

Math 265 Linear Algebra I

Michael A. Lundin

Central Washington
University Department of
Mathematics 400 East 8th
Avenue Ellensburg, WA
98926-7424 Bouillon Hall
Room 108B Phone: (509)
963-1398

e-mail: e-Mail Mike Lundin

Web:

<http://www.cwu.edu/~lundin/>

Office Hours

MTThF 11:00-12:00

If you cannot meet during
this time, we can make
arrangements to meet at
another time.

Course Philosophy

Linear Algebra is the study
of vector spaces, their
linear transformations, the
invariants of linear
transformations, and linear
models. In this course
students will investigate
each of these four major
notions.

Calculators

A graphing calculator is
required for this class. The
Texas Instruments TI-83 (+)
is recommended, although
other graphing calculators
may work. If you decide to
use a calculator other than
the TI-83, you are
responsible for knowing
how to use its features! If
you desire help with it,
make sure you read the
matrix section of the
instruction book first and
bring the book with you.

Homework

Homework must be handed
in on time:

Course Content

Week 1-Matrices and
Systems of Equations

Sections 1.1-1.2

Week 2-Matrices and
Systems of Equations

Sections 1.3-1.4

Week 3- Matrices and
Systems of
Equations/Determinants

Sections 2.1-2.3

Week 4-Vector Spaces

Sections 3.1-3.2

Test 1 (material through week
3)

Week 5-Vector Spaces

Sections 3.3-3.4

Week 6-Vector Spaces

Sections 3.5-3.6*

Week 7-Linear
Transformations

Sections 4.1-4.2

Test 2 (material through week
6)

Week 8-Linear
Transformations/Orthogonality

Sections 4.3, 5.1

Week 9-Orthogonality

Sections 5.2, 5.4,
5.5

Week 10-Eigenvalues

Sections 6.1, 6.3

Week 11-Comprehensive
Final Exam

Content and Process Learner Outcomes

Through assignments, quizzes, exams, and in-class work, students will demonstrate knowledge of content and process objectives that include the following:

- Solving and interpreting the solutions for homogeneous and non-homogeneous systems of linear equations.
- Modeling real-world phenomena with vectors, vector spaces, spaces of linear transformations.
- Making connections among numeric, symbolic, and graphical representations of vectors, vector spaces, subspaces, and linear transformations.
- Choosing and calculating bases to best represent physical phenomena.
- Choosing and calculating eigenspaces and interpreting the results.
- Using technology to solve systems of equations and interpreting the given solutions.
- Solving a system of equations by the in the most efficient manner.
- Using various matrix decomposition and diagonalization schemes.

Performance Learner Outcomes

Through assignments, quizzes, and exams, and in-class work, students will demonstrate knowledge of content and process objectives that include the following:

- | Problem-Solving | Group Work | Writing and Communication |
|--|--|--|
| <ul style="list-style-type: none"> · Working on extended problems · Using diverse methods to solve problems · Using questioning and generalization in solving problems · Modeling real-world phenomena | <ul style="list-style-type: none"> · Working cooperatively · Sharing ideas · Dividing tasks effectively among group members | <ul style="list-style-type: none"> · Reading and understanding complex problems · Summarizing the essential ideas of a problem · Describing methods used to approach a problem · Expressing solutions in written |

3pts: Exemplary

Complete, Neat,
and On Time

mathematically.

and verbal form
· Evaluating and
improving the
quality of written
work.

2pts: Proficient

Partially
Incomplete, Not
Completely
Neat, Late

1pt: Unsatisfactory

Marginal
Completeness,
Marginal
Neatness, More
Than One Class
Late

0 pt: Missing

Not Turned In,
Copied

Assessments	Percent of Final Grade	Final Point Distribution	Final Grade
Homework	10%	93-100%	A
Quizzes	20%	90-92%	A-
Midterm Exams	2 x 20%	87-90%	B+
Final Exam	30%	83-86%	B
		80-82%	B-
		77-79%	C+
		73-76%	C
		70-72%	C-
		67-69%	D+
		63-66%	D
		60-62%	D-
		Below 60%	F