

MATH49 : Math Independent Study

General Information

Author:	<ul style="list-style-type: none">Suzanne Palermo
Course Code (CB01) :	MATH49
Course Title (CB02) :	Math Independent Study
Department:	MATH
Proposal Start:	Fall 2024
TOP Code (CB03) :	(1701.00) Mathematics, General
CIP Code:	(27.0101) Mathematics, General.
SAM Code (CB09) :	Non-Occupational
Distance Education Approved:	No
Will this course be taught asynchronously?:	No
Course Control Number (CB00) :	CCC000415683
Curriculum Committee Approval Date:	10/25/2023
Board of Trustees Approval Date:	12/19/2023
Last Cyclical Review Date:	10/25/2023
Course Description and Course Note:	<p>MATH 49 provides motivated students with an opportunity to explore a mathematical subject in greater depth than usual, to familiarize students with some basic research techniques, to interest students in possible career areas, and to take advantage of special academic interests. Emphasis shall be on individual mathematical projects, research, and presentations. There is no prescribed course content. Students develop a portfolio or research project, have it approved by the sponsoring instructor and appropriate division chairperson, then submit or present the finished product. Note: Registration is open to any student at GCC who is currently registered for 6 or more units and who is admitted to Independent Study by the instructor. A student is limited to one Independent Study per semester, and no more than 12 units credit toward the AA Degree or Certificate, and no more than 6 units per division. The units received may be acceptable for college transfer subject to the approval of the individual college. This course may be taken 3 times; a maximum of 9 units may be earned.</p>
Justification:	Mandatory Revision
Academic Career:	<ul style="list-style-type: none">Credit

Academic Senate Discipline

Primary Discipline:	<ul style="list-style-type: none">Mathematics
Alternate Discipline:	
Alternate Discipline:	

Course Development

Basic Skill Status (CB08)

Course is not a basic skills course.

Allow Students to Gain Credit by Exam/Challenge

Course Special Class Status (CB13)

Course is not a special class.

Pre-Collegiate Level (CB21)

Not applicable.

Grading Basis

- Grade with Pass / No-Pass Option

Course Support Course Status (CB26)

Course is not a support course

Transferability & Gen. Ed. Options

General Education Status (CB25)

Not Applicable

Transferability

Transferable to CSU only

Transferability Status

Approved

Units and Hours

Summary

Minimum Credit Units (CB07) 1

Maximum Credit Units (CB06) 3

Total Course In-Class (Contact) Hours 54 - 162

Total Course Out-of-Class Hours 0 - 0

Total Student Learning Hours 54 - 162

Credit / Non-Credit Options

Course Type (CB04)

Credit - Degree Applicable

Noncredit Course Category (CB22)

Credit Course.

Noncredit Special Characteristics

No Value

Course Classification Code (CB11)

Credit Course.

Funding Agency Category (CB23)

Not Applicable.

Cooperative Work Experience

Education Status (CB10)

Variable Credit Course

Weekly Student Hours

	In Class	Out of Class
Lecture Hours	0	0
Laboratory Hours	3 - 9	0
Studio Hours	0	0

Course Student Hours

Course Duration (Weeks)	18
Hours per unit divisor	54
Course In-Class (Contact) Hours	
Lecture	0

Laboratory	54 - 162
Studio	0
Total	54 - 162

Course Out-of-Class Hours

Lecture	0
Laboratory	0
Studio	0
Total	0

Time Commitment Notes for Students

No value

Pre-requisites, Co-requisites, Anti-requisites and Advisories

Co-Requisite

Concurrent registration in 6 or more units

AND

Advisory

MATH103E - Calculus & Analytic Geometry I

Objectives

- Find limits of functions at real values and at infinity using numerical, graphical, and algebraic approaches.
- compute derivatives using differentiation formulas: constants, power rule, product rule, quotient rule and chain rule. Calculate higher order derivatives.
- Evaluate integrals using the Fundamental Theorem of Calculus.

Entry Standards

Entry Standards

Varies with subject area choice.

Specifications

Methods of Instruction

Methods of Instruction Collaborative Learning

Methods of Instruction Lecture

Methods of Instruction	Laboratory			
Methods of Instruction	Discussion			
Methods of Instruction	Independent Study			
Methods of Instruction	Presentations			
Out of Class Assignments <ul style="list-style-type: none"> • Research project • Portfolio of completed research projects (e.g. proving relevant theorems) • Reading assignments (e.g. reading articles related to assigned area of mathematics) • Homework (e.g. problem sets related to assigned reading) 				
Methods of Evaluation	Rationale			
Other	Discussions			
Presentation (group or individual)	Presentations			
Project/Portfolio	Portfolio evaluations			
Textbook Rationale No Value				
Textbooks				
Author	Title	Publisher	Date	ISBN
No Value	No Value	No Value	No Value	No Value
Other Instructional Materials (i.e. OER, handouts)				
Description	To be determined by Instructor and discipline field.			
Author	No value			
Citation	No value			
Online Resource(s)	No value			
Materials Fee No value				

Learning Outcomes and Objectives

Course Objectives

Conduct independent discipline-specific research activities.

Demonstrate a specific in-depth knowledge in the discipline involved.

SLOs

Apply concepts and knowledge of discipline-specific materials to research projects, essays, and other assignments.

Expected Outcome Performance: 70.0

ILOs Analyze and solve problems using critical, logical, and creative thinking; ask questions, pursue a line of inquiry, and derive conclusions;
Core cultivate creativity that leads to innovative ideas.

ILOs

Use quantitative and/or analytical mathematical skills to solve problems and to interpret, evaluate, and process information and data to draw logical conclusions and support claims.

Additional SLO Information

Does this proposal include revisions that might improve student attainment of course learning outcomes?

No

Is this proposal submitted in response to learning outcomes assessment data?

No

If yes was selected in either of the above questions for learning outcomes, explain and attach evidence of discussions about learning outcomes.

No Value

SLO Evidence

No Value

Course Content

Lecture Content

No value

Laboratory/Studio Content

Research project (54-162 hours)

Total hours: 54-162