

Math 480 – Senior Seminar (2)

**Course Description:** Seminar for senior mathematics majors, including an introduction to methods of research. A significant portion of class time is dedicated to the instruction and critique of presentations. All students are required to give the equivalent of three oral presentations. CR/NC only.

Pre: One 400-level Mathematics course or consent.

**Textbook:** None

**Course Objective:** The course is intended to be a capstone seminar for senior Mathematics majors. Students at UH Mānoa are quite diverse in background, ability, and career objectives. Depending on their interests, they may take a wide variety of specialized courses. The first objective of the seminar is to provide a unifying experience for these students. Through talks by their colleagues and by faculty, the students will be exposed to areas of Mathematics other than the classes they have taken, and to recent developments in the field.

Most undergraduate Mathematics courses provide little opportunity for independent work. The seminar provides an introduction to the methods and tools of mathematical research. Students will be required to write and present short papers on an area of their interest. To equip them for this task, students will be taught how to read a mathematical paper, how to locate results in the literature, and how to write them up, including the use of mathematical typesetting.

**Syllabus:** The instructor has options to choose from and can decide how much time to spend on any one of them. More than one should be chosen. Some options are:

- Presentations that provide an overview of certain topics (such as calculus and linear algebra) in the undergraduate mathematics curriculum.
- Conducting research in mathematics. This includes how to read mathematics, how to find materials related to certain topics and questions in the library or on the web, and how to write and present mathematics.
- Research and follow-up on current events in mathematics.
- Exploration of mathematical careers.

**“O” Focus:** The “O” Focus is an important part of Math 480. Students are expected to learn and gain experience in giving presentations.

**Grading Policy:** Math 480 is graded on a CR/NC basis. Grades will be determined by the assessment of the student’s performance in the course, based on attendance, quality of the

presentations, the final project, and the completion of all three parts of the Mathematics Department Assessment Exam.

**Student Learning Outcomes:** A successful student will:

- learn how to conduct research in Mathematics.
- learn, prepare, deliver, and critique a mathematical presentation.
- gain a global view of some major topics of an undergraduate mathematics education.

**Program objectives:** Exposure to research is one of the stated goals of the department for a major in Mathematics. It will be achieved by requiring the students to attend the Undergraduate Colloquium, and by having students do and present their own research.