Math 143: Calculus III
Sections 05 and 08 Course Syllabus
WELCOME TO MATH 143!

Course Information
Textbook: Maurice Weir et al., Thomas’ Calculus, 12th edition
Course Schedule page: http://www.calpoly.edu/~math143f14.html
Accessible via PolyLearn
Course location: Building 38, Room 222
Course meeting times:
Section 05: Monday, Tuesday, Thursday, Friday 9:10-10:00 am
Section 08: Monday, Tuesday, Thursday, Friday 10:10-11:00 am

All course materials are accessible through PolyLearn.

PolyLearn Access: All students will be enrolled in the MAIN PolyLearn course with course ID MATH-143-05-2148. If you are in the 9:10-10:00 am section, this will be the course that appears in your list of Enrolled Classes. If you are in the 10:10-11:00 am section, the course MATH-143-05-2148 will be in the PolyLearn Access (You are NOT officially enrolled in these classes) section under My Classes in the portal. Please let me know as soon as possible if you are having trouble using PolyLearn or accessing the course webpage.

Contact Information
Professor: Dr. Dana Paquin
Office: Building 25 Room 327
Office phone: 805-756-2679
Email: dpaquin@calpoly.edu
Web page: http://www.calpoly.edu/~dpaquin/

Office Hours
Tuesday 12:10–1:00 pm Kennedy Library 216-P
Friday 12:10–2:00 pm Kennedy Library 216-P

Office hours are a great place to work on homework problems and prepare for quizzes/exams with other students! Note: these office hours may change due to student availability and other concerns. If that happens, I will let you know by email and will post the updated times and locations on PolyLearn. Note that my office hours will be held in Kennedy Library to help facilitate collaborative learning!

Course Schedule
You should check the Math 143 Course Schedule page,
http://www.calpoly.edu/~dpaquin/math143f14.html

(accessible via the Course Schedule section in PolyLearn) frequently (i.e. daily) for updated information regarding the schedule of topics, assignment due dates, quiz and exam dates, homework assignments, etc.

Homework
The best way to learn mathematics is by doing mathematics; thus, homework will be assigned daily. The homework problems will be posted online on the Math 143 Course Schedule page. Although you are not required to turn in the homework problems, it is critically important that you try all of the homework problems the day they are assigned. STUDY 25-35 HOURS PER WEEK! This includes working on practice problems (assigned or otherwise), reviewing your class notes, and reading the textbook.
Exams
There will be two in-class exams and a comprehensive final exam in this course. Information about the exams, including review problems and practice material, will be posted in the Exam Information section in PolyLearn. The exam dates are tentatively scheduled as follows. These dates may change, so check the Course Schedule page for updated information!

- Exam 1 Friday, October 17
- Exam 2 Friday, November 14

Final Exam

MATH 143-05 9:10-10:00 am section:
Friday, December 12, 7:10am - 10:00 am

MATH 143-08 10:10-11:00 am section:
Monday, December 8, 10:10am - 1:00pm

You must take the final exam at the scheduled time.

Assessment
Your grade in this course will be based on the following components:

- In-class assignments and participation 5%
- Quizzes (lowest score dropped) 25%
- In-class exam 1 20%
- In-class exam 2 20%
- Final Exam 30%

Letter grades will be assigned based on your numerical average at the end of the course in the following way:

<table>
<thead>
<tr>
<th>Numerical Average</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 and above</td>
<td>A-, A</td>
</tr>
<tr>
<td>80-89</td>
<td>B-, B, B+</td>
</tr>
<tr>
<td>70-79</td>
<td>C-, C, C+</td>
</tr>
<tr>
<td>60-69</td>
<td>D-, D, D+</td>
</tr>
<tr>
<td>0-59</td>
<td>F</td>
</tr>
</tbody>
</table>

Quizzes
Weekly quiz dates are posted on the Course Schedule page. Quiz problems will often be very similar to (or exactly the same as) homework problems. The best way to prepare for the quizzes is to do the homework problems immediately after each class session (and the best way to prepare for exams is to prepare for quizzes). No make-up quizzes will be given, but your lowest quiz score will be dropped to account for unusual circumstances.

Group Work
Group work will play an important role in this course. One of the best ways to determine whether or not you’ve really learned a concept is to try to explain that concept to someone else. Further, by working in groups, you will learn to speak meaningfully about difficult mathematical concepts, to challenge the ideas of others, defend your own ideas, and to both provide feedback for and receive feedback from other students.

Learning Disabilities
If you have a disability which requires an accommodation in this class, please discuss your concerns with me, but you should also consult the Disability Resource Center as soon as possible. Though I am happy to help you in any way
I can, I cannot make any accommodations for learning (or other) disabilities without proper authorization from the Disability Resource Center. In particular, if you have a learning disability that requires that you have additional time on exams, you must submit a Test Accommodation request through the DRC. These requests are available online at http://drc.calpoly.edu/.

**Academic Honesty**

In general, the rules set forth in the Campus Administrative Manual (CAM) apply. I expect that all of you will behave with honesty and integrity, in Math 143 and otherwise. Learning is both a privilege and a responsibility, and I expect you to conduct yourselves accordingly.

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### A Preview of Math 143

Math 143 is an interesting and challenging course, and I expect that we will have a lot of fun this quarter. I will expect all of you to work hard (STUDY 25-35 HOURS PER WEEK!!), and as a result, you will learn some really exciting mathematics. Here are some examples of the types of questions that we’ll think about during Math 143:

- You know the formula for the circumference of a circle with radius $r$ from high school geometry. But how can we use mathematics to prove that the formula is valid? Similarly, how can we use mathematics to find the perimeter of other types of objects?

- How can we use mathematical functions to create interesting two-dimensional objects (such as those used in computer animations)?

- What is the mathematical meaning of infinity? Is there more than one type of infinity?

- What does it mean to consider a sum with infinitely many non-zero terms? Does such a sum always go to infinity? Or is it sometimes infinite and sometimes finite? Are there geometric (or other) ways to think about infinite sums?

- How do calculators approximate quantities such as $\ln 7$, $\sqrt{2}$, and $\sin 1$? For example, suppose that an engineer constructs a square using beams with sides of length 1. To insert a support beam in the diagonal, a beam of length $\sqrt{2}$ is needed. How do we approximate $\sqrt{2}$ so that a beam of the right length can be cut?

- What are fractals, and how are they constructed?

- How can we extend the mathematics that we have developed for two-dimensional coordinate systems (i.e. the Cartesian plane) to three dimensions?

- What are vectors, and how do we work with them?

- Why would a non-mathematician care about any of these questions? How can the mathematics studied in Math 143 be applied to situations in engineering, physics, biology, medicine, economics, and other fields?