

Calculus I

MATH 120 003/004—Fall 2005
MWRF—MYBK 117/113

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Course Description and Goals

Calculus is the necessary prerequisite for advanced mathematics and science courses. In Calculus I, you learn concepts such as derivative, limit, global extrema, and integrals, all of which enable the mathematician to solve some very interesting problems. What is the most dangerous part of a racetrack? Given a rectangular piece of cloth, what are the dimensions of the octagon of maximal area?

As a graduate of this course you will be able to do the following:

- explain and define fundamental concepts of differential calculus.
- use class concepts to model real-world situations mathematically, thereby increasing your problem-solving skills.
- work in groups efficiently and effectively. We will break into small groups when possible. You can learn a great deal by engaging with classmates around a key concept or problem.
- use the solid mathematical foundation developed in MATH 120 for success in later major courses.

Text

James Stewart. *Calculus: Early Transcendentals*. 4th ed. Brooks/Cole, 1999.

Course Requirements and Evaluation

- Course meets: MWRF.
- Resource for Help with Course: professor's office hours, classmates, Math Lab (1st floor Addlestone Library—http://www.cofc.edu/~cs1/Math_Lab.html) for free tutoring and/or videotaped lectures, Supplemental Instruction (<http://www.cofc.edu/~cs1/index.html>)
- Attendance: Attendance correlates strongly with performance. Thus, it is in your best interest to attend every class and participate. Students with good attendance (4 or fewer absences) will be rewarded by dropping their lowest three quiz grades. No distinction will be made between excused and unexcused absences.
- Make-up Tests: Make-up tests will not be given, instead your final exam grade will count as the percentage of weight associated with the missed test. Note that this is not recommended. Students generally struggle on the final exam due to its cumulative nature, so please plan accordingly and do everything possible to make it to every test.
- Grading scale: University plus/minus scale

- Grading breakdown:
 - Tests (4) 64%
 - Announced Quiz (10-15) 15%
 - Final 16 %
 - Other 5%
- Homework: As this is an intensive, fast-paced course, homework will be assigned daily but not collected. In order to motivate you to do the problems, however, there will be regular quizzes. Suppose on Monday, I assign 15 problems for homework, and announce a quiz on Tuesday. You are encouraged to work through these problems Monday night, writing steps and solutions in your notebook. On Tuesday, class will begin with 2 or 3 randomly chosen homework problems from Monday's assignment. The quiz will be closed textbook, open notebook. If you have worked out the problem, you may copy the solution onto your quiz. If not, you must work the problem on the spot.
- Calculators: A calculator is not required for this class. If you have one, you may use it for homework. However, calculators will be excluded from at least part of every exam. You may not use a TI-89 or any machine with symbolic capabilities on any exam.
- Academic Integrity/Disability Services: University policies on academic integrity and disability services will be strictly enforced.

Course Organization

- **Week 1** (WRF 8/24-8/26) — 1.1-1.6, 2.1
- **Week 2** (MWRF 8/29-9/2) — 2.2-2.5
- **Week 3** (MWRF 9/5-9/9) — 2.5-2.7
- **Week 4** (MWRF 9/12-9/16) — 2.8, 2.9, Review, Exam #1 (1.1-2.9)
- **Week 5** (MWRF 9/19-9/23) — 3.1-3.4
- **Week 6** (MWRF 9/26-9/30) — 3.5-3.7
- **Week 7** (MWRF 10/3-10/7) — 3.8, 3.10, Review, Exam #2 (2.9-3.10)
- **Week 8** (MWRF 10/10-10/14) — 3.11, 4.1
- **Week 9** (WRF 10/19-10/21) — 4.2-4.3
- **Week 10** (MWRF 10/24-10/28) — 4.4, 4.5, 4.7
- **Week 11** (MWRF 10/31-11/4) — 4.7, Review, Exam #3 (3.11, 4.1-4.5, 4.7)
- **Week 12** (MWRF 11/7-11/11) — 4.10, 5.1
- **Week 13** (MWRF 11/14-11/18) — 5.2-5.3
- **Week 14** (M 11/21) — 5.4
- **Week 15** (MWRF 11/28-12/2) — 5.4-5.5, Exam #4 (4.10, 5.1-5.5)
- **Week 16** (M 12/5) — Review
- **FINAL:** MATH 120 003 has final Wed. 12/14 8-11am, MATH 120 004 has final Sat. 12/10 12-3pm