



CHIPOLA COLLEGE

COURSE SYLLABUS

Chipola's website: www.chipola.edu

COURSE TITLE:

Applied Linear Algebra

COURSE NUMBER:

MAS 3105

COURSE DESCRIPTION (with prerequisites):

This course provides a thorough treatment of linear algebra using a matrix-oriented approach. Major topics include: matrices, systems of linear equations, linear transformations, determinants, eigenvectors and eigenvalues, vector spaces and subspaces, inner product spaces, and orthogonality. Prerequisite: MAC 2312
4 credit semester hours

NAME(S) OF INSTRUCTORS:

Dr. Irma Cruz-White

EFFECTIVE ACADEMIC YEAR:

2015-2016

REQUIRED TEXTBOOKS AND INSTRUCTIONAL SUPPLIES:

Linear Algebra And Its Applications, Fourth Edition, by David C. Lay. Pearson Education Inc. 2012.
ISBN 10: 0-321-38517-9
ISBN 13: 978-0-321-38517-8

GRADING POLICY:

The standing of a student in each course is expressed by one of the following letters and corresponding grading system:

A – 90 – 100

B – 80 – 89

C – 70 – 79

D – 60 – 69

F – 59 or less

The Chipola Catalog provides policies and procedures regarding the grading system. A student's Grade Point Average is derived from the grading system/quality point scale.

ATTENDANCE AND WITHDRAWAL POLICIES:

Chipola College expects regular attendance of all students. Students who are absent from classes for any reason other than official college activities must satisfy the instructor concerned that the absence was due to illness or other clearly unavoidable reasons. Otherwise, the student may suffer grade loss at the discretion of the instructor. Chipola policy allows each instructor to specify in the Instructor First Day

Handout whether or not an absence is excusable and what affect the absence or tardy may have on the grade.

A student is allowed to repeat a course a maximum of three (3) times. **On the third attempt a student (1) must bear the full cost of instruction (unless waived by Student Services), (2) cannot withdraw, and (3) must receive a grade.**

MAKE-UP POLICY:

Chipola allows each instructor to specify in the Instructor First Day Handout the makeup policy.

ACADEMIC HONOR CODE POLICY:

Students are expected to uphold the Academic Honor Code. Chipola College's Honor Code is based on the premise that each student has the responsibility to (1) uphold the highest standards of academic honesty in his/her own work; (2) refuse to tolerate academic dishonesty in the college community; and (3) foster a high sense of honor and social responsibility on the part of students. Further information regarding the Academic Honor Code may be found in the Chipola Catalog, Student Governance section.

STUDENTS WITH DISABILITIES POLICY:

Chipola College is committed to making all programs and facilities accessible to anyone with a disability. Chipola's goal is for students to obtain maximum benefit from their educational experience and to effectively transition into the college environment. Students with disabilities are requested to voluntarily contact the Office of Students with Disabilities to complete the intake process and determine their eligibility for reasonable accommodations.

LIBRARY AND ON-LINE REFERENCE MATERIALS:

The library is a comprehensive learning resource center providing information in print, electronic, and multimedia format to support the educational objectives of the College. On-line catalogs, e-books and electronic databases can be accessed by using the *LINCCWeb* icon on the Chipola Library website at www.chipola.edu/library. If you have questions about database usage consult the "How to Use the Chipola Databases" on the Library website or call the Library at 850/718-2274 during regular hours. Library hours are posted each semester at the building entrance and on the Library website. See your Instructor First Day Handout for individual instructor recommendations and resources.

TECHNOLOGY RESOURCES:

The college's learning management system is **Canvas**. Classes become available on Canvas on the first day of the semester. It is the student's responsibility to log onto the Canvas system the first day of class to establish the first day of attendance and to check announcements. All official class communication must be through Canvas. For further information, contact your instructor or the Director of eLearning. The Canvas support hotline is available online in live chat and on the phone, toll-free, at 855-308-2812 for any issues in accessing or utilizing Canvas. The **Information Technology**

Center, located in the library, is equipped with computer workstations. Lab hours are posted each semester at the building entrance and on the Library website.

FREE TUTORING RESOURCES:

The Academic Center for Excellence (**ACE**) Lab, located in Building L, offers free tutoring from 8 a.m. to 5 p.m. and is equipped with computer workstations. ACE lab hours are posted each semester at the room entrance and on the website. Additionally, Chipola College has contracted **Smarthinking**, a Pearson Company, for online tutoring services, accessible especially from 5 p.m. to 8 a.m. and weekends. Smarthinking can be accessed through Canvas.

ELECTRONIC DEVICE USAGE STATEMENT:

Classrooms should be free of all unnecessary distractions from the task of learning. Therefore, as a general rule, students should silence and avoid use of all electronic devices (laptops, phones, tablets, etc.) not being used for coursework. Consult first-day handouts for any specific policies related to the use of electronic devices in the classroom, as they may vary depending upon the nature of the course or the guidelines of the instructor. Faculty reserve the right to regulate the use of electronic devices and their accessories in class.

DISCIPLINE SPECIFIC COMPETENCIES / LEARNING OUTCOMES:

ED Outcome 1: Demonstrate understanding of instructional design and lesson planning by applying concepts for human development and learning theories.

ED Outcome 2: Demonstrate ability to maintain a student-centered learning environment that is safe, organized, equitable, flexible, inclusive, and collaborative.

ED Outcome 3: Demonstrate effective instructional delivery and facilitation by utilizing deep and comprehensive knowledge of exceptional student education.

ED Outcome 4: Demonstrate understanding of assessment by analyzing and applying data from multiple assessments to diagnose learning needs and inform instruction.

ED Outcome 5: Demonstrate continuous improvement by designing purposeful goals to strengthen instructional effectiveness and impact student learning.

ED Outcome 6: Demonstrate professional responsibility and ethical conduct and fulfill expected obligations to students, the public, and the education profession.

LINKING COURSE-LEVEL STUDENT LEARNING OUTCOMES WITH DISCIPLINE-SPECIFIC COMPETENCIES AND ASSESSMENT METHODS

STUDENT LEARNING OUTCOMES FOR MAS 3105	NCTM Standards Secondary Mathematics	Florida Competencies and Skills: Mathematics 6-12	Assignments
Candidates will perform operations on vectors and matrices.	Standard 1a: A.1.4	2.6, 2.9	UT, H, PS
Candidates will demonstrate the ability to solve systems of linear equations by the use of augmented matrices, using the inverse of a matrix or by using Cramer's rule.	Standard 1a: A.2.5	1.5	UT, H, PS
Candidates will gain knowledge on linear transformations, determinants, linearly independent set of vectors and how to relate them to systems of linear equations.	Standard 1a: A.2.5, A.3.2		UT, H, PS
Candidates will get an understanding on vector spaces, subspaces, eigenvectors, eigenvalues, inner product spaces and orthogonality.	Standard 1a: A.2.5		UT, H, PS
Candidates will learn how to formulate linear algebra problems to real-world situations by studying applications to linear systems and linear models in business, science and engineering.	Standard 1a: A.1.4, A.2.5, A.6.4	1.5	H, PS

**** Assessment Codes**

T = Tests Pre/Post = Pre- and Post-Tests OT = Objective Tests UT = Unit Tests Q = Quizzes F = Final Examination CF = Cumulative Final EX = Departmental Exam SE = Nat'l or State Standardized Exam	RPT = Report/Presentation SP = Skills Performance SD = Skills Demonstration W = Writing Assignments E = Essays DE = Documented Essays RP = Research papers J = Jury R = Recital	Proj. = Projects Exp. = Experiments Cap. Proj. = Capstone Project Cap. Course = Capstone Course Prac. = Practicum Intern. = Internship H = Homework PS = Problem Solving DB = Discussion Board	BO = Behavioral Observation Clin. = Clinicals CS = Case Study CP = Case Plan Port. = Portfolio Obs. = Teacher Observation Sk. Check = Skills Check-off Curriculum Frameworks JP = Judged Performance/Exhibition
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MEANS OF ACCOMPLISHING STUDENT LEARNING OUTCOMES:

- Teacher facilitated: The teacher will be leading class discussions on the material contained in the text during class periods.
- Student-centered: The students will take notes, practice solving problems, and make several presentations during class periods.

- Office Hours: The instructor will be available during office hours for individual assistance.

ASSIGNMENT AND/OR COURSE OUTLINE

GRADE DISTRIBUTION:

4 Unit Tests **4/6**
Final Examination **1/6**
Homework **1/6**

COURSE OUTLINE:

Unit 1: Sections 1.1 – 1.6

Unit 2: Sections 1.7 – 1.10, 2.1 – 2.5

Unit 3: Sections 2.7 – 2.9, 3.1 – 3.3, 4.1 – 4.3

Unit 4: Sections 4.4 – 4.7, 5.1 – 5.5

Unit 5: Sections 6.1, 6.2, 6.4, 6.7, 7.1, 7.4

Final Examination: Cumulative material from Unit 1 through Unit 5.

See your Instructor First Day Handout for individual instructor assignment schedule.