

MATH 461, 462 Senior Project

1. Catalog Description

MATH 461, 462 Senior Project I, II (2) (2)

Selection and completion of a project under faculty supervision. Projects typical of problems which graduates must solve in their fields of employment. Project results are presented in a formal report. Minimum 120 hours total time. **MATH 461** Prerequisite: MATH 459. **MATH 462** prerequisite: MATH 461.

2. Required Background or Experience

Math 459. Senior standing in the university.

3. Learning Objectives

- a. Ability to reduce a general problem to specific points of analysis.
- b. Ability to organize points of analysis into a logical sequence.
- c. Ability to apply competencies acquired in other courses to the successful completion of a specific project.
- d. Ability to obtain information necessary to the solution of a problem by library study, experimentation, and/or correspondence and personal contact with individuals who have had experience in the field.
- e. Ability to follow a work proposal without overlooking any major points or significant details.
- f. Ability to organize, illustrate, and write a clear, concise, and correct report of the investigation.
- g. Ability to work for a supervisor who desires quality performance with a minimum of supervision.

4. Text and References

- a. Previously completed senior projects in Kennedy Library on microfiche.
- b. Journals, books, and texts relevant to the topic.

5. Minimum Student Materials

Varies with each project.

6. Minimum University Facilities

Library and computer labs.

7. Content and Method

- a. The student must find a project advisor and work with the advisor to define a project. The project should be of such scope as to require 120 hours to complete.

A student may choose to work with an advisor outside of the Mathematics Department but must first obtain approval from the Math 461/462 course supervisor.

Selection of a topic and a senior project advisor must be made before the last day to add courses for the quarter enrolled.

- b. After selecting a project advisor, the student must enroll in the appropriate section of Math 461.
- c. The student should meet regularly with his/her advisor.
- d. By the end of the fifth week of Math 461, the student must turn in a Senior Project Completion Contract to the Senior Project Coordinator. The contract must be signed by the senior project faculty advisor and the student, and must include a project proposal (see Attachment A), schedule, and plan for completion. The advisor will assign a grade in Math 461 based on the completion of a significant portion of the senior project, as determined by the advisor. The grade of RP will no longer be used in MATH 461.
- e. After the Senior Project Completion Contract is approved, the student continues work on the project. A project draft as close to the completed form as possible (see Attachment B for details on manuscript form) should be submitted to the advisor for comments well before the end of the quarter of enrollment in Math 462. At least one week should be allotted for advisor perusal and one week for recommended changes and corrections.

The student is expected to complete his/her senior project by the end of Math 462. The use of an "I" grade is discouraged. However, if an "I" grade is assigned, a contract must be completed that outlines the terms and deadlines for completion. The "I" contract must be signed by the senior project faculty advisor and the student, and submitted to the Senior Project Coordinator. **Do not count on an advisor's availability during academic holidays, final examination periods, or summer break unless you have made specific arrangements with your advisor.**

- f. After complying with the advisor's recommendations, the student will submit the following items in a 9×12 envelope labeled *Senior Project* to the advisor:
 - i) The corrected final **unbound** report; and
 - ii) A completed Graduate Survey Form (obtained from the Mathematics Department).
- g. The advisor:
 - i) Reads the final report and assigns a grade for both Math 461 and 462. The grade will either be entered on the standard grade roster or on a Grade Change Form, as appropriate.
 - ii) Signs the approval page.
 - iii) Forwards the complete package (including the Graduate Survey Form) to the Mathematics Department Administrative Support Assistant.
 - iv) Specifies whether the project is meritorious (projects deemed meritorious will be submitted to the library).
- h. The department chair checks the correctness and completeness of the submitted package, signs the approval page, and records completion of the project. Projects are then returned directly to the advisor or, if meritorious, forwarded to Kennedy Library for processing.

(Attachment A)

(Student's name is to appear here, typed)

PROJECT PROPOSAL

Math 461, 462

I propose to develop a database that would store information regarding the California condors.

Last spring, the director of the Ventana Wilderness Society, Kelly Sorenson, visited Cal Poly to give a presentation about the problems associated with the restoration of the California condor. One of the main problems he discussed was that the data on these birds is stored in a very complicated manner. Each bird can be referred to in multiple ways. This makes it difficult to make inferences from the data. A simple, straightforward database would greatly facilitate in the derivation of statistics. From these statistics, one may make inferences. Thus, I intend to design a database that would sort through much of the ambiguity. Hopefully, my work will be put to good use by director Sorenson.

Student

Senior Project Advisor

Mathematics Department Chair

Date: _____

GENERAL MANUSCRIPT DETAILS

- A. The following is a suggested list of the various major headings and the order in which they might appear in your report. Individual projects are likely to vary as to the titles of these major headings.

Table of Parts of the Senior Project

Title Page (see page 5)
Approval Page (see page 6)
Abstract
Table of Contents (see page 7)
List of Tables and/or Figures (see pages 8, 9)
Prefatory Material
Introduction
Historical Review
Theory
Materials and Apparatus
Method of Procedure
Results
Discussions
Summary
Appendix
Bibliography

NOTE: Due to variation in content between Senior Projects, all the above parts may not be required for each project. However, the Mathematics Department does require both a title page and an approval page.

- B. Certain conventions regarding margins, numbering, and heading should be observed. Default settings on standard word processing programs for margins and page numbering are acceptable. Consult a standard style manual for information on these conventions. Label and/or number all illustrative materials (graphics, diagrams, etc.) and tables appropriately. Essential explanatory notes are placed below the illustrative materials. If a footnote is necessary, it is used according to standard footnote form, but it should not be separated from the figure or table by a dividing line.

(Sample Title Page)

(TITLE)

by

(Name)

Mathematics Department
California Polytechnic State University
San Luis Obispo
2004

(Sample)

APPROVAL PAGE

TITLE: Daily Sunspot Spectral Analysis

AUTHOR: *(Student's name)*

DATE SUBMITTED: June 2004

Senior Project Advisor

Signature

Mathematics Department Chair

Signature

(Sample)

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(Sample)

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(Sample)

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