

# MAE 301/501 FOUNDATIONS OF SECONDARY SCHOOL MATHEMATICS

FALL 2009

## Instructor Information

**Instructor:** Lisa Berger

**Office:** Math 4-105

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**Current Office Hours:**

Tuesdays: 5:20-6:20

Thursdays: 5:20-6:20

Office hours may be adjusted to accommodate the instructor's schedule and/or student needs. Students unable to meet during scheduled office hours are encouraged to schedule an appointment with the instructor.

**0.1. General Information.** This is a course in mathematics. We will study many of the topics that are studied in the high school curriculum at an advanced level. One goal of the course is for students to make connections among different areas of mathematics and between high school and advanced mathematics. This course may include new as well as familiar topics; your goal should be to increase your depth of understanding of each topic studied. The main focus of the course will be on mathematical problem solving, proof, and writing mathematics. You should be prepared to work through a lot of problems, prove your results, and write your work clearly and accurately. We will study a range of topics selected from the areas of mathematical logic, algebra, geometry, trigonometry, functions, probability, and statistics.

**0.2. Book Suggestions.** A nice and inexpensive book which may be of use to undergraduates taking this course. is: *Numbers: Rational and irrational*, by Ivan Niven.

**0.3. Course Notes.** There is no required textbook for this course. Instead, course notes will be prepared and distributed by the students throughout the semester, with guidance from the instructor. Each student will be assigned a number of dates to be responsible for taking quality notes on the class discussion and writing them up for distribution. Notes that are not acceptable for class distribution must be re-written by the student in order to earn a grade. Each version of the notes will be considered in assigning a grade, and a late submission will not receive full credit. Contribution to the course notes represents 10% of the final course grade.

Since most class meetings will be assigned, the number of dates per student will depend in part on the number of students in the class. It is the student's responsibility to exchange dates with another student in the case of an unavoidable absence from class.

#### 0.4. Guidelines for Course Notes.

0.4.1. *Deadlines.* Course notes for an assigned class are due at the *next class meeting* for which no exam is scheduled. If editing is necessary then a revised version will be submitted to the instructor at a time determined by the instructor. The student is responsible for distributing a final version to the class.

0.4.2. *Format.* The course notes should be a complete and organized account of the mathematics discussed in class, but you are not required to present topics in the order in which they were covered in class. Indeed, part of the work is in determining the structure of the presentation. Your notes should include any new theorems, definitions, ideas, and examples studied that day. Include also at least one new example and one new question for your classmates. You may choose to answer an open question that came up during class. If some ideas are not yet clear, you may also include questions for the instructor. The instructor may either address these questions directly or suggest sources for further study.

0.4.3. This is an exercise in *writing mathematics*. The final product should be clear and grammatically correct, in addition to mathematically accurate. The course notes are also meant to serve as a resource for students; they must be accurate and complete, so that all students may refer to them for future study.

0.5. **Homework/Class Work/Quizzes.** Homework is an essential component of the course. Homework will be assigned and collected regularly, and selected problems will be graded. Late homework will not be accepted. Announced and/or unannounced quizzes may be given, and there may be assignments completed and collected during class. Students are expected to be present for class, and missed quizzes or classwork may not be completed for credit. The lowest 2 scores in the homework/classwork/quiz category will be dropped.

0.6. **Exams.** There will be three exams. Exam 1 will consist of problems selected from the New York State Regents Exam. Exam 1 is tentatively scheduled for **Thursday, October 2**. Students who do not achieve a score of at least 85% on Exam 1 will have two opportunities to pass a make-up exam. There will be a midterm exam and a final. The midterm is tentatively scheduled for **Thursday, October 22**. The **final exam** is scheduled by the University for **Friday, December 18, 2009** from 11:15 am to 1:45 pm.

0.7. **Final Grades.** In order to earn a grade above  $C-$ , a student must achieve a minimum score of 85% on Exam 1 or on a subsequent make-up exam. For students passing Exam 1 with a minimum score of 85%, the grade is determined as follows:

- (1) Exam 1: 10%
- (2) Homework/Quizzes/Classwork: 15%
- (3) Course Notes: 10%
- (4) Midterm Exam: 30%
- (5) Final Exam: 35%

A student not passing Exam 1 with a minimum score of 85% will not receive above a  $C-$  for the course.

0.8. **Academic Integrity.** Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instance of academic dishonesty to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at [http://www.stonybrook.edu/uaa/academic\\_judiciary/](http://www.stonybrook.edu/uaa/academic_judiciary/).

**0.9. Disability Support Services.** If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact Disability Support Services (631) 632 – 6748 or <http://studentaffairs.stonybrook.edu/dss/>. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to the following website: <http://www.stonybrook.edu/ehs/fire/disabilities/asp>.

**0.10. Critical Incident Management.** Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, and/or inhibits students' ability to learn.