Calculus II
Math 152, Section H1
Spring 2012

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Office Hours: M 3:30-4:30pm, and by appointment

Peer Mentor: Alex Yang

Time and Location: MWTh 5:00-6:20pm, ARC 333, Busch

Prerequisites: Calculus I

Textbook: *Calculus: Early Transcendentals* (2nd Edition) (ISBN 1-4641-0376-3) by Jon Rogawski, published by W. H. Freeman and Company, 2010.

Calculator: Students should have a graphing calculator available in class and while doing homework and workshops. Students have traditionally used the TI-83 or 83+, but any calculator with equivalent capacities can be used, such as the TI-85 or 86. Note, however, that calculators may *not* be used during quizzes and examinations.

Course Webpage: http://www.math.rutgers.edu/~ynaqvi/math152sp12/math152sp12.html

Course topics: This course continues the study of the integral calculus, focusing on techniques and applications of integration, elementary differential equations, sequences, infinite series, Taylor series, parametric equations and polar coordinates.

Absences: You are expected to attend every lecture and workshop. An absence due to emergency may be excused, provided that you can supply acceptable written evidence if required, and that you notify the lecturer *as soon as possible*.

Homework: A list of homework problems for each chapter can be found on the course webpage. The first 20 minutes of each workshop period will be spent discussing problems for the chapters covered earlier in the week. These problems will be handed in and graded by the peer mentor. It is a good idea solve the homework for each lecture before the next one in order to keep up with the class.

Quizzes: A fifteen minute quiz will be given during most workshops meeting, and no make-ups will be given for these. The lowest quiz grade will be dropped in order to accomodate unavoidable absences.

Workshops: Workshops will be held on Mondays, and write-ups for the workshop will be due at the beginning of class on the following Monday. No late workshops will be accepted. More information about workshops is given at the begining of the Rutgers customized edition of the textbook, and is also available at:
https://sites.google.com/a/scarletmail.rutgers.edu/640-152-s12/workshops

Exams: There will be two eighty-minute midterm exams and a three-hour cumulative final exam. Make-up exams will only be allowed if you can supply *acceptable* written evidence, and that you notify the lecturer *before the end of the missed exam.*

Midterm Exam 1:	Wednesday, February 22
Midterm Exam 2:	Wednesday, April 4
Final Exam:	Thursday, May 3

Each exam will have a "Part I/Part II" component. Part I questions will test basic computational skills and will consist of 1 or 2 questions. Part I scores will also be recorded separately and used to determine borderline grades. Students who do not complete the Part I portion of the exams at a successful pass rate (75%) may have their grade lowered by up to two steps (for example, from a C+ to a D). Part II questions are not made available in advance.

Grading: The term grade will be based on the results of the examinations, the scores on written homework and workshops, and on class participation, which will be measured in various ways, including quizzes. It will be determined using the following point distribution:

Homework	25
Quizzes	100
Workshops	75
1st exam	100
2nd exam	100
Final exam	200
Total	600

However, in addition to this grading scheme, please note the following.

- Students who miss a significant number of classes may have their course grades lowered one step (for example, from a B+ to a B). Attendance is very useful.
- Students who do not complete the Part I portion of the exams at a successful pass rate (75%) may have their grade lowered by up to two steps (for example, from a C+ to a D).
- Students whose exam grades all are near bare passing or are failing may fail the course in spite of numerical averages: students must show that they can do adequate work connected with this course independently and verifiably.

Course Outline: The following plan for the course is tentative and may be subject to changes.

Lecture	Date	Sections	Topics
1	W 1/20	6.1	Area Between Curves
2	Th 1/21	6.2 6.5	Volume and Average Value, Work
3	W 1/25	6.3 6.4	Volumes of Revolution, Cylindrical Shells Method
4	Th 1/26	7.1	Integration by Parts
5	W 2/1	7.2	Trigonometric Integrals
6	Th 2/2	7.3	Trigonometric Substitution
7	W 2/8	7.4	Hyperbolic Functions
8	Th 2/9	7.5	Partial Fractions
9	W 2/15	7.6 7.7	Improper Integrals Probability and Integration
10	Th 2/16	7.8	Numerical Integration
11	W 2/22		**FIRST MIDTERM EXAM**
12	M 2/27	8.4	Taylor Polynomials
13	W 2/29	10.1	Sequences
14	Th 3/1	10.2	Infinite Series
15	W 3/7	10.3	Convergence of Series with Positive Terms
16	Th 3/8	10.4	Absolute and Conditional Convergence
17	W 3/21	10.5	Ratio and Root Tests
18	Th 3/22	10.6	Power Series
19	W 3/28	10.7	Taylor Series
20	Th 3/29	10.7	More Taylor Series
21	W 4/4		**SECOND MIDTERM EXAM**
22	M 4/9		Additional Applications of Series
23	W 4/11	11.1	Parametric Equations
24	Th 4/12	11.2 8.1	Arc Length of Parametric Curves, Arc Length and Surface Area
25	W 4/18	11.3 12.7	Polar Coordinates, Cylindrical and Spherical Coordinates
26	Th 4/19	11.4	Area and Length in Polar Coordinates
27	W 4/25	9.1	Differential Equations
28	Th 4/26	9.2	Exponential Models