SEMINOLE STATE COLLEGE
OF FLORIDA

Linear Algebra Syllabus
MAS 2103, Summer 2019, June 24 - July 26

Course & Faculty Information

Lecturer: TBA
E-mail: TBA
Time: Monday through Friday
Teaching hours: 45 (1.8 contact hours each day)
Office hours: 2 hours（According to the teaching schedule）
Credits: 3

Course Description

This is a survey course of introductory linear algebra. Fundamental concepts of linear algebra and matrix theory are introduced. Topics in the course include vectors, matrices, determinants, linear transformations, systems of linear equations, eigenvalues, eigenvectors, and their applications.

Textbook Information

Linear Algebra and Its Applications, 5th Edition, David C. Lay. ISBN: 9780321982384

Grading Scale:

Quizzes	20%
In class activities	10%
Exams	40%
Final Exam	30%

Letter Grades will be assigned as follows:

Percent Score in the Class	Letter Grade
90% - 100%	A
80% - 89%	B
70 – 79%	C
60 – 60%	D
< 60%	F

Borderline grades will be determined by a student's score on the final exam.

Assessments:

- **Quizzes** : A short quiz will be given daily to record attendance and to ensure that students are keeping up with the assigned homework. These daily quizzes will be based on the homework assigned from the previous class. *Three quiz scores will be dropped at the end of the summer term.*

- **In class activities:** In Week 1 and Week 3, Friday you will be given a few short problems to work in groups during the class. These activities comprise 10% of your overall.

- **Exams**: There will be three exams, **Exam #1 (7/6)**, **Exam #2 (7/20)**, and a cumulative **final exam (7/26)**

- **Homework**: Homework from the textbook will be assigned for each lecture. Students are expected to complete each homework assignment and are encouraged to work together on these assignments. The homework itself will not be graded, but problems from the homework assignment will be given on the daily quizzes.

Summer 2018 Class Schedule

WEEK ONE

Monday: 1.1-1.2 Systems of linear equations and Row Reduction and Echelon Forms and Vector Equations

Tuesday: 1.2-1.4 Row Reduction and Echelon Forms and Vector Equations; Vector Equations and the matrix equation $Ax = b$

Wednesday: 1.4&1.5 the matrix equation $Ax = b$ and Solutions sets of Linear Systems

Thursday: 1.7&1.8 Linear Independence and Introduction to Linear Transformations

Friday: Review & in class activity

WEEK TWO

Monday: 1.9 Matrix of a linear transformation

Tuesday: 2.1-2.2 Matrix Operations and the inverse of a matrix

Wednesday: 2.2-2.3, 2.5 Inverse of a matrix, characterizations of invertible matrices and matrix factorization

Thursday: 2.5, 2.8-2.9 Matrix factorization, the Leontief input-output model, Subspaces of R^n, and dimension and rank

Friday: **EXAM #1 (Ch. 1 & Sections 2.1 – 2.3)**

WEEK THREE

Monday: 3.1 & 3.2 Introduction to determinants and properties of determinants

Tuesday: 3.3 & 4.1Cramer's rule, volume and linear transformations, and vector spaces and subspaces

Wednesday: 4.2 & 4.3 Null spaces, column spaces, linear transformations, and linearly independent sets and bases

Thursday: 4.5 & 4.6 the dimension of a vector space and Rank

Friday: Review & in class activity

WEEK FOUR:

Monday: 4.7 & 5.1 Change of basis, Eigenvalues, and eigenvectors

Tuesday: 5.2 the characteristic equation

Wednesday: 5.3 Diagonalization

Thursday: 5.4&5.5 Eigenvectors and linear transformations, and complex eigenvalues,

Friday: EXAM #2 (2.8 – 2.9 , Ch. 3, 4.1 –4.3, 4.5 - 4.7, 5.1 – 5.3)

WEEK FIVE:

Monday: 6.1, 6.2 Inner product and orthogonality

Tuesday: 6.3, 6.4 Orthogonality sets and orthogonality projects, Gram-Schmidt process

Wednesday: Final exam review

Thursday: **FINAL EXAM (Comprehensive)**

Friday: Final Exam solutions and further discussions

Academic Integrity

As members of the Seminole State College of Florida community, students are expected to be honest in all of their academic coursework and activities.

Academic dishonesty, such as cheating of any kind on examinations, course assignments or projects, plagiarism, misrepresentation and the unauthorized possession of examinations or other course-related materials, is prohibited.

Plagiarism is unacceptable to the college community. Academic work that is submitted by

students is assumed to be the result of their own thought,   research or self-expression. When students borrow ideas, wording or organization from another source, they are expected to acknowledge that fact in an appropriate manner. Plagiarism is the deliberate use and appropriation of another's work without identifying the source and trying to pass-off such work as the student's own. Any student who fails to give full credit for ideas or materials taken from another has plagiarized.

Students who share their work for the purpose of cheating on class assignments or tests are subject to the same penalties as the student who commits the act of cheating.

When cheating or plagiarism has occurred, instructors may take academic action that ranges from denial of credit for the assignment or a grade of "F" on a specific assignment, examination or project, to the assignment of a grade of "F" for the course. Students may also be subject to further sanctions imposed by the judicial officer, such as disciplinary probation, suspension or dismissal from the College.

SEMINOLE STATE COLLEGE
OF FLORIDA

Selected Studies in Mathematics Syllabus
MAC 1931, Summer 2019, June 24 - July 26

Course & Faculty Information

Course :MAC 1931 Selected Studies in Mathematics- Linear Algebra- MAS 2103

Lecturer: TBA
E-mail: TBA
Time: Monday through Friday
Contact Hours: 15 (50minutes each)
Office Hours: 2 hours
Credit: 1

Course Description

This is an optional study component for the students taking MAS 2103 Linear Algebra. Students will be assigned small projects that use the techniques taught during the class. Topics include designing highway junctions, very basic quantum mechanics, internet security and cryptography and/or applications to biological and medical sciences.

Textbook Information

There is no additional text book for this module. However, instructor will provide relevant notes and guidelines.

Grading Scale:

There will be 3 projects and each worth 100 points. Students collecting 80% or higher will be considered as successful in this optional module.

Percent Score in the Class	Letter Grade
90% - 100%	A
80% - 89%	B
70 – 79%	C
60 – 60%	D
< 60%	F

Assessments:

*On **7/4, 7/11** and **7/18** you will be assigned research projects about the topics that were covered during the week. These are interesting real life applications.Your work will be collected at the beginning of the class on **Monday.** Your solutions are expected to be written with mathematical rigor and every step must be justified.*

Summer 2019 Class Schedule

07/04: Selected Study Project 1. Due date is 07/08

07/11: Selected Study Project 2. Due date is 07/15

07/18: Selected Study Project 3. Due date is 07/22

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