

MATH 7290: Introduction to Elliptic Curves and Modular Forms Spring 2013

Lectures: Lockett 135, TR 1:30 – 2:50

<b>Professor:</b> Karl Mahlborg	<b>Office:</b> Lockett 228
<b>Office Hour:</b> W 2:00 – 3:00	<b>E-mail:</b> mahlburg@math.lsu.edu
<b>Webpage:</b> <a href="http://www.math.lsu.edu/~mahlburg/teaching/2013-MATH7290.html">www.math.lsu.edu/~mahlburg/teaching/2013-MATH7290.html</a>	

**Website** All important course information, including lecture information, homework assignments, and other announcements will be found on the course website. Please check it frequently!

**Textbook** Neal Koblitz, *Introduction to Elliptic Curves and Modular Forms, Second Edition*, Springer, 1993.

**Content** We will cover material from Chapters 1 – 4 in the textbook, as well as other sources. Topics will include elliptic curves, elliptic functions, elliptic curves over finite fields, L-functions, modular forms, theta functions, Eisenstein series, Hecke operators, Shimura correspondence, arithmetic applications, integer partitions and other combinatorial applications.

Students are also expected to learn basic familiarity with computational software such as SAGE or MAPLE.

**Prerequisites** You must have completed MATH 7210 (Algebra I) and MATH 4036 (Complex Analysis) in order to take this course. An introductory course in number theory (equivalent to MATH 4181) is also recommended.

**Schedule** Due to University holidays, this class will **not** be held on Tuesday, Feb. 12; Tuesday, Apr. 2; or Thursday, Apr. 4. If you are unable to attend the regularly held office hours, you may also schedule an appointment.

**Homework** Homework assignments will be due on most **Thursdays** at the beginning of class (1:30), and will be posted on the course website one week in advance. You are expected to complete the problems as thoroughly as possible, though some questions will be open-ended and/or computational.

**Grading** Your grade will be determined by the successful completion of the weekly homework assignments. Regular attendance and participation during lectures is also expected.

Grade	Standard
A	At least 90% completion of assigned work.
B	At least 80% completion of assigned work.
C	At least 50% completion of assigned work.
D/F	Less than 50% completion.