

MATH 2644

Calculus II

Spring 2019
Section 01

Instructor: Dr Scott Gordon

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Time and Location: MW 2:00–3:15, F 2:25–3:15 (305 Boyd)

Office Hours: 8:30–9:30, 11:00–12:00 MWF, or by appointment.

Textbook: *Single Variable Calculus, Early Transcendentals, 7th Ed., Vol. 2*, by James Stewart.

Course Description: Applications of integration (arc length, areas, volumes, and work), techniques of integration (integration by parts, trig substitutions, partial fractions, tables, approximate integration), improper integrals, parametric equations, differential equations, infinite series and Taylor series.

Homework Exercises: Problems assigned after each lesson will be divided into two categories: exercises and turn-in problems. Exercises will not be graded and are designed to help you understand the important concepts and prepare for the tests.

Turn-in problems: There will be approximately 200 points worth of turn-in problems assigned during the semester. Your work should include a clear and complete explanation of how you solved the problem and (in accordance with university's honor code) cite any outside sources. If a problem is turned in late, 50% of its point value will be deducted from your grade for each day past the due date.

Math Tutoring Center: In addition to utilizing my office hours, you can get help from the Math Tutoring Center (205 Boyd). The tutoring center hours can be found on the Math Department's website under the "Students" tab. I will also email a detailed schedule with tutors names within the first two weeks of class.

Tests: There will be four tests during the semester worth 80 points each.

Rescheduling a tests: If you have a valid reason for missing a test, you may be allowed to reschedule, but you must make arrangements with me *in advance*.

Final: There will be a *cumulative* final exam worth 160 points on Monday, 5/6, 2:00–4:00.

Grading: Your numerical grade will be your total points (on homework, tests, and the final) as a percentage of the total number of possible points. Your letter grade will be determined according the following grading scale: A: 88–100, B: 76–87, C: 64–75, D: 52–63, F: 0–51.

Withdrawal: February 27 is the last day to withdraw from the course with a grade of W.

Learning Outcomes: The student will be able to

1. Compute areas under curves and between curves.
2. Compute volumes by disks, washers, shells, and cross-sections.
3. Compute arclength of a curve and surface area of a surface of revolution.
4. Compute work done when either force or distance are varying functions.
5. Evaluate limits involving indeterminate forms using l'Hôpital's Rule.
6. Evaluate antiderivatives using the techniques of u -substitution, integration by parts, trigonometric integrals, trigonometric substitution, partial fractions, completing the square.
7. Evaluate improper integrals.
8. Solve differential equations using separation of variables.
9. Determine whether an infinite sequence converges or diverges.
10. Test an infinite series for convergence using geometric series, p -series, the comparison test, the limit comparison test, the integral test, the ratio test, the root test, and the alternating series test.
11. Determine the radius of convergence and the interval of convergence of a power series.
12. Compute the Taylor series and Maclaurin series of a function.