Math 112: Calculus I

Syllabus: Fall 2009

Instructor: Tyler Jarvis TMCB 290, 422-5925, jarviscalculus@byu.edu
Office Hours: MF 9–10 am, W 3–4 pm
TA Office Hours:

- Rebecca Dorff: T Th 9 am, F 4 pm
- Spencer Patty: MT 3 pm, Th 2 pm
- McKay Heasley: MWF 2 pm
- Drew Johnson: M, W 2pm, Th 11 am

Classroom and Time: All sections meet MWF from 10:00-10:50 pm in 3108 JKB. Also, each student should enroll in one of the small recitation sections:

- Section 1 meets 9:00a - 9:50a TTh in 136 TMCB
- Section 2 meets 10:00a - 10:50a TTh in 112 TMCB
- Section 3 meets 1:00p - 1:50p TTh in 136 TMCB
- Section 4 meets 2:00p - 2:50p TTh in 136 TMCB
- Section 5 meets 12:00 - 12:50p TTh in 136 TMCB
- Section 29 meets 8:00a - 8:50a TTh in 1004 JKB
- Section 30 meets 10:00a - 10:50a TTh in 484 TNRB

Text: James Stewart, *Single Variable Calculus: Early Transcendentals* Volume 1, Sixth edition. Thompson Publishing, ISBN-10: 0495393339. ISBN-13: 978-0495393337

Course Objectives:

1. Development of general intellectual and mathematical ability, including
   (a) The ability to learn complex new concepts independently.
   (b) An ability to recognize and correct errors in your and others' work.
   (c) An ability to write arguments and mathematical computations correctly and accurately.
   (d) A mastery of basic logical reasoning and an ability to write simple proofs.
   (e) The ability and confidence to attack and solve an unfamiliar problem, and the discipline to keep working on a problem until you solve it.
2. Mastery of the core topics of Math 112. This is roughly the material in the first five chapters of the text. A more detailed list of these objectives with a list of how the assigned homework problems contribute to these goals is posted at http://math.byu.edu/mathwiki/index.php/Math_112_Calculus_Learning_Goals

Course Webpage: New announcements, copies of course materials, other information, as well as the reading quizzes, online homework, and other aspects of the course will be posted on the class webpage at http://online.byu.edu. Use your Route-Y id and password to log in. After that you will see many different math courses to choose from. Ours is called Math 112 Fall 09 section 01-05, 29-30 Jarvis. The first time you use this site, you will be asked for an "enrollment key." The key that you need to use is MathIsPower (all one word). After your first login you will no longer need this key.

Prerequisites:

Math 110 and 111 or the equivalent. This includes College Algebra and Trigonometry, but could also be satisfied with a good course in pre-calculus. Students will also be required to take a pretest in order to exhibit competency in these areas. (See below).

Pretest:

Successful completion of Math 112 requires a solid background in both College Algebra and Trigonometry. Students are required to take a pretest on these topics. While the pretest is worth one homework assignment, it is also **required** before the calculus committee will grade the final—that is, you cannot pass the class without taking the pretest.

A pretest review can be found at the site http://online.byu.edu. Log in with your Route-Y id and password. Click on Pretests and placement exams. Scroll down to the Math 112 section. The review is one link, the exam the other. When you are ready to take the pretest, make sure you select the correct link! There are 3 pretests on the site.

While you take the pretest, you will notice at the bottom of the page a "save without submitting" button. **Select this after each answer.** If you lose your internet connection, you can come back and finish the quiz later. Select "submit all" when you are done with the exam.

You are allowed 2 chances to pass, but you will need to **finish** the pretest before Saturday, September 12 at 11:55 p.m. If your score is below 75 % then you will have great difficulty in this class unless you put in a lot of effort to learn this pre-requisite material. Talk to your TA about your options, and what you can do to better prepare yourself.

Preparation Time:

Like anything worth doing, math is hard. Well prepared students should expect to spend a minimum of three hours out of class for every credit hour. This adds up to a minimum of 12 hours per week on homework and studying.

On the other hand, hard work is much more important than natural ability. If you work hard in this class, and do everything we ask you to do, you *will* learn calculus well.

Reading:

We do not have enough time to cover all of the reading material in class before the homework is due. You are expected to read the book and carefully study the examples yourself *before* the lecture on that material. You get more learning for your money if you read first and ask questions in class, than if I waste all of your class time reading the book to you or lecturing to you about things you could read. We will instead try to answer your questions, help you see why things are important, and fill in places that the book doesn't make clear.

Assignments:

Homework will be done in two parts: half online, and half on paper.

Online Homework: To do the online homework you will need to go to the course webpage at https://online.byu.edu.

Once you are at the class webpage, you will see the daily assignments available for you to work. As soon as you submit the assignment, the computer will grade it and tell you how you did. If you did a problem wrong, you should work it again until you get it right. The online homework will be due every Monday, Wednesday, and Friday. Online homework cannot be submitted after the due date.

Paper homework Paper assignments will be collected in class on Tuesdays and Thursdays. Late homework is worth half credit. All homework must be submitted by the last day of class to receive any credit.

Your solutions to the exercises should be clearly labeled and in order. The style of your written solutions should be very much like that of a textbook example: solutions should contain enough explanation so that one of your classmates would be able to easily understand what you have done. *Answers given without work will receive no credit.* You are welcome to study together and work together on homework assignments. However, you each must submit your own assignment. Everything you turn in should be in your own words and you should thoroughly understand everything you write down.

Quizzes

We will have reading quizzes before most of the regular class days. These will be posted online at the class webpage at online.byu.edu. You must take these every MWF **before class.** They will vanish from the webpage 30 minutes before class starts. These are designed to check whether you have done the reading assignment for the day. Reading before class is an important part of succeeding in most college classes, but especially in math.

Extra Credit for our Mistakes

The TAs and I are likely to make some mistakes. I hope you will help us correct them. We will give extra credit to the first person that catches it (toward your quiz/participation scores) for each mathematical mistake, whether it is mine, the TA's, or the book's. There is no penalty to you if you are wrong—in fact, by asking, you are helping yourself and your classmates understand better.

Questions

The main reason to come to the university, rather than staying at home and just reading books, is to ask questions of the teachers. If you do not ask questions, you are not getting your money's worth.

Help

There are several free sources of help in addition to regular class time.

1. Each of the TAs has office hours three times a week (times and places listed above).
2. I have office hours. Combining my office hours with the TAs gives you 15 hours per week of help that is designed just for the students in this class.
3. Also, don't use it too much; but you can get free tutoring help in the Math Lab. You may be tempted to go to the Math Lab often, but this is a bad idea. It is fine to have them help you with one or two problems, but if you don't understand a whole assignment you need to get help from me or the TA. Do not let the Math Lab TAs or a personal tutor help you with every problem on an assignment—if you do, you will pass the assignment but fail the exams and the class.

Cheating

Although I encourage you to talk together about your homework and to study together, there are some limits that you should observe. All work that you turn in must be written by you and be written in your own words. We cannot tolerate any cooperation or other cheating on quizzes or exams–it is both dishonest and unfair to other members of the class. I fully support all of the University's penalties for cheating and plagiarism, which are generally an unforgivable F in the course and possible suspension from the university, as well as prosecution for any violations of the law.

Nevertheless, I believe in repentance; namely, if you have cheated, and if you, feeling remorse, tell me before you are caught, I will arrange with you some way to make restitution without suffering the above-named penalties. If you are sure that you are going to fail unless you cheat, come to me, and we will arrange an honest alternative.

Grading

Exams, homework, participation, and quizzes will contribute to your grade in approximately the following proportions:

22% Homework Assignments
10% Quizzes
33% Three midterm exams
35% Final exam

Common Final Exam and Grades:

A common final exam is given to all students in all sections of Math 112. This assists the Mathematics Department to fairly assess students' knowledge of calculus and to assign grades fairly. The percentile ranking of each student relative to all students in all sections will be computed based on the final exam scores. No calculators, books, or notes will be permitted during the final exam. The final exam will be given on Saturday, Dec 12 from 7:00–10:00 p.m. The room assignment for your section will not be given until later in the semester. It will likely *not* be your assigned classroom.

Preventing Sexual Harassment:

Title IX of the Education Amendments of 1972 prohibits sex discrimination against any participant in an educational program or activity that receives federal funds. The act is intended to eliminate sex discrimination in education and pertains to admissions, academic and athletic programs, and university-sponsored activities. Title IX also prohibits sexual harassment of students by university employees, other students, and visitors to campus. If you encounter sexual harassment or gender-based discrimination, please talk to your professor; contact the Equal Employment Office at 801-422-5895 or 1-888-238-1062 (24-hours), or http://www.ethicspoint.com; or contact the Honor Code Office at 801-422-2847.

Students with Disabilities:

BYU is committed to providing reasonable accommodation to qualified persons with disabilities. If you have any disability that may adversely affect your success in this course, please contact the University Accessibility Center at 422-2767. Services deemed appropriate will be coordinated with the student and instructor by that office.