COURSE SYLLABUS

Course Title:	Linear Algebra	**Date submitted:**	1/26/17 AAC: 17-06
Department:	Mathematics/Science		
Curriculum:	Mathematics		

Course Descriptors:
Make certain that the course descriptors are consistent with college and Board of Trustees policies, and the current course numbering system.

Course Code: (eg. ACC 101)	MAT*272
Course Type:	D/L

A: Clinical B: Lab D: Distance Learning
I: Individual/Independent L: Lecture N: Internship
M: Seminar P: Practicum U: Studio
X: Combined Lecture/Lab Y: Combined Lecture/ Clinical/Lab Z: Combined Lecture/Studio

Elective Type:	G/LAS/M

AH: Art History E: English FA: Fine Arts G: General
HI: History HU: Humanities LA: Liberal Arts
FL: Foreign Language M: Math S: Science
SS: Social Science

Credit Hours:	3
Developmental: (yes/no)	No
Contact Hours: Lecture:	3
Clinical:	0
Lab:	0
Studio	0
Other:	0
TOTAL:	
Class Maximum:	30
Semesters Offered:	F/Sp

Prerequisites:

C- or better in Calculus II (MAT*256)

Corequisites:

None

Other Requirements:

none

Catalog Course Description:

Provides a substantial introduction to linear algebra from a mathematical viewpoint. Major topics include linear systems, linear transformations, matrices, determinants, vector spaces, eigenvalues, diagonalization, inner products, and orthogonality. This course will include a study of mathematical proof and requires mature abstract reasoning abilities.

Topical Outline:
List course content in outline format.

1. Solving systems of linear equations using matrices
2. Operations on matrices including addition, multiplication, inverses, and determinants
3. Vector spaces, eigenvalues, eigenvectors, and linear transformations
4. Orthogonality and symmetric matrices

Outcomes:
Describe measurable skills or knowledge that students should be able to demonstrate as evidence that they have mastered the course content.

Upon successful completion of this course, the student will be able to do the following:

1. perform the basic operations (addition and multiplication) on matrices and be able to find matrix inverses and determinants
2. solve a system of equations using row reduction and inverse matrices
3. use matrices to represent vector spaces and use linear transformations and eigenvectors accurately

	4. use dot products to determine orthogonality and be able to compute the least squares 5. apply these skills to various types of applications
	PROGRAM: *(Numbering reflects Program Outcomes as they appear in the college catalog)* **N/A**
	GENERAL EDUCATION: *(Numbering reflects General Education Outcomes as they appear in the college catalog)* **7. Quantitative Reasoning -**Students will learn to recognize, understand, and use the quantitative elements they encounter in various aspects of their lives. Students will develop a habit of mind that uses quantitative skills to solve problems and make informed decisions. **Demonstrates**: Interprets numerical information and applies sufficient laws of logic and mathematics to solve problems using numbers, symbols, graphs and/or descriptions. **Does Not Demonstrate:** Misinterprets numerical information or insufficiently applies laws of logic and mathematics to solve problems using numbers, symbols, graphs and/or descriptions. relevant theories, laws, and concepts to analyze or explain scientific information.
Evaluation: List how the above outcomes will be assessed.	**Assessment will be based on the following criteria:** Homework Quizzes Tests
Instructional Resources: List library (e.g. books, journals, on-line resources), technological (e.g. Smartboard, software), and other resources (e.g. equipment, supplies, facilities) required and desired to teach this course.	**Required:** N/A **Desired:** N/A
Textbook(s)	Determined by instructor