Course Change Request

Date Submitted: 08/31/26 1:36 pm

Viewing: MATH 462 : Mathematics of Machine Learning and Industrial Applications I

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

Last edit: 09/25/26 2:11 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. 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: 462

Bundled Courses:

Is this course replacing another course? No

Equivalent Courses:

Catalog Title: Mathematics of Machine Learning and Industrial Applications I

Banner Title: Math of ML and Indust App I

Will section titles vary by semester? No

Credits: 2

Schedule Type: Lecture

Hours of Lecture or Seminar per week: 2

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

Max Allowable Credits: 6

Default Grade Mode: Undergraduate Regular

Recommended Prerequisite(s):

Recommended Corequisite(s):

Required Prerequisite(s) / Corequisite(s) (Updates only):

Math 203 and Math 213 and (CS 112 or CS 109) ~~112~~

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

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
	(					
	(	MATH 203	C	UG		
Or		MATH 203	XS	UG	)	
And		MATH 213	C	UG		
Or		MATH 213	XS	UG	)	
And	(	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:

Basic mathematical optimization and probability theory in the context of classical learning and gradient based methods including neural networks used in artificial intelligence (AI). Incorporates modern tools such as Python, shell tools, and version control. Includes industrial applications in satellite imagery, physics, biology and engineering. Computational and analytic assignments are given.

Justification:

What: Updating pre-reqs/co-reqs.

Why: CS 108-109 is a sequence that is equivalent to CS 112

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

Impacted Departments:

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

Learning Outcomes:

Stated on attached syllabus.

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

Attach Syllabus

462-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: 17199