Syllabus for Calculus II (MATH 142)

Summer I (May 30 – June 30), Section 002

Department of Mathematics

University of South Carolina - Columbia

Instructor	Danny Rorabaugh
Office	LC 123B
Office Hours	Mon/Wed 9:45 – 10:15 am Tue/Thu 12:45 – 1:45 pm
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Locations and Times

	Room	*Days*	*Time*
Main Lecture	LC 112	M, T, W, Th	10:30 am – 12:45 pm
Recitation	LC 112	T, Th	3:30 pm – 4:45 pm
Maple Lab	LC 102	M, W	3:30 pm – 4:45 pm

Overview

The prerequisite for Calculus II (Math 142) is either qualification through placement or a grade of C or better in Math 141. This course is a continuation of Math 141, and will cover:

- Integration techniques, including integration by parts and trigonometric substitution;
- Use of integration to calculate areas, volumes, and average values;
- Sequences and series, including tests for convergence and divergence;
- Polar coordinates and polar integration.

Materials

Calculus Textbook: *Calculus, Early Transcendentals*, by James Stewart, 6th edition, ISBN 0495011665;
CalcLabs with Maple for Single Variable Calculus, 4th Edition, ISBN 0495560626;
WebAssign (see *Assignments* below) – https://www.webassign.net;
All other official materials will be available on Blackboard (see *Blackboard* below) – https://blackboard.sc.edu.

Grading

Your grade will be based on lecture and recitation attendance, online assignments, recitation quizzes, three midterm exams, one final exam, and your Maple Lab grade. The weight designated for each is as follows:

Attendance	5%
Assignments	15%
Quizzes	20%
Exams	45%
Maple Lab	15%

Letter Grades

An 'A' in the class reflects superb mastery of the concepts; a 'B' reflects mastery; a 'C' demonstrates an average understanding of the material; a 'D' or 'F' shows a below average understanding of the material. Below is the quantitative breakdown of the aforementioned grades.

A	[90%, 100%]
B	[80%, 90%)
C	[70%, 80%)
D	[60%, 70%)
F	[0%, 60%)

Attendance
Attendance in every class meeting is always important – but even more so in a summer class, where every day is equivalent to nearly a week of a semester course. By standard policy, students missing more than 10% of the class meetings can have their overall lab grade lowered. After the second absence, each absence from lecture will result in a loss of 0.5 of the 5.0 percentage points allocated to lecture attendance. Each recitation absence counts as half a lecture absence. **Do not forget to initial the roll sheet at the end of each class session.** Leaving class early counts as an absence.

Blackboard
Various handouts and other class-related materials will be posted on Blackboard under Course Documents. Grades will also be posted on Blackboard under Tools >> My Grades. In addition, all emails regarding the class will be sent through Blackboard. Please ensure that the email listed on your Blackboard account (under personal information) is one that you check regularly.

Recitation
We have a recitation session every Tuesday and Thursday afternoon. Each recitation will include a quiz over material covered since the previous quiz or test (see *Quizzes* below). Furthermore, since the lecture periods will primarily be devoted to explaining new terms and concepts, recitations will mostly be spent working through problems and examples of the material learned.

Maple Lab
You have a Maple Lab every Monday and Wednesday afternoon. Your instructor for the lab is Toby Sanders (santertl@mailbox.sc.edu). One of Mr. Sanders' responsibilities is providing me with a grade of your lab performance at the end of the month, which will account for 15% of your grade in this course. All questions about the lab and use of Maple are to be directed to Mr. Sanders, not to Mr. Rorabaugh

Assignments
Assignments make up 15% of your grade. All assignments will be completed online in WebAssign. A WebAssign subscription comes with the purchase of your calculus book from the bookstore. If you do not have the textbook or you purchased the book elsewhere, you can register on the WebAssign site for $65. Please register your account before the class begins at https://www.webassign.net/v4cgi/selfenroll/classkey.html - our class code is **sc 3797 3951**. There will be an assignments on every section we cover in the textbook, which will be due two (2) days after we finish covering the relevant material in lecture.

Quizzes
Quizzes make up 20% of your grade. There will be a quiz every recitation, as well as during sporadic non-test lecture periods. I will drop each student's lowest quiz grade at the end of the course. There will be no make-up quizzes

Exams
Exams make up 45% of your grade. We will have a midterm each Monday in June - 6/6, 6/13, 6/20 and 6/27 - covering the material from the previous week. There will be no make-up exams. The cumulative final exam will be on Thursday, June 30. By university policy, students must attend the final exam to pass the course.

Electronics in Class
No electronics are to be used in class. This includes laptops, cell phones, mp3 players, and calculators. Your quizzes, tests, and class work will never require the use of a calculator. Watches, pacemakers, hearing aids, etc. are obvious exceptions to this rule.

Learning Outcomes
The goal of this course is to develop students' analytical and problem-solving abilities within the context of numeric and symbolic manipulation. In particular, students will gain mastery of integration techniques in a single variable and will acquire understanding of limits and convergence of sequences and series.

Additional Help
If you're having any trouble in the course, please visit me during my office hours (see top of syllabus). Additionally, free help is available at the Math Tutoring Center, or you can hire somebody for private tutoring (http://www.math.sc.edu/mathlab/private/). More student resources are available at the Academic Centers for Excellence (http://www.housing.sc.edu/ace/).

Academic Honesty
Cheating and plagiarism will not be tolerated. You may discuss all assignments with others, but the work you submit must be your own. Exams are always independent tasks. Violations of this policy will be dealt with according to University guidelines. You can find a link to the University Honor Code at http://www.sc.edu/academicintegrity/. The following are examples - not a comprehensive list - of actions considered as academic dishonesty:

- Turning in work copied (whole or in part) from another student or resource (print or electronic) as your own.
- Communicating with other persons or using unauthorized resources during tests and quizzes.

Course Topics

Textbook Section(s)	*Topic*
5.1 – 5.5	Integration Basics (Review from Calc I)
7.1	Integration by Parts
7.2	Trigonometric Integrals
7.3	Trigonometric Substitution
7.4	Integrations with Partial Fractions
7.5	Strategies for Integration
7.8	Improper Integrals
6.1 – 6.2	Areas and Volumes (Review from Calc I)
6.3	Volumes by Cylindrical Shells
6.5	Average Value of a Function
11.1	Sequences
11.2	Series
11.3	Integral Test
11.4	Comparison Test
11.5	Alternating Series
11.6	Absolute Convergence
	Ratio and Root Test
11.7	Strategies for Testing Series
11.8	Power Series
11.9	Representations of Functions as Power Series
11.10	Taylor and Maclaurin Series
11.11	Applications of Taylor Polynomials
10.3	Polar Coordinates
10.4	Polar Integration
–	(Review for the cumulative final)