exams and the Quiz have to be taken on MyLab on the dates indicated in the Calendar. The exams in this course are proctored through the ProctorU. You should schedule your session on the ProctorU site at least 4 days prior to the exam date. You can schedule it for any available time in the range between 12 am and 9 pm on the day of the exam. Each Exam and the Quiz

opens on MyLab & Mastering at 12 am on the date of the exam and closes at 11:59 pm on the same day. An 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 out of 26 points upon submission, but the grade on Canvas will be counted out of 24 points, which is equivalent to 120 points on the Course Grade scale (please see section Course Grade below). The 60-minute Quiz is mandatory but does not require proctoring. The Quiz contains 12 multiple-choice questions and will be graded out of 12 points on Canvas (or 60 points on the Course Grade scale). Review of an exam or the Quiz will become available after the due date and can be accessed from the MyLab Gradebook.

MakeUp Exam (for Exam 1 or Exam 2): 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 on the Calendar – no documentation is needed to take it. You can take/retake only one of the midterm exams. The grade on a MakeUp will replace your grade on the corresponding Exam only on condition if you do better on the MakeUp than on the regular Exam. The format of a MakeUp is the same as the format of the corresponding midterm exam.

For more information related to the Exams, Quiz, and ProctorU, please visit the link “Exam Information” on Canvas.

Important: No calculators are allowed on the 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 a file such as MATLAB, Calculator, MyMathLab homework, or Lecture Notes, the ProctorU will send an Incident Report to the Instructor.

PROJECTS: 5 computer projects will be assigned during the semester. All projects have to be completed using MATLAB software. Project 0 is an individual project and will be counted out of 10 points. Projects 1–4 are group projects – each is worth 30 points – **and the grade will be assigned to the whole group**. The projects have to be submitted on Canvas through the Assignments before the due dates indicated on the Calendar. For more information please visit the link “MATLAB Projects” on Canvas and read the instructions for each Project located under Assignments, Project#.

Makeup Policy

MAKEUP POLICY ON ON-LINE HOMEWORK AND LC QUIZZES: If you missed the due date for a homework assignment and/or LC quiz on a legitimate and documented reason (which include: being sick, being away on the UF business, family emergency), you may request an extension prior to the due date or right after you came back to school if you were sick by presenting valid documentation to Dr. Williamson.

Adjustment due Covid-19: The students may request an extension on a HW and LC quiz using the above guidelines but without presenting documentation.

MAKEUP POLICY ON EXAMS AND QUIZ: **If you are missing a Unit Exam due to legitimate documented circumstances** (which include: being sick, being away on the UF

business, family emergency), you have an option of taking 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 send your request to **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 make-up exam has to be requested in a timing manner and scheduled within one week from sending a request and/or presenting the documentation; otherwise, the student will take the regular MakeUp. Late requests and late excuse documentation will not be accepted. Missing the Quiz without an appropriate documentation and making it up at a later date may result in a deduction of points at the instructor's discretion.

Adjustment due Covid-19: The students may request re-scheduling of an Exam or the Quiz according to the guidelines given above but without presenting documentation.

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 requests and/or any late excuse documentation. You can discuss a graded Exam, homework, LC quiz, and Project0 – Project3 within one week and the Quiz and Project4 – within one day – with your instructor if there is a grading error or any other problem. The “Late Submission” policy on the Projects is posted on each individual Project page on Canvas.

All issues with Canvas, MyLab & Mastering, UF Apps & MATLAB, ProctorU have to be reported immediately in order to be able to request an extension or a re-take.

Grades

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

32	Lecture Participation	@	56 points	9.7 %
30	On-line homework	@	90 points	15.6 %
5	Projects	@	130 points	22.6 %
1	Quiz	@	60 points	10.4 %
2	Exams	@	<u>240 points</u>	<u>41.7 %</u>
	Total:		576 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 %		

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 <https://elearning.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 the 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.

HELP: Please visit Resources & Help link on the Canvas Homepage for the 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 who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/> It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.”

Online Evaluations: “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, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-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.