

**I. CATALOG INFORMATION**

- A. Discipline: MATHEMATICS
- B. Subject Code and Number: MATH M122
- C. Course Title: Independent Study - Mathematics

- D. Credit Course units:  
 Units: 0.5 – 3  
 Lecture Hours per week: 0  
 Lab Hours per week : 1.5 – 9  
 Variable Units : No

- E. Student Learning Hours:  
 Lecture Hours:  
 Classroom hours: 0 - 0  
 Laboratory/Activity Hours:  
 Laboratory/Activity Hours 26.25 - 157.5  
**Total Combined Hours** in a 17.5 week term: 26.25 - 157.5

- F. Non-Credit Course hours per week \_\_\_\_\_

- G. May be taken a total of:  1  2  3  4 time(s) for credit

- H. Is the course co-designated (same as) another course: No  Yes   
 If YES, designate course Subject Code & Number: \_\_\_\_\_

- I. Course Description:

Allows independent study for students who wish to extend their knowledge of a particular area of Mathematics through research and study. Utilizes an approved independent project. Includes one-on-one work with instructor.

- J. Entrance Skills

\*Prerequisite: No  Yes  Course(s)  
Completion of one course in Mathematics and instructor approval.

\*Corequisite: No  Yes  Course(s)  
 \_\_\_\_\_

Limitation on Enrollment: No  Yes   
 \_\_\_\_\_

Recommended Preparation: No  Yes  Course(s)  
 \_\_\_\_\_

Other: No  Yes   
 \_\_\_\_\_

- K. Other Catalog Information:

Interested students should contact a Mathematics instructor for assistance in developing a contract for learning about a specific topic. Formerly MATH M22A/B. Transfer credit: CSU; UC (determined after admission).

## II. COURSE OBJECTIVES

Upon successful completion of the course, a student will be able to:

		<b>Methods of evaluation will be consistent with, but not limited by, the following types or examples.</b>
1	apply the knowledge acquired to other aspects of mathematics.	Successful completion of a course project, i.e., research paper, presentation, or written work. Evaluation methods will be determined by the instructor in consultation with the student.
2	formulate statements designed to assess the applicability of their knowledge to other related topics.	Successful completion of a course project, i.e., research paper, presentation, or written work. Evaluation methods will be determined by the instructor in consultation with the student.
3	analyze new data and conduct further research to assess the accuracy of their information and findings.	Successful completion of a course project, i.e., research paper, presentation, or written work. Evaluation methods will be determined by the instructor in consultation with the student.

## III. COURSE CONTENT

Estimated %	Topic	Learning Outcomes
<b>Lecture</b> (must total 100%)		
<b>Lab</b> (must total 100%)		
100.00%	Project content and specific topics will be determined by the student in consultation with the supervising faculty member.	1, 2, 3

## IV. TYPICAL ASSIGNMENTS

### A. Writing assignments

Writing assignments are required. Possible assignments may include, but are not limited to:
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1	projects to be determined in conversations between the instructor and the student.
2	develop a research plan with the faculty member that encompasses at least one of the fields of mathematics (e.g., real analysis, abstract algebra, topology, complex analysis).

**B. Appropriate outside assignments**

Appropriate outside assignments are required. Possible assignments may include, but are not limited to:

1	projects to be determined in conversations between the instructor and the student.
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**C. Critical thinking assignments**

Critical thinking assignments are required. Possible assignments may include, but are not limited to:

1	projects to be determined in conversations between the instructor and the student.
2	projects selected will allow students to demonstrate their critical thinking skills, the analysis of abstract concepts, and a transition from the concrete to the abstract in mathematical thinking.

**V. METHODS OF INSTRUCTION**

Methods of instruction may include, but are not limited to:

- Distance Education – When any portion of class contact hours is replaced by distance education delivery mode (Complete DE Addendum, Section XV)
- Lecture/Discussion
- Laboratory/Activity
- Other (Specify)  
The specific methods to be used will be determined by the supervising faculty member in consultation with the student.
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- Optional Field Trips
- Required Field Trips

**VI. METHODS OF EVALUATION**

Methods of evaluation may include, but are not limited to:

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Essay Exam                      | <input checked="" type="checkbox"/> Classroom Discussion    | <input checked="" type="checkbox"/> Skill Demonstration |
| <input checked="" type="checkbox"/> Problem Solving Exam | <input checked="" type="checkbox"/> Reports/Papers/Journals | <input checked="" type="checkbox"/> Participation       |
| <input type="checkbox"/> Objective Exams                 | <input checked="" type="checkbox"/> Projects                | <input checked="" type="checkbox"/> Other (specify)     |

Evaluation methods will be determined by the instructor in consultation with the student.

**VII. REPRESENTATIVE TEXTS AND OTHER COURSE MATERIALS**

Specific books, articles, mathematical journals, etc., used will be determined by the supervising faculty member in consultation with the student.

### VIII. STUDENT MATERIALS FEES

No  Yes

### IX. PARALLEL COURSES

College	Course Number	Course Title	Units
City College of San Francisco	MATH 199	Special Topics in Mathematics	3
Oxnard College	MATH R199	Directed Studies in Math	1-3
Fullerton College	MATH 299 F	Mathematics Independent Study	1
Santa Monica City College	MATH 88A	Independent Studies in Mathematics	1
Ventura College	MATH V90	Directed Studies in Mathematics	1-6

### X. MINIMUM QUALIFICATIONS

#### Courses Requiring a Masters Degree:

Master's degree in mathematics or applied mathematics OR bachelor's degree in either of the above AND master's degree in statistics, physics, or mathematics education OR the equivalent.

### XI. ARTICULATION INFORMATION

#### A. Title V Course Classification:

1. This course is designed to be taken either:

- Pass/No Pass only (no letter grade possible); or  
 Letter grade (P/NP possible at student option)

2. Degree status:

Either  Associate Degree Applicable; or  Non-associate Degree Applicable

#### B. Moorpark College General Education:

1. Do you recommend this course for inclusion on the Associate Degree General Education list?

Yes:  No:  If YES, what section(s)?

- A1 - Natural Sciences - Biological Science  
 A2 - Natural Sciences - Physical Science  
 B1 - Social and Behavioral Sciences - American History/Institutions  
 B2 - Social and Behavioral Sciences - Other Social Behavioral Science  
 C1 - Humanities - Fine or Performing Arts  
 C2 - Humanities - Other Humanities  
 D1 - Language and Rationality - English Composition  
 D2 - Language and Rationality - Communication and Analytical Thinking  
 E1 - Health/Physical Education  
 E2 - PE or Dance  
 F - Ethnic/Gender Studies

#### C. California State University(CSU) Articulation:

1. Do you recommend this course for transfer credit to CSU? Yes:  No:
2. If YES do you recommend this course for inclusion on the CSU General Education list?  
 Yes:  No:  If YES, which area(s)?  
 A1  A2  A3  B1  B2  B3  B4   
 C1  C2  D1  D2  D3  D4  D5   
 D6  D7  D8  D9  D10  E

D. University of California (UC) Articulation:

1. Do you recommend this course for transfer to the UC? Yes:  No:
2. If YES do you recommend this course for the Intersegmental General Education Transfer Curriculum (IGETC)? Yes:  No:

IGETC Area 1: English Communication

- English Composition
- Critical Thinking-English Composition
- Oral Communication

IGETC Area 2: Mathematical Concepts and Quantitative Reasoning

- Mathematical Concepts

IGETC Area 3: Arts and Humanities

- Arts
- Humanities

IGETC Area 4: Social and Behavioral Sciences

- Anthropology and Archaeology
- Economics
- Ethnic Studies
- Gender Studies
- Geography
- History
- Interdisciplinary, Social & Behavioral Sciences
- Political Science, Government & Legal Institutions
- Psychology
- Sociology & Criminology

IGETC Area 5: Physical and Biological Sciences (mark all that apply)

- Physical Science Lab or Physical Science Lab only (none-

sequence)

- Physical Science Lecture only (non-sequence)
- Biological Science
- Physical Science Courses
- Physical Science Lab or Biological Science Lab Only (non-sequence)
- Biological Science Courses
- Biological Science Lab course
- First Science course in a Special sequence
- Second Science course in a Special Sequence
- Laboratory Activity
- Physical Sciences

IGETC Area 6: Language other than English

- Languages other than English (UC Requirement Only)
- U.S. History, Constitution, and American Ideals (CSU Requirement ONLY)
- U.S. History, Constitution, and American Ideals (CSU Requirement ONLY)

**XII. REVIEW OF LIBRARY RESOURCES**

A. What planned assignment(s) will require library resources and use?

The following assignments require library resources:  
 Research projects using the Library's print and online resources.

B. Are the currently held library resources sufficient to support the course assignment?

YES:  NO:

If NO, please list additional library resources needed to support this course.

**XIII. PREREQUISITE AND/OR COREQUISITE JUSTIFICATION**

Requisite Justification for Completion of one course in Mathematics and instructor approval.

- A. Sequential course within a discipline.
- B. Standard Prerequisite or Corequisite required by universities.
- C. Corequisite is linked to companion lecture course.
- D. Prerequisite or Corequisite is authorized by legal statute or regulation.  
Code Section: \_\_\_\_\_
- E. Prerequisite or Corequisite is necessary to protect the students' health and safety.

F. Computation or communication skill is needed.

G. Performance courses: Audition, portfolio, tryouts, etc. needed.

**XIV. WORKPLACE PREPARATION**

MATH M122: Not Applicable

**XV. DISTANCE LEARNING COURSE OUTLINE ADDENDUM**

MATH M122: Not Applicable

**XVI. GENERAL EDUCATION COURSE OUTLINE ADDENDUM**

MATH M122: Not Applicable

**XVII. STUDENT MATERIALS FEE ADDENDUM**

MATH M122: Not Applicable

**XVIII. REPEATABILITY JUSTIFICATION TITLE 5, SECTION 55041**

MATH M122: Not Applicable

**XIX. CURRICULUM APPROVAL**

Course Information:

Discipline: MATHEMATICS

Discipline Code and Number: MATH M122

Course Revision Category: Technical Course Revision

Course Proposed By:

Originating Faculty: Christine Aguilera 02/15/2013

Faculty Peer: Kahroliné Maria di Passero 02/15/2013

Curriculum Rep: Kathryn Fink 02/18/2013

Department Chair: Christine Cole 02/15/2013

Division Dean: Julius Sokenu 03/03/2013

Approved By:

Curriculum Chair: Mary Rees 04/09/2013

Executive Vice President: Jane Harmon 03/24/2013

Articulation Officer: Letrisha Mai 03/20/2013

Librarian: Mary LaBarge 03/13/2013

Implementation Term and Year: Fall 2013

Approval Dates:

Approved by Moorpark College Curriculum Committee: 04/02/2013

Approved by Board of Trustees (if applicable): 04/02/2013

Approved by State (if applicable): 04/11/2013