

MAT 280-MST1 (2024FA) Course Syllabus

Course Information

Delivery Method: Traditional¹

Class Location(s)/Day(s)/Time(s):

- Monday: Tice Building 109 106 from 12:30 p.m. – 2:10 p.m.
- Wednesday: Tice Building 109 from 12:30 p.m. – 2:10 p.m.

Institutional Credit Hours/Contact Hours: 3 Credit, 2 Class, 2 Lab

Prerequisites: Please refer to the Mitchell Community College Catalog for more information.

No Show Date (Census Date): 08/28/2024

Faculty Information

Instructor: Ethan A. Smith, MA, MEd

Email Address: esmith3@mitchellcc.edu

Response Time: Mr. Smith will reply to emails and phone calls within 36 hours Monday through Friday. During the weekends, holidays, and institutional closing, response times may be increased due to lack of access to technology.

Phone Number: (704) 878-3270

Office Location: VB 212A

Available for Student Support:

- Mondays, 12 p.m. – 12:30 p.m. in VB 106 (Statesville Campus)
- Tuesdays, 12:30 p.m. – 2:30 p.m. in VB212A (Statesville Campus)
- Wednesdays, 12 p.m. – 12:30 p.m. in Tice 109 (Mooresville)
- Thursdays, 12:30 p.m. – 2:30 p.m. in the Library (Mooresville Campus)

College Reception Desks:

- Statesville Campus: (704) 878-3200
- Mooresville Campus: (704) 663-1923

Catalog Description

This course provides an introduction to linear algebra topics. Emphasis is placed on the development of abstract concepts and applications for vectors, systems of equations, matrices, determinants, vector spaces, multi-dimensional linear transformations, eigenvectors, eigenvalues, diagonalization and orthogonality. Upon completion, students should be able to demonstrate understanding of the theoretical concepts and select and use appropriate models and techniques for finding solutions to linear algebra-related problems with and without technology.

¹This course utilizes synchronous teaching technology (i.e. Zoom) to provide in-person lectures in two locations simultaneously.

Learning Management System (LMS)

All curriculum courses have a space on Mitchell Community College's learning management system (LMS). The College's LMS is Moodle, which is hosted by Open LMS. Moodle is the college-wide adopted delivery portal for online course content. The College's Moodle site can be accessed from the My Mitchell page on the Mitchell Community College website or at <https://mycourses.mitchellcc.edu> by direct link.

Learning Outcomes

- SLO1:** Use analytical and graphical representations to apply vector operations in multiple dimensions.
- SLO2:** Solve systems of linear equations using multiple manual and technology-based methods; these methods will include but are not limited to Gaussian and Gauss-Jordan Elimination.
- SLO3:** Use eigenvalues, eigenvectors, and diagonalization to solve problems in appropriate situations.
- SLO4:** Use matrix operations and linear transformations to solve problems in appropriate situations.
- SLO5:** Apply orthogonal projections and orthogonal complements of subspaces to appropriate situations.
- SLO6:** Use the fundamental concept of a basis for a subspace to give a precise definition of dimensions and rank.
- SLO7:** Use the fundamental concept of a basis for a subspace to solve problems in appropriate situations.
- SLO8:** Use CAS technology to analyze various applications.
- SLO9:** Use CAS technology to solve various applications.
- SLO10:** Use results from CAS technology to interpret various applications.
- SLO11:** Apply quantitative reasoning to solve problems.

Recommendations for Success

The definition of success can mean something different depending on the course. If you show up and engage with the material from the course, I will work with you to guide you to the goals and kinds of success you are wanting to achieve.

Significant prior knowledge in algebra techniques and will greatly help your understanding and mastery of the material. It is also beneficial to have a solid grasp of basic arithmetic and how algorithms work.

Below are some other recommendations for success in an online course from The Ohio State University and the University of Colorado Boulder that may be helpful advice for this course. However, this is **not** an online course.

1. Familiarize yourself with the technology.
2. Hold yourself accountable
3. Create a schedule and manage your time wisely.
4. Stay organized and be thorough.
5. Remain engaged throughout the whole course.
6. Take care of yourself.
7. Know where to turn for help.

Required Textbook and Other Materials

Textbook

Textbook: Larson, R. (2017). *Elementary Linear Algebra*. Cengage Learning.

(Note that a hard copy version of the textbook is optional, since it is available in electronic format with purchase of a WebAssign Access Code.)

Optional (Free) Resources

- Open Source Linear Algebra Textbook
- MIT OpenCourseWare Linear Algebra Lectures

Calculator

Physical Graphing Calculator: TI-83/84 Plus family (or less) is recommended. Students may not use a calculator with a computer algebra system (CAS) built into the calculator.

Desmos Graphing Calculator: Students in this section of MAT-273 are allowed to use the Desmos Graphing Calculator and the Desmos 3D Graphing Calculator during their assignments and during Calculator Active portions of their Midterm Exam and Final Exam.

WebAssign

You must purchase access to WebAssign. See the Assignment Description of this syllabus for more information about WebAssign.

Teaching and Learning Strategies

Mitchell uses Contextual Teaching and Learning (CTL) to enhance student learning through activities that connect academic concepts to relevant life experiences.

Learning Environment

The course is held in-person in the assigned classroom locations at Mitchell Community College's Statesville and Mooresville campuses. Students are required to attend in-person classes in the room corresponding to their registered section as indicated in Self-Service. The instructor is split between the two campus. On Mondays, the instructor will be on the Statesville Campus and on Wednesday the instructor will be on the Mooresville Campus.

Technology Requirements and Resources

For information on Technology Requirements, visit the Mitchell Community College Technology Requirements and Expectations webpage ([opens in a new window](#)).

Grading

Grading Scale

| Numeric Grade | Letter Grade |
|---------------|--------------|
| 90-100% | A |
| 80-89% | B |
| 70-79% | C |
| 60-69% | D |
| 0-59% | F |

Grading Breakdown

Your grade is based on the following weighted categories and corresponding percentages.

- Homework (10%)
- Quizzes/Labs (15%)
- Chapter Tests (50%)
- Final Exam (25%)

Assignment Descriptions

A brief description of assignments is provided below. Detailed information and requirements will be provided in class and/or online within the Learning Management System (LMS).

Homework. All homework assignments will be given through WebAssign. WebAssign is a fully customizable online instructional system empowering teachers to deploy assignments, assess individual student performance instantly, and achieve their teaching goals. Developed in 1997 and commercially available from 1998 under the guidance of founder and CEO Dr. John Risley, a physics education specialist. Students in this section of MAT-272 will access WebAssign through the specific links the LMS. Your grade on these assignments are automatically provided by the software and uploaded to the Gradebook of the LMS. Homework assignments must be completed by the due date, which should be no later than the date of the unit/chapter test to receive full credit. Students are able to receive 75% credit on any Homework problems completed after the due date. The final submission date for Homework assignments is the Last Day of Classes.

Quiz/Labs: Students should expect quiz questions to be any combination of multiple choice and/or free response. Any calculator with a computer algebra system such as a TI-89 or TI-Inspire will not be allowed on quizzes. Lab assignments may be individual or group work. All written assignments should be neat and legible.

Tests: Students should expect tests to be administered in class. Some tests may have a take-home portion. If necessary, special circumstances may warrant a test to be given online through WebAssign. Tests will include multiple choice and/or free response questions as well as calculator and/or non-calculator questions. Note that any calculator with a computer algebra system such as a TI-89 or TI-Inspire will not be allowed on tests.

Final Exam: Students should expect the Final Exam to be administered in class during the last week of the course. The Final Exam will be cumulative and may include multiple choice and/or free response questions as well as calculator and/or non-calculator questions. Note that any calculator with a computer algebra system such as a TI-89 or TI-Inspire will not be allowed on the Final Exam.

Missed Work

Any assignments not completed by the due date is considered late. See Late Work policy.

Late Work

There are no make-ups for assessments of learning — i.e., labs, quizzes, or tests — unless arrangements are made with the instructor prior to the due date. Prior arrangements, except for extreme, extenuating circumstance, is considered to be 24 hours before the due date of the assignment for which an extension is being requested. In most cases, request for extensions after a due date will not be granted.

Faculty Feedback and Response Time

Grading and Feedback

For most assessments, you can generally expect feedback within seven days. The only exception to this feedback/response time would be when an institutional holiday occurs.

Feedback on your WebAssign will be automatically generated by the software. If you are unclear why you missed a problem, you should reach out to your instructor.

Feedback on all handwritten assignments such as in-class labs, quizzes, and tests will be handwritten and returned either in class or electronically via the Learning Management System.

Attendance Policy

Mitchell Community College is an attendance taking institution. Instructors in all curriculum courses are required to report student attendance. Attendance begins on the first scheduled day of a course, even for students who register late. Mitchell Community College recognizes the connection between student attendance and student retention, achievement, and success. Students are expected to attend all class sessions, clinical experiences, and laboratory periods for which they are enrolled. Absence from any of these learning experiences, regardless of cause, reduces the opportunity for learning and may adversely affect a student's achievement.

Students are responsible for class attendance and for any class work missed during an absence. The instructor's policy on make-up work must be clearly stated in the class syllabus. Obtaining and making up missed work is the student's responsibility.

When a student fails to comply with the attendance policy of the class or fails to attend for two consecutive weeks (14 consecutive calendar days), the instructor should process an administrative withdrawal for the student resulting in a grade of W.

Mathematics Department Attendance Policy for Traditional Courses

If a student fails to attend class for 14 consecutive calendar days, then they will be withdrawn from the course.

Defining Traditional Attendance

A student is considered to be in compliance with the Mathematics Department Attendance Policy for Traditional Courses if they physically come to the specified time and location of the specific section in which they are registered.

Mitchell Community College Inclement Weather Policy

In the event of adverse weather, the College will announce delays, cancellation of classes, or the closing of the college on local television and radio stations and on the College website.

No Show Date/Census Date Policy

In order to remain enrolled in a course, a student must attend class on or before the class census date. If a student does not attend class by the census date, they will be reported as a **“no show” (NS)** by the instructor and will be automatically withdrawn from the course. To ensure students attend class and avoid being marked as a “no show”, students need to:

- For traditional 100% seated classes, a student must be physically present in class on or before the class census date.
- For blended or hybrid classes, a student must either complete the Mandatory Course Enrollment Activity (MCEA) in the LMS or physically be present in class on or before the class census date.
- For 100% online classes, a student must complete the MCEA in the LMS on or before the class census date.

If a student does not meet the census date requirement, the student must be reported as a no-show for the class. Students reported as a “no-show” are withdrawn from the class. The no show date and the census date are the same date for a course and can be found on the course syllabus as well as on the Office of Student Records webpage (link opens in a new window). For blended, hybrid, and online courses this date is also noted in the MCEA.

Withdrawal Policy

The last day a student can withdraw from a course or from all courses with a grade of “W” is at the 75 percent point of the course. The exact date is published on the Academic Calendar (link opens in new window). After the 75 percent point of the course, the student can no longer initiate a withdrawal and will receive the grade earned in the course at the end of the term. Students can locate withdrawal information by visiting the Office of Student Records webpage or the Schedule Adjustments and Class Withdrawals page. If they need to withdraw from **all** of their classes they can click on the “Withdrawal Procedure” menu link (links opens in a new window).

Academic Dishonesty

Mitchell Community College makes every reasonable effort to maintain integrity in all academic programs. To compromise integrity through acts of academic dishonesty jeopardizes the quality of instruction and the caliber of education we aim to provide our students. Any form of academic dishonesty, by any student at the College, is unacceptable and will result in disciplinary action.

Definitions and Examples of Academic Dishonesty include, but may not be limited to:

Cheating: Intentionally and/or knowingly using unauthorized materials, information, or study aids in any academic exercise or matter.

Plagiarism: Intentionally and/or knowingly representing the words or ideas of another as one’s own in any academic exercise or matter.

Fabrication: Intentionally and/or knowingly falsifying or inventing information or citations in an academic exercise or matter.

Facilitating Academic Dishonesty: Intentionally and/or knowingly helping or attempting to help another to commit an act of cheating, plagiarism, or fabrication.

Self-Plagiarism: The use of one’s own previous work in another context without citing that it was used previously. The writer should let the reader know that this was not the first use of the material.

Tentative Schedule

A tentative schedule of due dates for all assessments of learning are posted in the LMS. Dates, assigned readings and/or assessments are subject to change. The instructor will notify students of any change through email and the Announcements

section of the Learning Management System (LMS) class site.