

Math 1, Lecture 3: Precalculus

Instructor: Kristen Hendricks

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Office Hours: M 11-12, W 2-3, F 10-10:30

This class has three TAs, H. Edward Chou, Robert Hannah, and Yunfeng Zhang. Their e-mail and office hours can be found on the course webpage.

Course Webpage: www.math.ucla.edu/~hendricks/Math1.html . Most course materials will also appear on ccle. We will use the myUCLA gradebook facility to record grades throughout the quarter.

Location and Time: MWF 1-1:50, Humanities A51. There are six sections, meeting Tuesdays and Thursdays, see times and places online.

Content: This course is intended to give you a solid footing in precalculus so that you can continue to take Math 3A or Math 31A. We will cover the idea of a function, linear and polynomial functions with applications to optimization, and inverse, exponential, logarithmic, and trigonometric functions.

Textbook: D. Lippman & M. Rasmussen. *Precalculus: An investigation of functions*. Available online at www.opentextbookstore.com/precalc .

Prerequisites: A score between 16 and 34 inclusive on the Mathematics Diagnostic Test.

Homework & Quizzes: Homework will be assigned weekly and not collected. Instead, there will be a quiz in section every week (excluding the first) consisting of two problems from the previous week's homework. The first quiz will be on 10/14 for the Tuesday sections and 10/16 for the Thursday sections. You must take the quizzes with your assigned section. Note that the Tuesday sections will not meet on 11/11, because of Veteran's Day, and the Thursday sections will not meet on 11/27, because of Thanksgiving. Therefore everyone will take eight quizzes. Your lowest quiz score will be dropped in computing your grade.

Exams: There will be two in-class midterms on **Monday, October 27** and **Friday, November 21**. There will also be a final exam **Monday, December 15, 8:00 a.m.-11:00 a.m.** Make-up exams will only be given in cases of documented illness or family emergency, or religious holidays. Please note that the university requires that a student who misses the final exam without a documented explanation for the absence be given a failing grade in the course.

This course is 28 lectures long, excluding exams. The first midterm will cover the material of approximately Lectures 1-9, the second midterm will cover the material of approximately Lectures 10-19. The final exam will be roughly sixty percent from the material of Lectures 20-28 and forty percent from the preceding lectures. More specific guidance will be given as we approach the exams.

Exams will take place in multiple rooms. The class will be divided up alphabetically by surname according to the registrar listing and told (either in lecture or by e-mail) in which room to take the test. Please pay close attention to these announcements; exams taken in the wrong room will not be graded.

Regrades: Requests for regrades of quizzes and midterms will be considered up to fourteen days after the quiz or midterm is returned, and should be turned in to me in writing (preferably typed) and signed. Please make sure to look over your graded work carefully before the time limit passes.

Grading: Your grade will be computed as follows:

$$(10\% \text{ Quiz grades}) + (25\% \text{ Midterm 1}) + (25\% \text{ Midterm 2}) + (40\% \text{ Final Exam})$$

Letter grades will not be assigned until the end of the quarter, at which point your composite numerical score will be converted into a letter grade based on class ranking, using the department guidelines for a class of this size. Here is an idea of what that means:

- If you have a composite 90% in the class, you are guaranteed an A-, although in actuality the cutoff for an A- will be lowered until about a quarter of the class is getting a grade of A- or above.
- If you have a composite 70% in the class, you are guaranteed a C+, although in actuality the cutoff for a C+ will be lowered until only about a third of the class is getting a grade of C or below.

Enrollment: Enrollment requests should be addressed to the Mathematics Department Undergraduate Advising Office. You can find them in MS 6356, or contact them at ugrad@math.ucla.edu. They will try to help if you are having scheduling trouble.

Questions and Getting Help: For mathematical questions, you are encouraged to come to my or your TA's office hours. You may also find the Student Math Center in MS 3974 helpful. Their hours are here: <http://www.math.ucla.edu/ugrad/smc>.

Because this is a very large course, if you have a logistical question, the best thing to do is to check the syllabus/website, then e-mail or talk to your TA, and then get in contact with me if you still have questions. This helps ensure that at such time as you have an issue that really needs to be dealt with by me, I'll have the attention and time to handle it for you.

Please make sure that any e-mails you send me or the TAs have a signature – because of student privacy concerns, we are very reluctant to answer e-mails if we can't tell who sent them.

Schedule: We will approximately follow the outline at <http://www.math.ucla.edu/ugrad/courses/math/1>. There is a projected schedule on the next page for your convenience.

| Dates | Sections | Topics |
|-------------|-----------------|---|
| 10/2 | 1.1 | Introduction, Functions and Function Notation |
| 10/6-10/10 | 1.2-5 | Domain and Range, Rates of Change, Composition and Transformation of Functions |
| 10/13-10/17 | 1.5-6, 2.1-3 | Inverse Functions, Linear Functions and Graphs, Modelling with Linear Functions |
| 10/20-10/24 | 2.5,3.1-2 | Absolute Value Functions, Power Functions and Polynomials, Quadratic Functions |
| 10/27-10/31 | 3.3-4 | Midterm 1 , Graphs of Polynomial Functions, Rational Functions |
| 11/3-11/7 | 3.5, 4.1-2 | Inverse and Radical Functions, Exponential Functions and Graphs |
| 11/10-11/14 | 4.3-4.5 | Logarithmic Functions and Graphs, Properties of Logarithms |
| 11/17-11/21 | 5.1-3 | Circles and Angles, Sine and Cosine, Midterm 2 |
| 11/24-11/26 | 5.4, 6.1-2 | Trigonometric Functions and Graphs |
| 12/1-12/5 | 6.3-4 | Inverse Trig Functions and Solving Trig Equations |
| 12/9-12/12 | 7.2-3 | Addition and Subtraction Identities, Double and Half Angle Identities |