

Course Change Request

Date Submitted: 08/31/26 1:39 pm

Viewing: **MATH 464 : Linear Algebra with Data Applications**

Last approved: 04/29/26 5:06 am

Last edit: 09/25/26 2:13 pm

Changes proposed by: skhankan

Catalog Pages
referencing this
course

- [Department of Mathematical Sciences](#)
- [Mathematics \(MATH\)](#)

Select modification type:

- Simple
- Substantial

In Workflow

1. **MATH Chair**
2. **SC Curriculum Committee**
3. SC Assistant Dean
4. Assoc Provost- Undergraduate
5. Registrar-Courses
6. Banner

Approval Path

1. 09/01/26 6:04 pm
Maria Emelianenko (memelian):
Approved for MATH Chair

History

1. May 25, 2021 by Catherine Sausville (csausvil)
2. Mar 7, 2026 by Catherine Sausville (csausvil)
3. Apr 29, 2026 by Jennifer Bazaz Gettys (jbazaz)

Are you completing this form on someone else's behalf?

No

Effective Term: Spring 2027

Subject Code:

MATH - Mathematics

Course Number:

464

Bundled Courses:

Is this course replacing another course? No

Equivalent Courses:

Catalog Title: Linear Algebra with Data Applications

Banner Title: Linear Algebra with Data App

Will section titles vary by semester? No

Credits: 3

Schedule Type: Lecture

Hours of Lecture or Seminar per week: 3

Repeatable: May be only taken once for credit, limited to 3 attempts (N3)

Max Allowable Credits: 9

Default Grade Mode: Undergraduate Regular

Recommended Prerequisite(s):

Recommended Corequisite(s):
Math 322

Required Prerequisite(s) / Corequisite(s) (Updates only):
CS 112 or CS 109

Registrar's Office Use Only - Required Prerequisite(s)/Corequisite(s):

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
	(	CS 112	C	UG		
Or		CS 112	XS	UG	)	

Registration Restrictions (Updates only):

Registrar's Office Use Only - Registration Restrictions:**Field(s) of Study:****Class(es):****Level(s):****Degree(s):****School(s):****Catalog****Description:**

Structure of linear spaces and the operator algebra, duality, invariants, Jordan and singular value decompositions, spectral theorem. Rigorous derivation of foundational data science/artificial intelligence (AI) methods such as PCA, MDS, and SVM. Computational and analytic assignments are given.

Justification:

What: Updating pre-reqs/co-reqs

Why: CS 108-109 is a sequence that is equivalent to CS112

Does this course cover material which crosses into another department? Yes

**Impacted
Departments:**

Department
CS - Computer Science
CDS - Computational & Data Sciences
STAT - Statistics

Learning Outcomes:

Will this course be scheduled as a cross-level cross listed section?

Attach Syllabus

[464-syllabus_May12final.pdf](#)

**Additional
Attachments**

**Specialized Course
Categories:**

Have you reached out to the Libraries to determine whether there are adequate resources to support your course? If not, please email Meg Meiman, Associate University Librarian for Learning, Research, and Engagement at mmeiman2@gmu.edu.

**Additional
Comments:**

**Reviewer
Comments**

Key: 17201