



September 2011

MATH 505 Survey of Modern Mathematics

1. Catalog Description

MATH 505 Graduate Teaching Seminar (1) (CR/NC)

Principles and practice in effective teaching of college-level mathematics. Issues related to present and future teaching experiences, including time management, professionalism, student assessment, grading classroom management, and qualities of good mathematics teachers. Reflection on individual teaching, and consideration of improvements in instruction. Credit/No Credit grading only. Total credit limited to 2 units. 1 seminar. Prerequisite: Graduate standing or consent of instructor.

2. Required Background or Experience

Graduate standing or consent of instructor.

3. Learning Objectives

Upon successful completion of this course, students should be able to:

- a. Develop appropriate assessments and determine a fair grading structure for their students.
- b. Describe qualities of effective mathematics instruction in terms of how they influence student learning.
- c. Critically reflect on their teaching of mathematics.
- d. Feel confident in their classroom management and time management abilities.

4. Text and References

Instructor handouts and readings from the following references:

1. Friedberg, S., et al, *Teaching Mathematics in Colleges and Universities: Case Studies for Today's Classroom*, American Mathematical Society and Mathematical Association of America, 2001.
2. National Research Council, *How Students Learn: Mathematics in the Classroom*, The National Academies Press, 2005.
3. Krantz, S., *How to Teach Mathematics: A Personal Perspective*, American Mathematical Society, 1993.

5. Minimum Student Materials

Paper, pencils and notebook.

6. Minimum University Facilities

Classroom with ample chalkboard space for class use.

7. Content and Method

Topics of Discussion

Lectures

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| a. Class organization and planning / coverage of material | 1 |
| b. Discipline | 1 |
| c. Exam writing and grading / possible tools for monitoring student progress during lecture | 2 |
| d. How to handle cheating | 1 |
| e. Promoting student learning and engagement in class, including how to encourage students to ask questions and communicate both verbally and in writing | 1 |
| f. Managing office hours / professionalism | 1 |
| g. Convincing students that mathematics is important | 1 |
| h. Reflection on video-taping experience | 2 |

Method

Credit will be awarded on the basis of attendance and participation in classroom discussions, written assignments and projects. Students will be required to videotape one class meeting of a course they are teaching and submit a written reflection on the video.

8. Methods of Assessment

Attendance, participation, written assignments and projects.