MAS 3114
SPRING 2014

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 3141 is a 3 credit course on linear algebra that is the computational nature of topics. These topics include linear algebra, matrices, determinants, vectors, vector spaces, linear transformations, inner products, eigenvalues, and applications.

Computer projects are assigned (4 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: experience with a scientific programming and a grade of C or better in MAC 2312: Calculus 2 (or in MAC 2512 or in MAC 3473)

In SPRING 2014, you are assigned to the following course meeting time:

MAS 3114	07HF	COMP. LINEAR ALGEBRA	MWF10	LIT 101

INSTRUCTOR: **Doctor Larissa Williamson**
Office: Little 380, Tel. 352-294-2341
Office hours: M9, W8-9, F9 or upon appointment
E-mail: lwill@ufl.edu

E-learning (Sakai): https://lss.at.ufl.edu/

Course website: http://people.clas.ufl.edu/lwill/

The course is divided into **four units**:

Unit I	L01 – L08	Systems of Linear Equations & Matrices
Unit II	L09 – L15	Determinants & Vector Spaces
Unit III	L16 – L22	Subspaces & Eigenvalues
Unit IV	L23 – L29	Inner Products & Orthogonalization
Unit V	L30 – L32	Quadratic Forms & Applications

FINAL EXAM: L1 – L32

Course Calendar

MAS 3114					
Spring 2014	**Monday**	**Tue**	**Wed**	**Thursday**	**Friday**
JANUARY	6 L1 Classes begin	7	8 L2	9	10 L3
	13 L4	14	15 L5	16 HW:L1-L3 due	17 L6
	20 Martin Luther King	21	22 L7	23 HW:L4-L6 due	24 L8
	27 L9	28	29 **Review**	30 HW:L7-L8 due	31 **Exam1: L1-L8**
FEBUARY	3 L10	4	5 L11	6 HW:L9-L10 due	7 **Project1 due** L12
	10 L13	11	12 L14	13 HW:L11-L13 due	14 L15
	17 L16	18	19 **Review**	20 HW:L14-L15 due	21 **Exam2:L9-L15**
	24 L17	25	26 L18	27 HW:L16-L17 due	28 **Project2 due** L19
MARCH	SPRING BREAK				
	10 L20	11	12 L21	13 HW:L18-L20 due	14 L22
	17 L23	18	19 **Review**	20 HW:L21-L22 due	21 **Exam3:L16-22**
	24 L24	25	26 L25	27 HW:L23-L24 due	28 **Project3 due** L26
APRIL	31 L27	1	2 L28	3 HW:L25-L27 due	4 L29
	7 L30	8	9 **Review**	10 HW:L28-L29 due	11 **Exam4:L23-29**
	14 L31	15	16 L32	17 HW:L30-L31 due	18 **Project4 due** **Review**
	21 HW:L32 due **Review**	22	23 **Final Exam** **L1-L32**	24 No class	25 No class

TEXTBOOK & ACCESS CODE: **You have several options of purchasing the textbook and MyMathLab access code.**

1. The Course Pack **Linear Algebra plus MyMathLab Access Kit, by Lay**

ISBN: **9780321399144**

can be purchased on Campus bookstore or on-line directly from PEARSON at http://www.mypearsonstore.com/

NOTE: If you have purchased a used textbook, you are also required to purchase a student access code to MyMathLab on line at http://pearsonmylabandmastering.com/ during the registration with MyMathLab (see below instructions on registration).

2. **MyMathLab Student Access Code (includes E-Book)** can be purchased on-line at http://pearsonmylabandmastering.com/ (see NOTE in *option* 1 above).

IMPORTANT NOTES:

1. You can use only one of the options listed above, not both.
2. We **strongly recommend not to purchase** the Course Pack or MML access code on-line at Amazon.com, EBay, or other resellers rather than UF bookstore or PEARSON because most of the times the codes are already expired or have been redeemed by other students.

INSTRUCTIONS ON REGISTRATION with MYMATHLAB

You should go to http://pearsonmylabandmastering.com/ and click on 'Register' under the Student heading. If you have purchased a student access code, you will be prompted to type it during the registration. You will also need to enter the course ID: **williamson54175.**
(NOTE: the course ID is not an Access Code).
If you do not have an access code yet, you should purchase it during the registration. You need:

- A valid email address
- Course ID: **williamson54175**
- A valid Credit Card or PayPal Account

If you are waiting for your financial aid disbursement, you can request a temporary access code when register with MyMathLab which is valid for 21 days. To complete the course, however, you will need to purchase an access code and TO CONVERT MYMATHLAB ACCOUNT FROM TEMPORARY ACCESS TO FULL STATUS: Log into your current MyMathLab account where you have been using the Temporary Access - **YOU DO NOT NEED TO CREATE A NEW ACCOUNT** - From within the Pink Box displayed under your course name, choose the option to either "Enter Access Code Now" (if you have purchased your code already from the bookstore) or "Purchase Access Code Now" (this will allow you to use a credit card or a PayPal account to make your purchase). - Once you've entered your access code or purchased it online, your account will automatically be upgraded to full status and you can resume work on assignments in your MyMathLab course.

After you have registered with MyMathLab, you should login to your account and enroll in the course. Then you need to run Browser Check to make sure that you can view the Course Materials.

LECTURE NOTES: Lecture notes shell makes the note taking easier and is required in the course. It can be printed from Sakai at https://lss.at.ufl.edu/ (under the **Course Materials**) or purchased at Target Copy: 1412 W University Ave, Gainesville, FL 32603

LECTURES: The lectures will be delivered on the dates marked with L in the Calendar. It is important that you should have a hard copy of the lecture notes in class in order to follow the lecture presentations and work out problems with the lecturer during the presentations.

REVIEW: On the dates indicated in the calendar as "Review", the lecturer will complete unfinished lectures and discuss the material for the upcoming test. The students are required to have a Review sheet in class. Exam Review sheets can be found under the Lecture Notes in Sakai. Participation in these sessions is very important and attendance will be taken.

UNIT EXAMS: Exams will be offered on the dates indicated in the Calendar with a reference to the lectures that are covered on each exam. Total of 4 unit exams will be given during the term. The unit exams are multiple-choice and will be machine graded on a scale from 0 to 72. 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 Exam. For this reason, an OPTIONAL FINAL EXAM will be given at the last day of classes. The best 4 of the 5 exam scores will count. **All Exams will be administered during the normal class time**.

MAKEUP POLICY ON EXAMS: **If you are missing a Unit Exam due to legitimate documented circumstances, 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 see **Dr. Williamson in LIT 380** during her office hours at least a week prior to the test or immediately afterwards if you were sick. Late excuse documentation will not be accepted.

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 Exams. To view Homework, go to http://people.clas.ufl.edu/lwill/courses/mas-3114/textbook-homework/

ON-LINE HOMEWORK: Each on-line **Homework** assignment is a set of problems assigned in MyMathLab and numbered according to the lectures covered. Each HW assignment is due on the date indicated in the Calendar and MyMathLab (on Thursdays; the last one – on Monday). A HW assignment is worth 3 points and has to be completed before the due date which in 11:59 pm on the day listed in the Calendar. **The HW will be closed after the due date**. **The credit for a HW will be given according to the percent value of the work completed.** There will be total of 32 assignments given and the **2 lowest scores will be dropped**. Thus, a maximum of 90 points can be earned on the HW.

MAKEUP POLICY ON ON-LINE HOMEWORK**:** If you missed the due date on homework on a legitimate and documented reason, you have to present a valid documentation to Dr. Williamson prior to the due date or right afterwards if you were sick. Late documentation will not be accepted. No extensions will be given after the due date.

FINAL EXAM: The Final Exam is OPTIONAL and will be given on the last day of classes **during the normal class time**. The final is accumulative all multiple-choice questions and worth 72 points. The best 4 out of total 5 term exam scores will count. If you are satisfied with your grades on the 4 Unit exams, you do not need to take the Final.

PROJECTS: 4 computer projects will be given during the semester and collected on the dates indicated in the Calendar in the lecture hall. All projects are to be completed by using MATLAB software. Links to MATLAB resources are available to the students at http://people.clas.ufl.edu/lwill/courses/mas-3114/matlab-resources/
The students will be working in groups up to four persons submitting a single report for their projects. The students are expecting to work in these groups for entire semester. Each project is worth 24 points. Thus, up to 96 points can be earned on the computer projects.

IMPORTANT NOTE: Homework, exams, and projects will not be reviewed, offered, and/or accepted for grading after the end of the term. We will not accept any late excuse documentation. You have to present to your Instructor an appropriate documentation **before you miss an Exam or right after you come back to school if you were sick** to be eligible for a makeup. You can discuss a Unit Exam, project, or homework within one week (Final exam – within 2 days) with your instructor if there is a grading error or any other problem.

LECTURE PARTICIPATION: Starting at **the end of the second week of the semester**, students are required to have their i>clickers in class in order to participate in the lectures. Students will be asked questions to test their understanding of class materials and their responses will be graded and recorded. The total of 66 points can be earned on the lecture participation. Eight extra points will be granted at the end of the term to compensate for occasional absences, device failures, etc.

i>clicker2 remote can be purchased at Campus Bookstore
ISBN: 9781429280471

GENERAL INSTRUCTIONS FOR CLICKERS:

In this course, you have the option of using i>clicker2 remote, or using i>clicker GO, which enables you to vote via a web-enabled device like a laptop or smart phone. PLEASE NOTE that i>clicker GO cannot be used in a course where your instructor has not enabled i>clicker GO. Check with your other instructors to ensure that i>clicker GO is permitted in each course you take—otherwise, you may want to consider purchasing a remote so that you can use it in all your courses. *Only purchase a i>clicker GO subscription if:*

1. You will not be using i>clicker in another course that does not allow i>clicker GO as an alternative to purchasing a remote.
2. You do not plan to sell back a remote to the bookstore.
3. You have access to a wireless device (i.e. a laptop, iPhone, iPod Touch, or Android) running a browser that supports AJAX, JavaScript, and HTTPS requests such as Internet Explorer, Firefox, Chrome or Safari.

Be sure to check with your other instructors if you have questions about the possibility of using i>clicker GO in your course(s).

***INSTRUCTIONS FOR WEB REGISTRATION*:**

You are required to purchase an i>clicker 2 remote or i>clicker GO subscription for in-class participation. i>clicker is a response system that allows you to respond to questions I pose during class, and you will be graded on that feedback and/or your in-class participation (i>clicker GO works the same way). In order to receive this credit, you will need to register your i>clicker 2 remote or set up your i>clicker GO account by **the end of the second week of classes**. If you have decided to use i>clicker GO instead of a remote, please see below for registration instructions.

i>clicker 2 remote registration:

You must have come to class at least once and voted on at least one question in order to complete this registration properly. Once you have responded to a question with your i>clicker remote, go to http://www.iclicker.com/registration. Complete the fields with your first name, last name, student ID, and remote ID. Your student ID should be your **GATORLINK USERNAME.** The remote ID is the series of numbers and sometimes letters found on the bottom of the back of your i>clicker remote. i>clicker will be used every day in class, and you are responsible for bringing your remote daily.

i>clicker GO registration:

To create an i>clicker GO account, visit https://iclickergo.com (USA) or https://iclickergo.ca (Canada) or download the app for iOS or Android. Creating an account automatically starts a free 14-day trial subscription. **Please use this trial period to make sure i>clicker GO will work for all of your i>clicker classes before purchasing a subscription as there are no refunds afterwards**.

Once you create your i>clicker GO account, you do not need to do anything else to register. Just be sure that your account has the following profile information:

Student ID: **GATORLINK USERNAME**
School ZIP/Postal Code: **32611**
School Name: **[school name student should select here]**

At the end of your trial, should you decide to purchase i>clicker GO, you can purchase access to i>clicker GO in a variety of subscription lengths using your credit card online or through in-app purchase with your smartphone; this subscription includes an unlimited number of courses.

If you have an activation code from purchasing an access card in the bookstore or from a package with a textbook, you will need to redeem the code from the i>clicker GO website. Once redeemed, the activation will take affect for iOS and Android apps. You cannot redeem access cards from within the iOS or Android apps. To redeem on the website, visit https://iclickergo.com (USA) or https://iclickergo.ca (Canada) and log into your account . Enter your code from your account profile page if you do not see an entry field upon logging into i>clicker GO.

If you have more questions on i>clicker registration, please visit http://support.iclicker.com for FAQs and other resources.

CALCULATOR POLICY: Calculators maybe 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 requesting accommodations must first register with the Dean of Students Office. The Dean of Students Office will provide the student with documentation which must be turned in to the Instructor when requesting accommodations.

COURSE GRADE: The course grade is based on 540 points accumulated as follows:

33	Lecture Participation	@	2 points	66	12 %
30	On-line homework	@	3 points	90	16 %
4	Projects	@	24 points	96	18 %
4	Exams	@	72 points	288	54 %
			Total:	540	100 %

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

Passing Grades	**Minimum %**	**Non-passing Grades**	**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: A passing grade in the course is a C or higher.

GRADE POSTING: All grades will be posted in a timing manner on E-Learning (Sakai) at http://lss.at.ufl.edu . You can access your grades on E-Learning by logging in with you Gatorlink Username and Password.

HELP**:** In addition to attending your class regularly and visiting your Instructor during her office hours, the following aids are available:

a) Broward Teaching Center: The OIR tutoring center located in SE Broward Hall is open during the day and in the evening. Further information and hours of operation are posted on-line at www.teachingcenter.ufl.edu

b) Private Tutors: If, after availing yourself of these aids, you feel you need more help, you may obtain from the Mathematics Department Office (358 Little) a list of qualified tutors for hire. This list is also posted on the department web page http://www.math.ufl.edu/