Calculus II

MA 241–SSII 2002
MTWHF 10:20-12:30 pm–HA 335

Instructor: Amy Langville
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Office Hours: MTWHF 12:30-1:20pm or by appointment

Course Description and Goals

Calculus is the necessary prequisite for advanced mathematics and most engineering courses. Here you will become familiar with concepts like: Riemann sum, antiderivative, definite integral, indefinite integral, improper integral, techniques of integration, sequences, series, sums, volumes of solids of revolution, convergence and divergence, all of which enable the mathematician to solve some very interesting problems. What is the volume of an unusually-shaped vase? What is the probability that an o-ring on the space shuttle will fail?

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

- explain and define fundamental concepts of integral 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 often. You can learn a great deal by engaging with classmates around a key concept or problem.
- use the solid mathematical foundation developed in MA 241 for success in MA 242 and later major courses.

Text

James Stewart. *Calculus Concepts and Contexts.* Second ed. Brooks/Cole, 2001.

Course Requirements and Evaluation

- Course meets: MTWHF. Maple labs are the second half of class each W.

- Attendance: University policy states that attendance must be taken in all 100 and 200 level classes. No distinction will be made between excused and unexcused absences. Students with good attendance (3 or fewer absences) will be rewarded by adding 20 points to their Maple Total points.
- Test Dates:
  - Test 1 - Tues. 7/9 - covers 5.1-5.8
  - Test 2 - Tues. 7/16 - covers 5.9-6.4
  - Test 3 - Tues. 7/23 - covers 6.5-7.7
  - Test 4 - Tues. 7/30 - covers 7.8-8.3
  - FINAL - Thurs. 8/8, 8-11am, HA 335, cumulative
- Make-up Tests: University policy requires that all anticipated absences on test days be excused in advance (death in the family, university activity requiring travel). Emergency absences should be reported within 1 week of returning to class. 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:
  - 90-100 A
  - 80-89 B
  - 70-79 C
  - 60-69 D
  - 0-59 F
- Grading breakdown:
  - Tests (4) 55 %
  - Final exam 20 %
  - Maple, quizzes, class activities, other 25%
- Maple: Five Maple homeworks are due periodically throughout the semester. It is your responsibility to keep up with these. Late extensions cannot be given. Please see the course organization schedule for due dates. Attendance at Maple labs counts as part of your overall class attendance.
- Homework: As this is an intensive, fast-paced 5-week summer session, homework will be assigned daily but not collected. In order to motivate you to do the problems, however, there will be daily quizzes. Suppose on Monday, I assign 15 problems for homework. 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. One other feature of the daily homeworks is bonus problems. Each section's homework will contain 1 or 2 bonus problems. These can be used for extra credit. To submit a bonus problem, write the solution on a separate piece of paper with all steps involved and turn it in the next class period. I will grade these individually. Depending on the difficulty of the problem, you can earn yourself 1 or 2 extra credit points for the next test for each correct bonus submission.
- Resources for help:
  - Instructor

  - Multimedia Center - HA 244 - video-taped lectures, computer-assisted tutorials
  - Maple tutoring - HA 269
  - One-on-One Tutoring - Nelson 126 - first-come, first-serve
  - Classmates

- Academic Integrity/Disability Services: University policies on academic integrity and disability services will be strictly enforced.

Course Organization

See website for day-to-day schedule:

`https://courses.ncsu.edu/classes-a/maple_info/www/ncsu_maple_site/index.html`