

MAS-2103 Matrix Theory

Syllabus - Spring 2020 (001 CRN-10820)

Instructor: Dr. Shi Bai	CRN: 10820
Office: SE 230	Office hours: Tue & Thu 2 - 3 pm; and by appointment
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Lecture Time: Tue & Thu 12:30 pm - 1:50 pm.	Lecture Room: General Classroom South, Room 102.

Prerequisite: MAC 2233 or MAC 2281 or MAC 2311

Credits: 3

Textbook: Elementary Linear Algebra: Applications Version, by Howard Anton & Chris Rorres, 11th Edition, Wiley.

The online learning system “WebAssign” is NOT required for this class.

Catalog Description: Matrix Theory is the entry point to Linear Algebra. We will study systems of linear equations and their solutions. Topics covered include vectors and vector spaces, linear transformations and matrices, rank and determinants, systems of linear equations, diagonalization, and eigenvalues, eigenvectors.

Objectives, Learning Outcome Goals: We will study the fundamental theory of linear systems. We will develop both conceptual and computational understanding. Upon successful completion of the course the student will be able to solve problems in the following areas and achieve the quantitative skills required for courses requiring matrix theory:

- 1. work with matrices
- 2. solve system of linear equation
- 3. understand vectors and vector spaces

- 4. evaluate determinants
- 5. find eigenvalues and associated eigenvectors of matrices

IFP General Education Outcomes:

- Knowledge in several different disciplines;
- The ability to think critically;
- The ability to communicate effectively;
- An appreciation for how knowledge is discovered, challenged, and transformed as it advances; and
- An understanding of ethics and ethical behavior.

Information available at

<http://www.fau.edu/deanugstudies/NewGeneralEdCurriculum.php>

Evaluation

The evaluation consists of quizzes, three mid-exams and a final exam.

1. Homework

Every week there will be a few homework exercises (available on the course website). They will not be handed-in or graded. However, I strongly suggest you to do all of them carefully: each Thursday when there is no exam, there will be a 10-15 minutes quiz on these homework exercises: the quiz questions will be taken from the assigned homework exercises of the sections covered in the previous week.

2. Quizzes

There will be one short quiz on the weeks when there is not an exam. As aforementioned, the quiz usually comes from last week's homework questions. The will make up 20% of the course grade. There are 10 quizzes in total. Only the best 7 quizzes will be taken into account, the other will be dropped and no make-up or early quizzes will be given (except a university-excused absense).

3. Exams

Exams: There will be 2 midterm exams (in class), each worth 20% of the final course grade, and a cumulative final exam worth 40% of the course grade. **No books, notes, or calculators will be allowed during exams.**

4. Attendance:

Regular attendance during lecture, quizzes, exams is expected. To minimize disruption to the learning environment, students will be expected to arrive on time and remain until the end of class.

Grade Distribution

Quizzes	20%
Mid-exams x 2	20% x 2 = 40%
Final Exam	40%

Grading Scale

A: 90-100%	B: 80-83.99%	C: 60-69.99%
A-: 87-89.99%	B-: 77-79.99%	D: 50-59.99%
B+:84-86.99%	C+:70-76.99%	F: 0-49.99%

* The grade of I (incomplete) can only be given under the conditions specified in the “Incomplete Grades” section of the FAU Catalog, and supporting documentation will be required.

Course Policies

Make-up exams and quizzes: There will be no make-up exams except in the case of an excused absence (documentation is required). You must inform me at least one week in advance if possible about any absence requiring a make-up exam. A missed quiz will result in a score of 0, with no possible make-up. The only exception is any quiz missed due to a university-excused absence; such quizzes may be made up.

Incomplete grades: A grade of I (incomplete) will only be given under certain conditions and in accordance with the academic policies and regulations put forward in FAU's University Catalog. A request for an incomplete grade has to be made in writing with supporting documentation, where appropriate.

Classroom Etiquette Policy: University policy on the use of electronic devices states: "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.*" Please refer to the FAU Student Code of Conduct available at the link:

<http://www.fau.edu/artsandletters/new-pdfs/4.007.Student%20Code%20of%20Conduct.pdf>

Disability Policy Statement: In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodation 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, Davie, and Jupiter -- however, disability services are available for students on all campuses. For more information, please visit the SAS website at <http://www.fau.edu/sas/>.

Code of Academic Integrity Policy Statement: 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 at the link:

http://www.fau.edu/regulations/chapter4/4.001_Code_of_Academic_Integrity.pdf

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/>

FREE MATH TUTORING for FAU students:

The MLC provides the following FREE academic support services for FAU students:

1. Drop-in tutoring in the SAM LAB (Succeed At Methods) in GS207 during all hours of operation
 - a. ALL METHODS TUTORING is done in the SAM Lab except on Sundays. On Sundays, please visit the MLC as the SAM Lab is closed.
 - b. Monday – Thursday: 9am – 6pm and Friday: 9am – 4pm
2. Drop-in tutoring in the MLC GS211 during all hours of operation
 - a. Monday – Thursday: 9am – 6pm, Friday: 9am – 4pm, and Sunday: 1pm – 5pm
3. Small group tutoring by appointment
 - a. Appointments can be made in TutorTrac. Go to <https://tutoring.fau.edu> and log in with your FAU ID and password and click on ‘Search for Availabilities.’ For Center, choose SAM Lab for Methods of Calculus and Math Learning Center for everything else. Choose your Section (Class) and click ‘Search.’ Choose your time and then click ‘Save.’ If there are no appointments listed for your course, please email mlc@fau.edu and request an appointment.
4. Online tutoring in specific courses via Skype for Business
 - a. Find scheduled times and courses here: <http://www.math.fau.edu/mlc/remote/index.php>