Math 2141Q Section 2 Fall 2015
Reed Solomon

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Office Hours: Monday 12:10 - 1:10, Tuesday 10:15-11:30.

Grading: You will be graded on homework (40%), two midterm exams (20% each) and a final exam (20%).

Homework: There will be regular homework assignments for this course typically collected on Wednesday. Many of the problems assigned will involve proving why something is true. It is important that you express your mathematical thoughts in clear and complete sentences. Of course, you will make mathematical calculations and use mathematical notation, but often the sentences explaining the reasoning connecting the steps in your proof are the most important. You should write your explanations as though they were for another student in the class. You should also work through your mathematical thoughts on scratch paper first and rewrite the results in a clean and concise way when you hand it in. You will be graded both on the correctness of your solution and on your mathematical writing.

Textbook: The textbook for this course is *Calculus, Volume I*, second edition, by Thomas M. Apostol. Because this course moves very quickly and approaches mathematics from a more sophisticated perspective than you are probably used to, it is extremely important that you read the textbook as we go along. Many of the ideas in this course require time and effort to grapple with before they really sink in. Just listening passively to the lectures will not be enough to master this material.

Midterm Exams: The first midterm exam is on **Friday October 9** and the second midterm exam is on **Friday November 13**. When we get close to the time of each exam, I will try to be very clear about what material is covered and what types of problems you can expect to see on the exam.

Calculators: You are welcome to use a calculator for this course, including on the exams. However, I think it is unlikely that a calculator will be of much help in this course.

Office Hours and Additional Help: This course moves quickly and it is important that you don't get behind. I strongly recommend visiting me in office hours if you find yourself having difficulties with the material. It is much easier for us to discuss a section of the textbook to keep you caught up that to try to discuss an entire chapter.

Academic Integrity: Instances of academic dishonesty are taken very seriously at UConn. Please read www.community.uconn.edu/student_code_appendixa.html. If you ever have a question about whether certain behavior constitutes academic dishonesty, you should ask!

Date	Section
Mon 8/31	Set theory, I.2
Wed 9/2	Set theory and Number systems, I.2 and I.3
Fri 9/4	Number systems, I.3
Mon 9/7	No class (Labor Day)
Wed 9/9	Induction, I.4
Fri 9/11	Sum notation, absolute values, triangle inequality, I.4
Mon 9/14	Functions and areas, step functions 1.1-1.11
Wed 9/16	Integration of step functions, 1.12-1.15
Fri 9/18	Integration of more general functions, 1.16-1.19
Mon 9/21	Integration of bounded monotonic functions, 1.20-1.23
Wed 9/23	Properties of integral, integration of polynomials, 1.24-1.27
Fri 9/25	Area between curves, 2.1-2.4
Mon 9/28	Trig functions, 2.5-2.8
Wed 9/30	Polar coordinates, 2.9-2.11
Fri 10/2	Applications of integration, 2.12-2.17
Mon 10/5	Indefinite integrals, 2.18-2.19
Wed 10/7	Definition of limit, 3.1-3.2
Fri 10/9	**Midterm exam**
Mon 10/12	Definition of continuity, examples and properties, 3.3-3.6
Wed 10/14	Compositions, Intermediate Value Theorem, 3.7-3.11
Fri 10/16	Inversion, 3.12-3.15
Mon 10/19	Extreme Value Theorem for Integrals, 3.16-3.17
Wed 10/21	Continuous functions and Mean Value Theorem for Integrals, 3.18-3.20
Fri 10/23	Definition of derivative and examples, 4.1-4.4
Mon 10/26	Algebra of derivatives, geometric interpretation, 4.5-4.9
Wed 10/28	Chain rule, 4.10
Fri 10/30	Implicit differentiation and related rates, 4.11-4.12
Mon 11/2	Extreme values, Mean Value Theorem, 4.13-4.15
Wed 11/4	Geometric properties of functions, 4.16-4.19
Fri 11/6	Fundamental Theorems of Calculus, 5.1-5.6
Mon 11/9	Integration by substitution, 5.7-5.8
Wed 11/11	Catch up
Fri 11/13	**Midterm Exam**
Mon 11/16	Integration by parts, 5.9-5.10
Wed 11/18	Log functions, 6.1-6.7
Fri 11/20	Logarithmic differentiation and polynomial approximations, 6.8-6.11
Mon 11/30	Exponential functions, 6.12-6.18
Wed 12/2	Inverse trig functions, 6.20-6.22
Fri 12/4	Partial fractions, 6.23
Mon 12/7	Transforming integrals into rational functions, 6.24-6.25
Wed 12/9	Review of integration
Fri 12/11	Catch up