Math 2210 Calculus II Summer 2004 11:45A-12:45P Daily Room Boyd-323
Instructor: Dr. Alla V. Balueva Finals: Aug. 4-6, W-F

Text: Calculus with Analytical Geometry, "Early Transcendentals Version", 6e, by Edwards & Penney, 2003, Prentice Hall.
Optional: Student's Solution Manual
A Scientific Calculator will be needed

Prerequisite: Math 2200 Calculus I with a passing grade. Those students for which several years have passed since studying Calculus I may need to review it.

Course Description: Methods of Integration, Application of Integration: area, volume, arc length, surface area, moments and center of gravity, work, hydrostatic pressure; Differential Equations.

Textbook Sections:	Chapter 5	Sections	3-8
	Chapter 6	Sections	1-6, 7, 8
	Chapter 7	Sections	2-7
	Chapter 8	Sections	1, 3-7.

Course Requirements

1. Last day to withdraw without receiving a WF is July 9. Only students currently passing will receive a W.

2. Lectures are in integral part of the course. All attempts should be made to attend each session. Because of the extensive material to be covered, missing lectures would result in a loss of continuity. Roll will be taken daily. Arrival late to class is disruptive, and you will be counted absent. If you leave the room, do not bother to return. If there are medical reasons you must leave please notify me now. You will be required to provide documentation of any medical condition. Excessive absences could result in possible withdrawal from the course. If you leave the class early you will be considered absent that day.

3. Reading the text and working the assigned exercises is a must. Suggested Assignments will be given with each section.

4. It will be probably require 6-8 hours minimum of outside study per week to successfully master the material.

5. Students are responsible for all material covered or assigned in class, whether or not it is in the text.

6. If you are absent the day a test is returned, you will have to pick it up in my office during announced office hours.

7. All work submitted for credit is assumed to be the students alone. Any plagiarism or cheating will be dealt with severely. Cheating on a test or exam will receive a O.

8. There will be **no make-up tests or exams.**

9. Last day of class is August 3.

Evaluations: Tentative Dates

Tests:

Monday	June 21	100 points
Tuesday	July 06	100 points
Thursday	July 22	100 points

Reviews:

Review #0	June 21	30 points
Review #1	July 06	30 points
Review #2	July 22	30 points
Review #3	August 03	30 points

Quizzes: 12 quizzes, each counts 10 points, I will drop 4 lowest grades – total 80 points

Final	**Aug 4-6**	100 points
		600 Total

Grades will be determined as follows:

90% of 600 points = 540 points for an A
80% of 600 points = 480 points for a B
70% of 600 points = 420 points for a C
60% of 600 points = 360 points for a D
Below 360 points is not passing.

Office Hours: MTTh 12:45 p.m. - 2:45 p.m. or before the class – welcome to stop by Boyd Graduate Building room 525

Phone: 706-542-2555
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This syllabus provides a general plan for the semester, deviations may be necessary.

SYLLABUS FOR MATH 2210

Text: Edwards and Penney, *Calculus*, Early Transcendentals Version, Sixth Edition, 2003

Editorial Remarks: We are trying to include more applications and a serious introduction to first- and second-order differential equations. Numerical methods, such as trapezoidal and Simpson's rules and Euler's method in differential equations, will be treated in the lab.

I. Riemann sums and the integral

5.3 Elementary area computations (1 day)
Core problems: pp. 326–7, #37, 38, 49, 50.

5.4 Riemann sums and the integral (2 days)
Core problems: pp. 337–8, #3, 7, 10, 13, 23, 33, 45, 46.

5.5 Evaluation of integrals (2 days)
Core problems: pp. 347–8, #3, 8, 16, 26, 28, 43, 47, 54.

5.6 Fundamental Theorem of Calculus (2 days)
Core problems: pp. 356–9, #9, 17, 23, 33, 36, 43, 45, 48, 55, 56, 67.

5.7 Integration by substitution (2 days)
Core problems: pp. 365–8, #13, 21, 23, 27, 35, 41, 53, 55, 65, 71, 77, 78.

II. Applications of the integral

5.8 Areas of plane regions (2 days)
Core problems: pp. 375–8, #5, 15, 25, 45.

6.1 Riemann sum approximations (2 days)
(Include biological applications.)
Core problems: pp. 406–8, #25, 35, 37, 39, 42, 43, 49.

6.2 Volumes by cross-sections (2 days)
Core problems: pp. 416–9, #2, 3, 4, 21, 23, 27, 39, 41, 42, 46, 47.

6.3 Volumes by cylindrical shells (2 days)
Core problems: pp. 425–7, #5, 6, 8, 15, 17, 18, 43.

6.4 Arclength (optional)

6.5 Force and work (2 days)
(Emphasize setting up work problems from first principles. Omit discussion of pressure.)
Core problems: pp. 445–8, #7, 9, 11, 12, 13, 17, 19, 28.

III. Transcendental functions and techniques of integration

6.7 The natural logarithm as an integral (1 day)
(Skip a^x and $\log_a x$, other than mentioning that $a = e^{\ln a}$ and $a^x = e^{x \ln a}$.)
Core problems: p. 488, #53, 54, 56, 58, 62.

6.8 Inverse trigonometric functions (2 days)
(Treat only arcsin and arctan.)
Core problems: pp. 475–7, #1, 3, 5, 6, 9, 10, 19, 23, 35, 36, 41, 48, (65).

7.2 Integral tables and review of simple substitutions (1 day)
Core problems: pp. 495–6, #3, 9, 12, 13, 16, 17, 23, 25.

7.3 Integration by parts (2 days)
Core problems: pp. 501–3, #1, 5, 7, 10, 12, 13, 15, 20, 21, 41, 53.

7.4 Trigonometric integrals (2 days)
Core problems: pp. 509–10, #1, 5, 11, 13, 23, 24, 47, 53.

7.5 Rational functions and partial fractions (1 day)
(Do quadratic denominators only. Simple cases will be used in §8.5.)
Core problems: pp. 516–7, #1, 3, 4, 6, 9, 38, 41, 45.

7.6 Trigonometric substitutions (2 days)
Core problems: pp. 521–2, #1, 3, 5, 10, 14, 23, 50.

7.7 Integrals involving quadratic polynomials (1 day)
Core problems: pp. 526–8, #1, 3, 5, 11, 15, 37, 38, 39.

IV. Differential Equations

8.1 Simple equations and models (1 day)
Core problems: pp. 557–9, #7, 15, 20, 25, 28, 41.

8.3 Separable equations and applications (2 days)
Core problems: pp. 576–7, #5, 19, 27, 33, 34, 35, (41).

8.4 Linear equations and applications (2 days)
Core problems: pp. 587–9, #1, 3, 7, 15, 23, 27, 32, 43.

8.5 Population models (2 days)
Core problems: pp. 597–9, #1, 7, 13, 15, 17, 18, 23.

8.6, 8.7 Linear second-order equations and mechanical vibrations (3 days)
Core problems: p. 608, #1, 5, 17, pp. 618–20, #3, 11, 17, 21, (26).

This adds up to 41 days, allowing 4 days for review and exams.