

University of Toronto Scarborough
COURSE INFORMATION
MATC15 – Introduction to Number Theory

Course homepage:

<http://www.math.toronto.edu/lgoldmak/C15W13/>

Instructor: Leo Goldmakher (I prefer to be called by my first name)

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Office hours: Tuesdays & Thursdays 2:30–4:00; additional office hours by appointment.

Lectures: Tuesdays 12:10–2:00 (in MW 140) & Thursdays 1:10–2:00 (in MW 170)

Textbook: J. Silverman, *A Friendly Introduction to Number Theory*, 4th ed., Pearson.

Syllabus: The first half of the semester will be devoted to classical number theory, including divisibility (and the Euclidean algorithm), modular arithmetic, primitive roots (Gauss' theorem and Artin's conjecture), and the theorem of quadratic reciprocity. In the second half of the term, we will discuss as many of the following topics as time permits: polynomial congruences (RSA), binary quadratic forms (the class number problem), the distribution of prime numbers (the Riemann Hypothesis), and an introduction to algebraic number theory (in particular, the arithmetic of Gaussian and Eisenstein integers).

Marking scheme:

Your mark will be calculated based on several components:

1. Problem sets – 40%

These are to be turned in within the first five minutes of lecture on the due date; late assignments will not be accepted under any circumstances. Your lowest score will be dropped before calculating the contribution to your final mark. Please note that numerical answers alone will not be given any credit, whether or not they are correct; you *must* show work to receive credit. Further note that *the marking scheme for the assignments is determined by the grader*. This means that questions about homework marks should be addressed to the grader, rather than to me.

2. Midterm test – 25%
3. Final exam – 35%

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COMPUTER POLICY

Computers and phones are not to be used at any time in the lecture room, as this is distracting both for you and for your fellow students. If you have something you need to do urgently on your computer or phone, take it outside the classroom and do it there.

TEAM WORK AND PLAGIARISM:

The problem sets in this course will be challenging, and I encourage you to work together on them. However, each student must work out and write up their final solutions individually and independently. Moreover, please **write up your problems sets in physical isolation**.

Although the internet is a great resource, I urge you to use it wisely. In particular, I ask you not to search for the problems appearing on the assignments. **Looking up definitions is OK, looking up (or asking about) problems is not.**

When using ideas which are not your own, please indicate your source. You will *not* be penalized for collaborating with another student unless:

- (1) your work is identical to that appearing elsewhere (again, write up HW in isolation!); or
- (2) you explicitly use an idea without attributing the source.

Both (1) and (2) may have serious consequences. See

<http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize>

for further information.

The academic regulations of the University are outlined in the Code of Behavior on Academic Matters which can be found at

<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>