1. Prerequisites

Technical prerequisites for this class—that is, courses whose material you must know before taking this class—are very few. You should be comfortable with algebraic manipulations of equations, most Calculus I and II concepts, and good working ability of sigma notation and sums.

By far the most important qualification for this class is being comfortable with proofs. Many classes will be built around understanding a proof, and the larger homework assignments will involve writing up proofs. (If you are a 6400 student, expect more and more difficult proofs.)

2. Grading

<table>
<thead>
<tr>
<th>Class item</th>
<th>percent of total grade</th>
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<tbody>
<tr>
<td>Homework mini-assignments</td>
<td>10%</td>
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<tr>
<td>Homework mega-assignments</td>
<td>30%</td>
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<tr>
<td>Midterms</td>
<td>30%</td>
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<tr>
<td>Final</td>
<td>30%</td>
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3. Homework

As you will notice, there are two kinds of assignments that will be given out in class.

The smaller “mini-assignments” involve reading from the book plus a few short problems. These assignments will be prep work, covering material that we have not yet covered in class. Don’t worry, the assignments will be short and not based on you fully understanding all that you’ve read. Mini-assignments are graded only on completion, not on being correct. We will spend class either working to a deeper understanding of the material, or extending beyond what Silverman covered in his book. There will be roughly 40 mini-assignments.

The larger “mega-assignments” will be due once every week on Friday, starting on the second week. These will be considerably longer, involve proofs, and be graded on correctness. (Time will determine how many of the problems get graded.) There will be 14 mega-assignments.

A note on collaboration: Not only will working with other students on your homework assignments not be punished, it will be strongly encouraged. My one requirement is that you write up your own homework assignment. No joint hand-ins allowed.

4. Midterms

<table>
<thead>
<tr>
<th>Midterm 1</th>
<th>Friday, Feb. 6</th>
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<tbody>
<tr>
<td>Midterm 2</td>
<td>Friday, March 20</td>
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There will be two midterms during this semester. Midterms will be held in class and last 50 minutes. If you are late to class, you will not be granted additional time to complete your midterm. The second midterm will be somewhat cumulative. It will focus on material covered since the first midterm, but may require definitions and such from before then.
5. **Final**

The final will be roughly the length of two midterms and will be cumulative.

6. **Additional Comments**

- Exceptions to the above rules will be made in the case of extreme circumstances (death in the family, severe illness, etc.).
- If you are unable to make any of the listed office hours but would like to ask me questions one-on-one, we may be able to arrange another time to meet.
- Students with an excessive number of unexcused absences will be dropped from the class. Arriving extremely late or leaving early counts as an unexcused absence.
- Cheating on exams is strictly prohibited and carries severe consequences, up to and including expulsion from the university.
- Calculators, phones, tablets, laptops, or any other computing or communication devices are not permitted on tests. Use of them will be considered cheating.
- If you believe I have graded an exam in error, come see me at the end of the class in which I handed it back. Leaving class with the exam means you accept the grade you have been given.
- And most of all... don’t forget to have fun.

7. **First Homework Assignment**

**Mini-assignment due Jan. 9:** read chapters 1-4. Do the following problems to turn in.

1) Following what was done on page 8, show that the next two primes larger than 37 can be expressed as the sum of two squares.
2) Consider the Pythagorean triple (105, 208, 233). Find the corresponding values of $s$ and $t$ for Theorem 2.1 in this case.
3) Problem 3.1(b).

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*This syllabus is a general guideline for the course. Deviations may be necessary as the semester progresses.*