

Syllabus: MAC 2311

Calculus—Analytic Geometry I

**Department of Mathematical Sciences
Charles E. Schmidt College of Science
Florida Atlantic University**

***Fall 2006. MAC 2311 (sec 12942), Calculus—Analytic Geometry I,
4 credits.***

Instructor

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Class Time and Place

Monday, Wednesday, Thursday and Friday: 3:00 – 3:50 p.m., GS 116.

Office Hours

Monday, Wednesday, Friday: 10:00 – 11:30 a.m. or by appointment. Also, feel free to just come to the office—whenever time permits, questions and discussions are welcome. (If there should be any timing conflicts, like inevitable meetings during regular office hours, this will be announced beforehand in class, whenever possible.)

Course Web Site

<http://www.math.fau.edu/~srainer/MAC2311/>

Required Text and Materials

The course material is taken from the book *Single Variable Calculus, Early Transcendentals* (James Stewart, 5th edition, Thomson Brooks/Cole, 2003). If supplementary material is necessary, this will be distributed in class or on the course web site as needed.

Course Objectives

The course provides an introduction to standard techniques from calculus with a single variable. The main focus is on the concepts and computation of limits, derivatives and integrals. After completion of the course, you should be acquainted with the basic definitions and techniques to compute limits, derivatives and integrals and also with methods and techniques for computing them.

Also, after completion of the course, you should be able to apply these techniques in different contexts. You should be able to translate different types of theoretical and practical problems into mathematical terms and then calculate the solution.

Lecture Schedule

The lectures cover Chapter 2—Chapter 5 of the book *Single Variable Calculus, Early Transcendentals* (James Stewart, 5th edition, Thomson Brooks/Cole, 2003). The exact time frame per item varies (also in dependence of previous knowledge of the course participants), but a typical time frame is one week per item.

1. Concept of limit, definition and calculation of limits
2. Tangents, velocities, and other rates of change
3. Concept of a differentiable function
4. Derivatives of polynomials and exponential functions
5. Computing the derivative of products and quotients
6. Applications, trigonometric functions
7. Chain rule for derivatives
8. Implicit differentiation
9. Higher derivatives, logarithmic and hyperbolic functions
10. Computing minima and maxima of functions
11. Mean value theorem, l'Hospital's rule
12. Graphing curves
13. Applications
14. Concept of the integral, fundamental theorem of calculus
15. Substitution rule for integrals

Assessment Procedures

There will be three homework projects $\{H_1, H_2, H_3\}$, a 45min exam X_1 and a comprehensive 2h final exam X_2 . The scheduled dates and maximum number of points for each of these items are given in the following table.

Item	Date	Max. points
H_1	Sep 13, 2006	20
X_1	Sep 29, 2006	20
H_2	Oct 9, 2006	20
H_3	Nov 3, 2006	20
X_2	Dec 3, 2006	40

Exams will be given in class. Homework projects will be assigned in class and collected on the date specified on the assignment. Late assignments will not be accepted and graded with 0 points.

Your overall grade in the course is derived from your cumulative performance as follows:

1. The lowest number of points achieved in the items $\{H_1, H_2, H_3\}$ is dropped. The points from the remaining two items and of the two items $\{X_1, X_2\}$ are added, yielding a final number of points $0 \leq P \leq 100$.
2. Your grade is derived from P according to the following table.

Value of P	Grade
> 94	A
$> 90 - 94$	A-
$> 87 - 90$	B+
$> 83 - 87$	B
$> 80 - 83$	B-
$> 75 - 80$	C+
$> 65 - 75$	C
$> 60 - 65$	C-
$> 57 - 60$	D+
$> 53 - 57$	D
$\geq 50 - 53$	D-
< 50	F

Graded exams and homework projects will be returned in class or can be picked up during office hours at the instructor's office. At the end of the course, the final grades will, in anonymized form, be available in front of the instructor's office (room SE 280).

Please keep all your exams and documentation of homework projects, so that a possible disagreement about your grade can be resolved.

Make-up Tests and Extra Credit

If you cannot attend an exam or hand in a homework project in time due to a relevant reason like significant health problems or being involved in a major traffic accident, you can make up the respective assignment.

Extra credit work is not possible.

Course Procedure

The course is conducted in lecture/discussion style.

Students with Disabilities

In compliance with the Americans with Disabilities Act (A.D.A.) – Students who require special accommodations due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) located in Boca – SU 133 (561-297-3880), in Davie – MOD I (964-236-1222), or in Jupiter – SR 117 (561-799-8585) and follow all OSD procedures.

Incomplete Grades

A grade of *I* (incomplete) will only be given under certain conditions and in accordance with the academic policies and regulations put forward in FAU's *Student Handbook* (http://wise.fau.edu/dean/handbook/Boca/1_6.htm). The student has to show exceptional circumstances why requirements cannot be met. A request for an incomplete grade has to be made in writing with supporting documentation, where appropriate.

Classroom Etiquette and Academic Integrity

Please refer to FAU's *Student Handbook* (http://wise.fau.edu/dean/handbook/Boca/1_6.htm).