Southern Connecticut State University
MAT 498–Seminar in Mathematics

I. **Description**

(A) **Catalog Description**: Student presentation of selected topics in advanced mathematics.

(B) **Expanded Description**: Students will read selected articles from current mathematics journals and will demonstrate their comprehension by making presentations based on their readings. Additionally, students will write about what they have read and will pursue solutions to open questions or continued study relating to something they have read. During the course of their reading and writing, it is intended that students will learn to appreciate the beauty, joy, and challenge in mathematics and experience mathematics as an engaging field with contemporary open questions.

II. **Credit**

(A) MAT 498 carries three (3) semester hours of college credit.

(B) MAT 498 or MAT 488 is required of all mathematics majors in the B.A. in Mathematics program.

III. **Prerequisite**

(A) The prerequisites are senior standing and department permission.

(B) No placement test or skills test is necessary.

IV. **Format**

(A) MAT 498 is a seminar course.

(B) MAT 498 should be offered as a writing-intensive course.

V. **Outline**

During the course, students will do all of the following.

(A) Read articles from mathematical journals with content appropriate for college students.

(B) Use appropriate technology in the investigation of their reading and reports of their findings.

(C) Report on their readings in two ways:

1. by writing summaries of what they have learned that demonstrate their comprehension; and
2. by presenting their findings to the class.

(D) Solve problems related to their readings. These problems may be ones suggested by the articles themselves or designed by the student and instructor based on the reading.

(E) Be encouraged to present their work at a mathematical conference.

VI. **Suggested Journals**

- *Mathematics Magazine*, the Mathematical Association of America
- *College Mathematics Journal*, the Mathematical Association of America

VII. **Goals**

(A) Achieve mastery of a rich and diverse set of mathematical ideas.

(B) Use acquired mathematical skills to undertake independent learning and to be a contributing member of a problem solving team.

(C) Demonstrate the ability to use and understand multiple representations (including graphical, numerical and analytical) of mathematical concepts.

(D) Understand and appreciate connections among different areas of mathematics and with other disciplines.

(E) Utilize appropriate technology to develop models for solving problems and analyzing new situations.

(F) Demonstrate a command of ideas and techniques ranging across single and multivariate calculus, linear algebra, probability and statistics, and possibly other areas.

(G) Develop the ability to read mathematics independently and with understanding.

(H) Develop the ability to communicate mathematical findings in written and oral forms.

VIII. **Outcomes**

Students passing MAT 498 should be able to do each of the following tasks.

(A) Read with understanding articles written for college students.

(B) Communicate mathematics in written form.

(C) Communicate mathematics orally.

(D) Solve problems with little or no guidance.

IX. **Waiver Policy**

There is no waiver policy for MAT 498.

X. **Preparation and Approval**

Prepared on 24 April 2012.

Approved by the MDCC on .

Approved by the department on .

XI. **Preparers**

Prepared by Leon Brin.