MATH 136 – Calculus 2
Fall 2013
MTWF 10:00 - 10:50 AM, Swords 359

Syllabus (8/28/13)

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/math136/math136.html
(Note this is not available in Moodle.)

Course Materials (available in the College Bookstore): Single Variable Calculus: Concepts and Contexts 4E, James Stewart, Thomson Brooks-Cole. For continuing students from Math 133 or Math 135, this is the same text you used previously. (Note: For students who took Calculus 1 at Holy Cross, we will not be using WebAssign.)

Quick Summary: MATH 136 is the second semester of a two semester sequence in single variable calculus, MATH 135-136. It focuses integration of functions defined on subsets of the real numbers and that take values in the real numbers. Although the focus is no longer on differentiation, all the material about functions from the first semester, including differentiation, will be used throughout the course. We will also study a selection of applications of integration to the physical and life sciences and economics. This material is covered in Chapters 5-8 of the text.

Prerequisites: Successful completion of MATH 133 MATH 135, or an equivalent one-semester college calculus course, or one year of high school calculus. If you have questions about whether you should take MATH 136, please talk to me.

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.)

Class Format: Most classes will be lectures. Some days lectures will be broken up by informal activities in class. On six Tuesdays during the semester (tentatively 9/10, 10/1, 10/22, 11/12, and 11/26) there will be collaborative exercises either in class or in the computer laboratory.

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 328. The tutors are upper class mathematics majors. The workshop opens for business Sunday, September 1.
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 six weekly quizzes during the semester. These will consist of two or three 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:

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<tr>
<th></th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework</td>
<td>10%</td>
</tr>
<tr>
<td>Class Participation</td>
<td>5%</td>
</tr>
<tr>
<td>Weekly Quizzes (4 × 5% each)</td>
<td>20%</td>
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<tr>
<td>Hour Exams (2 × 20% each)</td>
<td>40%</td>
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<tr>
<td>Final Exam</td>
<td>25%</td>
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<tr>
<td>Total</td>
<td>100%</td>
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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 6 quizzes on the syllabus. You may drop 2 quiz grades for a total of 4 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 136 Course Schedule (As of 8/28/13):

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, September 6.
- Quiz 2: Friday, September 20.
- Test 1: Thursday, September 26. Evening Time TBA.
- Quiz 3: Friday, October 11.
- Quiz 4: Friday, November 1.
- Test 2: Thursday, November 7. Evening Time TBA.
- Quiz 5: Friday, November 22.
- Quiz 6: Friday, December 6.
- Final Exam: During Exam Period (12/10-12/14). Time TBA by Registrar.