Math 21B Syllabus
Summer Session I, 2016

June 18, 2016

Course Description: This course teaches the fundamentals of integral calculus. The course begins with the integral of a continuous function defined as the limit of its Riemann sum before the Fundamental Theorem of Calculus presents integrals as anti-derivatives. Integrals are applied to many problems in physics, including area, volume, arc length, surface area, and center of gravity. Various techniques of integration are studied and include u-substitution, integration by parts, integration by partial fractions, and trigonometric substitution. After applying integrals to separable differential equations, the course concludes with the calculus of parametric equations(may not have time for this).

Prerequisite(s): Completion of course MAT 21A or MAT 21AH; Must earn a C- or better in course MAT 21A or MAT 21AH to enroll.

Lectures: Hoagland 168, MTWR 10:00-11:40AM

Lecturer: Yuanyuan Xu, MSB 2117, yyyxu@ucdavis.edu.

Office Hours: 2:00-3:00PM Tuesday, Thursday or by appointment.

Textbook: Thomas Calculus Early Transcendentals, 13th edition, Thomas, Weir, and Hass, Addison-Wesley Publishers, ISBN-13 #9780321884077

Grading: Weekly homework 20%, 2 midterm exams 20% for each, and final exam 40%.

Homework: Weekly problem sets will be assigned on SmartSite. They will be collected and returned at the beginning of the lectures every Monday in class. The lowest homework will be dropped. No late homework.

Exams: Location: Hoagland 168
1st Midterm: 10:50-11:40AM, June 29th, 100pts, Ch5.
2nd Midterm: 10:50-11:40AM, July 18th, 100pts, Ch6, Ch7..
Final: 10:00-11:40AM, July 28th, 200pts, ALL.
Please bring your ID card with you during exams. The Midterms and Final will be closed book, no calculators allowed. There will be no make-up exams.

Disabled Students: If you need extra time or a quiet testing place, please inform me with documentation from SDC at the beginning of the summer session.

Last Drop Date: June 28th.

Approximate Schedule:

Lecture	Date	Sections	Topics
1	6/20	4.8, 5.1	Antiderivatives, Area and estimating with finite sums
2	6/21	5.1, 5.2	Area and estimating with finite sums, Sigma notation
3	6/22	5.2, 5.3	Limits of finite sums, The definite integral
4	6/23	5.4	The Fundamental Theorem of Calculus
5	6/27	5.5, 5.6	Indefinite integrals and the substitution method, Definite integral substitutions
6	6/28	5.6, 6.1	Area between curves, Volumes using cross sections
7	6/29	-	Q&A, Midterm 1
8	6/30	6.1, 6.2	Volumes using cross sections and cylindrical shells
-	7/4	-	Holiday!!
9	7/5	6.3, 6.4	Arc length, Areas of surfaces of revolution
10	7/6	6.5	Work and fluid forces
11	7/7	6.5, 6.6	Work and fluid forces, Moments and Centers of Mass
12	7/11	6.6	Moments and Centers of Mass
13	7/12	7.1	The logarithm defined as an integral
14	7/13	7.2	Exponential change and separable differential equations
15	7/14	8.1, 8.2	Using basic integration formulas, Integration by parts
16	7/18	-	Q&A, Midterm 2
17	7/19	8.3, 8.4	Trigonometric integrals, Trigonometric substitutions
18	7/20	8.5	Integration of rational functions by partial fractions
19	7/21	8.8	Improper integrals
20	7/25	11.1, 11.2	Parametrization of plane curves, Calculus with parametric curves
21	7/26	11.3, 11.4	Polar coordinates, Graphing in polar coordinates
22	7/27	11.5	Areas and lengths in polar coordinates, Review for final
23	7/28	-	Final