

## MATH 230 Intro to Linear Algebra, Section 1

Class Times: TWRf, 2:00 – 2:50, Sci A208

Instructor: Daniel Harnett

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Office Hours (usually right before class time): M 11:00 - 12:00, T Rf 1:00 – 1:50, or by appt.

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### Course Description:

4 cr. Topics in linear algebra; systems of linear equations, Gauss-Jordan elimination, linear combinations and linear independence, linear transformations, vector spaces and subspaces, matrix algebra, determinants, bases of null spaces and column spaces, eigenvalues and eigenvectors, inner products and orthogonal projections with selected applications.

**Note:** This course was formerly known as MATH 213

### Required Materials:

1. **Text:** [Linear Algebra and its Applications](#), 5th Ed. by Lay, Lay and McDonald.
2. **Calculator:** TI-83, TI-83+, TI-84, or TI-84+ recommended. Something with a Matrix function will be helpful. Cellphone calculators and in general calculators that communicate with other calculators are NOT allowed during tests.
3. **Computer access:** You are expected to have access to your UWSP email and CANVAS account at UWSP. You should check your email regularly for announcements. Grades and homework assignments will be posted on the CANVAS page. Other computer software will be discussed in class. This can be accessed at University computer labs.

**Course Learning Outcomes:** This course is about “matrix math” and is required for all Math majors (Physics too). It includes a variety of concepts and techniques that will be used in higher-level mathematics course, especially MATH 310/315, 320, 327 and 356/357. By the end of the course, students will be able to do at least the following:

- Perform common vector and matrix operations such as addition, scalar multiplication, multiplication and transposition
- Recognize and use equivalent forms to identify matrices and solve linear systems
- Recognize and use equivalent statements regarding invertible matrices and solutions of homogeneous systems
- Understand the definition and properties of an abstract vector space

**Attendance:** You are expected to attend every class. In general, this is a course in which you cannot afford to miss a class. If you are absent, for any reason, it is your responsibility to talk with others who were present and get notes from them. You are responsible for making sure that you have copies of all materials distributed in class, announcements made in class, and content covered in class. If you miss an exam (DON'T!), it is YOUR responsibility to contact the instructor ASAP.

**Homework:** There will be a written homework once a week, due on Fridays. Homework may be turned in on paper at class time, or submitted online. For written assignments, you should write a complete solution to each problem, bare answers without support will receive no credit. Late homework will not be accepted without the instructor’s permission. You may work on the homework with others, but each student must write and turn in their own complete assignment. It is allowed and expected that you will use a computer for some homework problems.

**Quizzes:** There will be unannounced quizzes about once per week. They will be easy and are at least partly an attendance device. If you miss a quiz, do not worry. Missed quizzes will not be made up, but at least 2 low grades will be dropped.

**Exams:** There will be three exams during the semester, plus a final exam. The exam dates and content will be announced in class well in advance. The first exam will probably be on Friday, February 18.

**Final Exam:** There will be a 2-hour Final Exam on Thursday, May 19 at 12:30 pm.

**Grade Calculation:**

Homework	20%
Quizzes	10%
3 Exams	45%
<u>Comprehensive Final Exam</u>	<u>25%</u>
Total	100%

Grades for each assignment and exam will be recorded on your Canvas page. Questions about individual grades must be addressed within one week from the day the paper is returned to you. Do not believe the Canvas grade calculations, it sometimes computes things in strange ways. Your Final grade at the end of the semester will be posted in acceSPoint.

Your letter grade will be assigned based on the following scale:

A: 93-100%	A - : 90-92%	B+: 87-89%
B: 83-86%	B-: 80-82%	C+: 77-79%
C: 73-76%	C- : 70-72%	D+: 67-69%
D: 60-66%	F: 59 % or less	

The above table is a minimum guide, the instructor may make positive adjustments at the end of the semester.

**Help Available:**

INDIVIDUAL TUTORING: TLC

STUDY GROUPS: Meet with your peers on a regular basis; Free

INSTRUCTOR OFFICE HOURS: See office hours, above.

**Academic Integrity:** You should be fully aware of your rights and responsibilities as a UWSP student. These are detailed in the UWSP Community Bill of Rights and Responsibilities found at [https://www.uwsp.edu/dos/Documents/UWS\\_14.docx](https://www.uwsp.edu/dos/Documents/UWS_14.docx)

Information regarding Section 504 of the Rehabilitation Act or the Americans with Disabilities Act can be found at the UWSP Disability and Assistive Technology Center site <https://www.uwsp.edu/datc>

**Religious Beliefs:** Students' sincerely held religious beliefs will be reasonably accommodated with respect to all examinations and other academic requirements. According to UWS 22.03, you must notify the instructor within the first three weeks of classes about specific dates which require accommodation. See the link below: [https://www.uwsp.edu/dos/Documents/UWS\\_CHAPTER\\_22.docx](https://www.uwsp.edu/dos/Documents/UWS_CHAPTER_22.docx)