Math 1920 Calculus II University of Memphis

Course Content: Major topics include review of integration, advanced techniques of integration including the substitution rule and integration by parts as well as trig substitution and partial fractions, applications of integration including area, volume, work, arc length, and probability, differential equations, parametric equations, polar coordinates, conic sections, and infinite sequences and series.

Prerequisite: Math 1910 or Math 1421 with a minimum grade of C-, or both Math 1830 with a minimum grade of A- and Math 1900 with a minimum grade of C-. A score of at least 4 on the AP Calculus AB series exam, or a score of 3 on the AP Calculus BC series exam can be used to obtain credit for Math 1910, and thus fulfil the prerequisites for Math 1920.

Note: students with a stronger math background may be invited to take Honors Calculus II (Math 2421) in place of Math 1920. See http://www.memphis.edu/msci/ugrad/honors.php for more details. Students may not receive credit for both Math 2421 and Math 1920. Students with a score of at least 4 on the AP Calculus BC series exam can obtain credit for Math 1920.

Course Materials: Textbook, *Calculus Early Transcendentals*, by James Stewart, 8th ed., Webassign student access code, and 3-ring binder for labs and notes, graphing calculator like the TI-84. Note: the TI-89 is not allowed.

Tutoring: Free tutoring is available through the University's Education Support Programs. They offer a drop-in tutoring service in the Math Learning Center in DH 341 and online assistance.

Disabilities: Any student who anticipates physical or academic barriers based on the impact of a disability should contact Disability Resources for Students (DRS) at 110 Wilder Tower, 901.678.2880 at the earliest opportunity. DRS coordinates access and accommodations for students with disabilities. You must give your instructor a copy of any accommodation memos provided by the DRS **within the first week of class.**

Attendance: Attendance is important. Every student is required to be in class, on time, and stay for the entire class period for each class session. If you miss class you are responsible for finding out what topics were covered.

Grading Policy: Grades will be calculated based on homework and tests, and final exam. Grading scale is determined by the instructor.

Homework: Homework will be assigned for each section of the text and must be finished before the due date for you to receive credit.

No Make-ups for Tests: If you must miss a test because of an official school function you must schedule to take the test at a time prior to the original test date. No other rescheduling will be allowed.

Final Schedule: see http://www.memphis.edu/registrar/calendars/

Sample Schedule:

Review

5.1-4 Review of integration
5.5 The Substitution rule

Chapter 6: Applications of Integration

6.1 Areas between curves
6.2 Volumes
6.3 Volumes by cylindrical shells
6.4 Work
6.5 Average value of a function

Chapter 7: Techniques of integration

7.1 Integration by parts
7.2 Trigonometric integrals
7.3 Trigonometric substitution
7.4 Integration of rational functions by partial fractions
7.8 Improper integrals

Chapter 8: Further Applications of Integration

8.1 Arc length
8.2 Area of a surface of revolution
8.5 Probability

Chapter 10: Parametric Equations and Polar Coordinates

10.1 Curves defined by parametric equations
10.2 Calculus with parametric curves
10.3 Polar coordinates

Chapter 11: Infinite Sequences and Series

11.1 Sequences
11.2 Series
11.3 The integral test and estimates of sums
11.4 The comparison tests
11.5 Alternating series
11.6 Absolute convergence and the ratio and root tests
11.7 Strategy 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