

Fall 2009 Syllabus for MATH 1155: Intensive Precalculus

1 About the course

Where and when I, Nicholas Kirchner, will be the lecturer for this course, with the lectures being on Mondays, Wednesdays and Fridays from 10:10AM until 11:00AM in Tate 133. Julie Leifeld will handle the discussion sessions; section 11 will meet with Julie on Tuesdays and Thursdays from 10:10AM until 11:00AM in Vincent 20, while section 12 will meet with Julie on Tuesdays and Thursdays from 11:15AM until 12:05PM in Folwell 306.

Textbook We will use the 8th edition of Sullivan's Precalculus. I will not adhere to it closely, as it does not illustrate some of the connections between different concepts. Think of it as a problem source and reference book.

Contacts Spam Prevention Note: the email addresses are @math.umn.edu.

	Lecturer	TA
Name	Nicholas Kirchner	Julie Leifeld
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Office Hours	Tu 12:20-3:20PM	???
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Course webpage: <http://www.math.umn.edu/kirc0076/math1155.html>.

Outside of office hours the preferred method of contact is email. If Julie or I need to get a hold of you, we will use your university email account.

2 Course Content

Prerequisites I expect you to be familiar with the concept of a variable, and be comfortable with solving some types of equations and simplifying expressions. Graphing shouldn't be new to you; in particular you should know the equations describing a line and a circle. It would also help greatly if you've seen the quadratic formula, fractional exponents, factoring, complex numbers, and the concept of a function.

If too much of the above paragraph is new to you, consider trying MATH 1051 or MATH 1031.

Themes Precalculus can be described as the study of functions that come up in a great variety of disciplines. We will look at polynomials, exponentials, logarithms, logistic functions, and trigonometric functions. These come up when studying physics, chemistry, biology, economics, finance, and other fields.

Throughout, I will try to emphasize two things which the textbook does not. First, some seemingly distinct topics are in fact intimately connected.

For example: trigonometric functions arise naturally out of exponentials and complex numbers. Second, these mathematical functions are used to model many aspects of the world around us, and these models can provide great insight which we could not otherwise attain.

Tentative Outline I may make small changes in this outline as the semester progresses, but at the moment, I hope to do the following:

9/8 to 9/14	Trigonometry I	8.1, 8.2, 8.3
9/15 to 9/25	Graphs and Functions	Chapters 1 & 2, 5.1, 5.2
9/28 to 10/16	Trigonometry II	Chapter 6, 7.1, 7.2
10/19 to 11/6	Linear Functions and Polynomials	Chapters 3 & 4, 11.1
11/9 to 11/18	Exponentials and Logarithms	Chapter 5, 9.3
11/19 to 11/30	Trigonometry III	Chapter 7
12/1 to 12/9	Polar Coordinates	9.1, 9.2
12/10 to 12/16	Other topics	10.6, 12.1, 12.2, 12.3

Calculators Calculators will not be required, and you will not be allowed to use them on quizzes. Non-graphing calculators are permitted on the homework and exams.

3 Grading

Quizzes There will be 20 quizzes over the course of the semester, usually not announced in advance. These will have only one or two questions, take 5-10 minutes and be worth 3 points each. They may take place in either discussion or lecture. I will count the best 15 of them toward your final grade. No make-ups; if you cannot be present for a quiz, we will count it as one of the drops.

Homework There will be weekly homework due, with 13 assignments in all. Each assignment will be worth 15 points. I will count the best 11 of these toward your final grade. No late homework will be accepted for any reason.

Exams There will be four exams which will take place during lecture. They will be worth 50 points each. Some of the questions will be multiple choice. There will also be a final exam worth 190 points on December 17 from 1:30-4:30PM at a location to be announced.

If you need to miss an exam, we can make arrangements for a make-up exam. The make-up exam must be taken before the scheduled exam date.

Overall You will have homework, quizzes, and exams. There will be a total of 600 points for the semester, broken down as follows:

Final exam:	190 points
4 other exams:	200 points total
Quizzes:	45 points total
Homework:	165 points total

The final gradelines will be no harsher than 540 for an A-, 480 for a B-, 420 for a C-.

4 Important Dates

September 8	First day of class
September 15	Last day to drop with 100% refund
September 18	First exam
September 21	Last day to drop without a 'W' recorded
October 14	Second exam
November 4	Third exam
November 26-27	No class
December 2	Fourth exam
December 16	Last day of class
December 17	Final exam

5 Keeping Up

Coming to class MATH 1155 is two classes compressed into one, namely MATH 1051 and MATH 1151. As such, we have a lot of material to cover. I expect you to come to every class, and pay attention to the lecture or discussion.

While in class, please ask questions if something is confusing. Chances are that you are not the only one with your question, and some of your classmates will appreciate your question.

Studying I will expect you to work on the course material for ten hours per week not including attending the class. Studying in groups is highly encouraged and can be very helpful. While you are free to discuss homework with others, you are not permitted to copy their work and turn it in as your own. This would be an instance of academic dishonesty.

Getting help Julie and I will do what we reasonably can to help you to understand the material. Please do not hesitate to come to our office hours to discuss your mathematical difficulties. Other options for help include other students, and the SMART learning commons: <http://smart.umn.edu/>