

Math 482H - 200      Spring Semester      2006

**“Research Seminar in Math”**

TTh 5:30 - 6:45PM      Blocker 156

**Professor:** Dr. David R. Larson      **Email:** larson@math.tamu.edu

**Office:** 620A Blocker      **Office Hours:** TTh 4:00-5:15P and by appointment

**Course Description** [3 credits]: Topics in one or more area of mathematics including: algebra, analysis, applied math, geometry, topology, and teaching. Introduction to creative mathematical activities. Instruction on preparing and giving oral and written reports. The concept of this course is adaptable to students at several levels of prior academic experience. The course will consist of students working on presentations, giving presentations, writing abstracts for poster sessions and contributed talks at research conferences, writing scholarly papers for existing research projects, and starting new research and other scholarly projects. For students with no prior math research experience, this course will provide pre-REU mentoring, with the goal of leading to participation in a formal summer REU (research experience for undergraduates) at Texas A&M University or another school. For students with prior math research experience, this course will provide post-REU mentoring, including preparation of research talks to be given at student and professional conferences, and preparation of student articles to be submitted for publication in undergraduate research journals. An advanced student will be given the opportunity to start a new direction of creative activity, or to continue work on an existing research project such as a honors thesis.

**Texts:** *Notes will be provided as needed, and books will be loaned as needed.*

**Prerequisites:** Math 222 and either Math 409 or Math 415 (may be taken concurrently); Honors eligibility; Permission of instructor.

**Preparation:** Any student who has taken part in an REU or VIGRE experience will be very well prepared for this course. Students who are not yet ready for such an experience, but who want some preparation for it, and who are willing to do some work on either a project or a presentation of a suggested mathematical topic, are encouraged to take this course.

**Homework:** Some mandatory enrichment homework will be assigned when a new topic is introduced. However, most student work in the course will be project-oriented. For a post-REU student, the submission of a research project for publication in a student or professional journal is strongly encouraged, and may be a major part of the basis for an assigned course grade.

**Talk Sessions:** Class participation may include one or more seminar talks and/or poster presentations in the style of talks given at actual professional research conferences. Participation in Texas A&M University student talk sessions and/or poster sessions is strongly encouraged, and may be part of the basis for an assigned course grade.

**Grading:** Each student is required to complete a written honors project and one or more oral presentations, as well as homework, quizzes, and possibly other writings. The project and presentations may be on an individual or a team basis. The basis for grading will be: Honors Project 30%; Oral and Written Presentations 30%; Homework and Quizzes 20% ; Class Participation and Attendance 20%. Scale: A = 90%, B = 80%, C = 70%, D = 60%.

**Credit:** This course may be taken at most Twice for credit: normally once as a pre-REU student and once as a post-REU student.