

MAS 2103 – 06H – 3 credits  
**Honors Matrix Theory**



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**COURSE MEETINGS:** T/R 11:00AM-12:50PM IN AD 206, ON THE JUPITER CAMPUS

**COURSE DESCRIPTION:** Vectors and vector spaces. Linear transformation and matrices. Rank and determinants. Systems of linear equations. Diagonalization. Characteristic values.

**GOALS.** Some specific goals of the course are for you to:

- think critically (always a goal in mathematics classes);
- add, multiply, and transpose 2x2 and 3x3 matrices;
- recognize how to use matrices to solve problems, particularly problems related computer science and business;
- communicate effectively, especially by writing precisely about technical things;
- use technological tools such as internet matrix calculators and equation editors in an appropriate manner;
- improve logical thinking and problem-solving skills.

**TEXT:** *Elementary Linear Algebra*, 8<sup>th</sup> ed, Larson, 2018, accessible through Cengage. You only need to buy a course subscription (\$100.00).

You will be required to purchase a semester access to the e-book and Webassign. This website will help you register.

<https://startstrong.cengage.com/webassign-not-integrated-ia-no/>

You can go to <http://services.cengagebrain.com/course/site.html?id=4908195>

Go to the bottom and you will see a link to

**WebAssign Instant Access for Larson's Elementary Linear Algebra, 8th Edition, Ron Larson, Single-Term.**

This will give you access to the textbook and the webassign. We will cover Chapters 1 through 7 of the text [L]. We will be skipping some selected sections, plus I will only go through a little bit of Chapter 5.

**ATTENDANCE.** You are responsible for all material covered in class. Attendance is not mandatory; attendance is **strongly** encouraged. Due to the current pandemic I do encourage you to let me know if you are feeling sick, and in this case please do not come to class. You will not be penalized if you miss class. You will be able to watch a video recording of the class via an upload from Zoom to Canvas. You can also attend the zoom lecture.

**HOMEWORK.** Please read the section to be covered *before* the lesson, then complete the homework exercises assigned on a given day before the next class meeting. There are two aspects to homework: [L] and **WebAssign**.

First, at the end of each section in the Larson text [L], there are numerous HW problems. On my webpage, I have created a detailed list of problems that I think are instructive and that you should be able to do. The odd numbered exercises have the answers included in the e-book. You should do as many as you can to ensure that you understand the material. Please take note that there is a service that comes with the textbook called CalcChat. <https://www.calcchat.com/book/Elementary-Linear-Algebra-8e/>  
At CalcChat you can find worked out video solutions to selected odd-numbered exercises from the book.

Second, **WebAssign** will be used to submit homework. Homework should be submitted by the posted deadline to get credit. My default setting is that you will get 100 attempts on each HW, and your best score on each problem will be counted. Each HW problem will be worth one point and Webassign does give partial credit.

We will discuss some WA homework problems in class, but there will often not be enough time to discuss all of them. Please come to office hours or visit the math tutors if you have additional questions about the homework.

**PORTFOLIO.** Attached to each chapter in the book will be a Canvas Assignment titled Portfolio Chapter X. As you do problems from the text [L] you should scan your work and save as a .pdf. Then you should upload the work into that Chapter's portfolio. You should do at least 5 problems from each section. Please do not include problems that are done in class nor in CalcChat.com. This means do the even ones for the

portfolio. Also, do not count the True/False questions though these are absolutely worth doing. There will be a separate place for those. Also, there will be a separate place for proofs.

**DEFINITIONS.** There will be a Canvas Discussion Board created. Students are expected to post definitions there as we progress through the class. I will update the Definitions.pdf file as repost as needed.

**PROOFS.** There will be some proofs that I will ask you to work on and submit. The goal is for you to get better at writing proofs.

**QUIZZES AND (NO) MAKEUP POLICY.** Most weeks, we will have a canvas quiz to help ensure that you stay on top of the material. I understand that things happen and therefore your two (2) lowest quiz scores will be dropped for the purposes of determining your quiz grade. The point of the quiz is to give you practice in answering questions. You should try to do these without using your notes but this is not mandatory. You should definitely NOT work together on the quizzes. There will be a deadline for the quizzes.

**STANDARDS TEST.** There will be two Standards Tests. The Standards Tests will not be included in your final average. However, **failing to pass a Standards Test will result in the lowering of your final grade by 5%. (For a maximum of 10%.)** You may take each Standards Test as many times as needed until you pass. The Standards Tests must be completed by the date of the final exam. The Standards Tests will be done remotely and proctored.

**WORKLOAD AND ASSISTANCE.** You should expect to spend **10 to 12 hours each week**, outside of class, on the course material. This includes reading, homework, and sometimes watching videos. Please ask questions and seek assistance as needed. I encourage you to make use of my office hours.

**GRADING.**

|     |                          |
|-----|--------------------------|
| 15% | Portfolio                |
| 5%  | Definitions              |
| 10% | Proofs -- HW             |
| 55% | Homework -- Webassign    |
| 10% | Quizzes -- Canvas        |
| 5%  | Comprehensive Final Exam |

|        |       |       |       |       |       |       |       |       |       |       |        |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| A      | A-    | B+    | B     | B-    | C+    | C     | C-    | D+    | D     | D-    | F      |
| 93-100 | 90-92 | 87-89 | 83-86 | 80-82 | 77-79 | 73-76 | 70-72 | 67-69 | 63-66 | 60-62 | 0 – 59 |

After two full weeks of face to face instruction with consecutive “no show” of any students in person in the classroom, the modality of this course section may be changed to remote instruction only at the discretion of the instructor or university.

**COLLABORATION AND THE HONOR CODE.** I expect you to abide by the Honors College Academic Honor Code. It is available at <http://www.fau.edu/honors/academics/honor-code.php>. I assume that you're here to learn. If you talk to each other, you will learn from each other, perhaps more than you will learn from me. I encourage you to form study groups. Try the homework yourself, and then get together with a study group to go over questions, and to study for quizzes and tests. You will learn a great deal from articulating your questions and explaining material to your peers. Collaboration on homework and in class worksheets is encouraged, but you must be sure you understand and can complete problems on your own, as collaboration on tests, quizzes and the final exam is forbidden.

**Video, Audio or Other Recordings of class is forbidden without express permission of the instructor.**

### **Classroom Etiquette Policy**

In order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular telephones and pagers, are to be disabled in class sessions.

### **Policy on Accommodations**

In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with Student Accessibility Services (SAS) and follow all SAS procedures. SAS has offices across three of FAU's campuses -- Boca Raton, SU 131 (561-297-3880); in Davie, LA 131 (954-236-1222); in Jupiter and all Northern Campuses, SR 111F (561-799-8585). Disability services are available for students on all campuses. For more information, please visit SAS website at [www.fau.edu/sas/](http://www.fau.edu/sas/).

### **Counseling and Psychological Services (CAPS) Center**

*Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU's Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to <http://www.fau.edu/counseling/>*

### **Academic Integrity Policy**

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the university mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see [University Regulation 4.001](#).

The WHC Academic Honors Code is found here: <http://www.fau.edu/honors/academics/honor-code.php>.

### **Plagiarism**

Plagiarism is the deliberate use and appropriation of another's work without identifying the source and trying to pass off such work as one's own. Any student who fails to give full credit for ideas or materials taken from another has plagiarized. This includes all discussion board posts, journal entries, wikis, and other written and oral presentation assignments. Plagiarism is unacceptable in the University community. Academic work must be an original work of your own thought, research, or self-expression. When students borrow ideas, wording, or organization from another source, they must acknowledge that fact in an appropriate manner. If in doubt, cite your source.

### **COVID-19 Statement**

*All students in face-to-face classes are required to wear masks during class, and students must sanitize their own workstations upon entering the classroom. Taking these measures supports the safety and protection of the FAU community. Students who do not adhere to these rules will be asked to leave the classroom and/or be removed from the course. Students experiencing flu-like symptoms (fever, cough, shortness of breath), or students who have come in contact with an infected person should immediately contact FAU Student Health Services (561-297-3512).*