MATH 135 – Calculus 1  
Spring 2014  
MWF Noon - 12:50 PM, Swords 359

Syllabus (1/21/14)

**Instructor:** Prof. David Damiano, 341 Swords, 793-2476/3374  
e-mail: ddamiano@holycross.edu

**Office Hours:** MF 11 AM - Noon, WR 1 - 2 PM, and by appointment.

**Course Home Page:** [http://mathcs.holycross.edu/~dbd/math135/math135.html](http://mathcs.holycross.edu/~dbd/math135/math135.html)  
(Note this is not available in Moodle.)

**Course Materials** (available in the College Bookstore): *Single Variable Calculus: Concepts and Contexts 4E*, James Stewart, Cengage Learning. We will be using the on-line homework package WebAssign. If you purchase a new text through the bookstore, payment for WebAssign will be bundled with the text. If you purchase a used copy or an on-line copy, you will have to purchase WebAssign online in the first two weeks of the course.

**WebAssign:** WebAssign is an on-line homework system. The problems are taken directly from the text, but may be modified for on-line use. Among its features, it provides multiple tries at a problem (the default is five), instant feedback about whether your answer is correct, links to sections in the book relative to a concept or problem, and whiteboard explanations on how to do a problem. WebAssign can be found on-line at [http://www.webassign.net/](http://www.webassign.net/). When you go to this page, you will a button “I Have a Class Key” below the “Account Log In” panel. The class key for our course is the eight digit code

9538 5420

For the institution, use holycross (that’s all one word, lowercase). You will be able to use WebAssign for two weeks without paying. If you purchased a new text, it should come with a WebAssign code indicating that you have purchased it.

**Quick Summary:** MATH 135 is the first semester of a two semester sequence in single variable calculus, MATH 135-136. It focuses on properties of functions defined on subsets of the real numbers and that take values in the real numbers. Two new concepts, *continuity* and *differentiability*, form the heart of the course. Chapter 1 of the text is a review of the properties of several types of functions, that are covered in courses prior to calculus. Chapters 2, 3, and 4 introduce the new calculus concepts.

**Prerequisites:** Successful completion of four years of high school mathematics through pre-calculus or an equivalent course. (Not all schools call the course before calculus “pre-calculus”.)

**Note:** Calculus is NOT a prerequisite for this course.

**Intended Audience:** This course is an introductory course designed for students who are interested in pursuing a major in mathematics, the sciences, or economics, or who are interested in a health professions career. (You need not have declared a major to take this course.) While this course does satisfy the mathematics area requirement, if you are taking this course just for the area requirement, there are other options, for example, MATH 110 or MATH 120 that provide introduction to mathematics that isn’t calculus.
Class Format: While most classes will be lectures, there will be informal activities in class.

Calculators: Graphing calculators have become the de facto norm for high school and college mathematics and science courses. On particular occasions, including assignments, quizzes, and tests, the use of calculators may be prohibited. This will be announced in class when the activity is announced so that you have the necessary time to prepare for working without a calculator. Keep in mind that while it is useful to be fluent in the use of calculators, calculator fluency alone is not a substitute for understanding.

The Calculus Workshop: This is a drop-in tutoring center for students with questions about calculus. The hours are 7-9 PM, Sunday through Thursday in Swords 321. The tutors are upper class mathematics majors. The workshop opens for business Sunday, January, 26.

Learning Tips. Here are several suggestions to help you learn calculus.

• In class: Take careful notes. If you don’t understand an idea or point being made or calculation, ask about it. We have plenty of time to answer questions but you must ask them. When opportunities arise to talk in groups or present material at the board, take advantage of them. Talking about mathematics is an important way to formulate your understanding of the concepts.

• Out of class: Reread your class notes as soon after class as possible. Summarize your notes for the next class and reread your summaries to prepare for the next class. Read the text before attempting assignments. Mark up the text not just by highlighting but by commenting about concepts and calculations in the margins. Rewrite ideas in your own words and fill in the gaps in the text’s calculations. Also, note things that you don’t understand so that you can ask about them in class.

• Using the Book: Mathematics text books are often difficult to read. In part, this is because language of mathematics has developed over many hundreds of years into a precise and concise mode of expression. In particular, mathematics, including calculus, is expressed in a dense but rich symbolic symbolic language. Learning calculus necessarily involves mastering this symbolic language. Accordingly, mathematics must be read differently than ordinary prose. One must be attentive to every line and every word of the text and to every symbol that appears on the page.

• Homework: The goal of assignments is to help you develop your understanding of the material. This is accomplished both by basic calculations which help to become fluent in the symbolic language of mathematics, and by more open-ended thought problems which allow you to explore ideas. You should attempt homework problems after reading the text and your notes. The least effective way to learn the material is to parrot examples in the text that appear to be close to a particular homework problem. You may also find it helpful to discuss homework problems with other students in the class. It is, however, essential that you write up your own solutions and do not copy those of anyone else.

• Office Hours: If you find that you have additional questions that you would like to ask outside of class, which is quite common in calculus, please see me in office hours. While I’m pleased to speak with students about calculus any time, it’s important for your benefit that you seek assistance before assignments are due.
Quiz and Test Preparation: There will be nine weekly quizzes during the semester. These will consist of two or three short questions and will cover homework since the last quiz or test. These will be given at the beginning of class, so it is important that you have your questions answered prior to that class. There will be two hour exams given in the evening that will cover the material covered since the preceding test. You should begin studying for tests at least one week in advance; you should organize your studying so that you progress through all the material that is covered on the test; you should study from the text and class notes; and you should make use of office hours and the Calculus Workshop. It is important to break up your studying into manageable chunks of time that are spread over each day of the week before the test. The final exam is a two and a half hour comprehensive exam, so you should allow more time to study for the final than you do for hour exams. To help you prepare, there will be sample quizzes and tests that we will review in class prior to the quiz or test. These will either be distributed in class or be posted on the course web page.

Grading: Your total course percentage will be made up from homework, participation, quiz and exam grades as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>10 %</td>
</tr>
<tr>
<td>Class Participation</td>
<td>5 %</td>
</tr>
<tr>
<td>Weekly Quizzes (6 for credit)</td>
<td>20 %</td>
</tr>
<tr>
<td>Hour Exams (2 × 20% each)</td>
<td>40 %</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25 %</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100 %</strong></td>
</tr>
</tbody>
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Grading and Assignment Notes:
(i) Each graded assignment, quiz and exam will receive a numerical score which will contribute to the appropriate percentage. At the end of the semester, total course percentages will be used to determine final grades. I do not use an absolute scale to determine letter grades.
(ii) Written homework, which will routinely be more than half the assignment, will usually be due on Fridays.
(iii) There are a total of 9 quizzes on the syllabus. You may drop 3 quiz grades for a total of 6 quizzes that count for credit. Quizzes cover material since the preceding quiz or hour exam. Sample quizzes will be posted on the course web page.
(iv) The hour exams will be given on Thursdays in the evening (time TBA) in order to allow 90 minutes for exams. The first covers material starting with the beginning of the course; the second covers material starting with material covered since the first hour exam. Sample hour exams will be posted on the course web page.
(v) The final exam is a comprehensive exam scheduled during exam period. A sample final exam will be posted on the course web page.

Academic Honesty: The Department of Mathematics and Computer Science adheres to the College’s policy on Academic Honesty, which may be found in the College Catalogue. In addition, the department has formulated the attached statement intended to amplify the policy as to how it might apply in mathematics and computer science.
Math 135 Course Schedule (As of 1/21/14):

Generally, homework will be due on Fridays. Any changes to the schedule of assignments, quizzes, or exams will be announced in class.

- Quiz 1: Friday, January 31.
- Quiz 2: Friday, February 7.
- Quiz 3: Friday, February 14.
- Test 1: Thursday, February 20. Evening Time TBA.
- Spring Break: Monday, March 3 to Friday, March 7.
  - Quiz 4: Friday, March 14.
  - Quiz 5: Friday, March 21.
  - Quiz 6: Friday, March 28.
- Test 2: Thursday, April 3. Evening Time TBA.
  - Quiz 7: Friday, April 11.
- Easter Break: Thursday, April 17 to Monday, April 21.
  - Quiz 8: Friday, April 25.
  - Quiz 9: Monday, May 5.
- Final Exam: During Exam Period (5/8-5/14). Date and Time TBA by Registrar.