Syllabus:
MAC 2311 Calculus–Analytic Geometry I

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

Fall 2012. MAC 2311-003 (CRN 82490) Calculus–Analytic Geometry I

Instructor
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Phone: (561) 297-3353
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Prerequisites
(Minimum Grade of C in MAC 1140 Precalculus Algebra and
Minimum Grade of C in MAC 1114 Trigonometry) or
Minimum Grade of C in MAC 1147 Precalculus Algebra & Trigonometry or
Total Score ≥65 in ALEKS

Class Time and Place
Monday and Wednesday: 1:00–2:50 pm, SC 179

Office Hours
Monday and Wednesday: 3:30pm–5pm or by appointment. Also, feel free to come to the office anytime—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://math.fau.edu/~srainer/MAC2311Fall2012/

Required Text and Materials
The course material is taken from the book Single Variable Calculus, Early Transcendentals (James Stewart, 7th edition, Thomson Brooks/Cole, 2011). Having access to this particular textbook may be helpful, but is not mandatory for following the course. 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.
Lecture Schedule

The lectures cover Chapter 2–Chapter 5 of the book *Single Variable Calculus, Early Transcendentals* (James Stewart, 7th edition, Thomson Brooks/Cole, 2011). 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 five homework projects \( \{H_1, H_2, H_3, H_4, H_5\} \), a midterm exam \( X_1 \) and a comprehensive final exam \( X_2 \). The scheduled dates and maximum number of points for each of these items are given in the following table.

<table>
<thead>
<tr>
<th>Item</th>
<th>Date</th>
<th>Max. points</th>
</tr>
</thead>
<tbody>
<tr>
<td>( H_1 )</td>
<td>Sep 5, 2012</td>
<td>15</td>
</tr>
<tr>
<td>( H_2 )</td>
<td>Sep 19, 2012</td>
<td>15</td>
</tr>
<tr>
<td>( H_3 )</td>
<td>Oct 17, 2012</td>
<td>15</td>
</tr>
<tr>
<td>( H_4 )</td>
<td>Oct 31, 2012</td>
<td>15</td>
</tr>
<tr>
<td>( H_5 )</td>
<td>Nov 14, 2012</td>
<td>15</td>
</tr>
<tr>
<td>( X_1 )</td>
<td>Oct 3, 2012</td>
<td>25</td>
</tr>
<tr>
<td>( X_2 )</td>
<td>Dec 2, 2012</td>
<td>30</td>
</tr>
</tbody>
</table>

Exams will be given in class or as take-home exam. Homework projects and take-home exams will be assigned in class at the date specified above and are due 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 two lowest scores achieved in the items \( \{H_1, H_2, H_3, H_4, H_5\} \) are dropped. The points from the remaining three items and of the two items \( \{X_1, X_2\} \) are added, yielding a final score \( 0 \leq P \leq 100 \).
2. Your grade is derived from $P$ according to the following table.

<table>
<thead>
<tr>
<th>Value of $P$</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 94</td>
<td>A</td>
</tr>
<tr>
<td>&gt; 90 – 94</td>
<td>A−</td>
</tr>
<tr>
<td>&gt; 87 – 90</td>
<td>B+</td>
</tr>
<tr>
<td>&gt; 83 – 87</td>
<td>B</td>
</tr>
<tr>
<td>&gt; 80 – 83</td>
<td>B−</td>
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<tr>
<td>&gt; 75 – 80</td>
<td>C+</td>
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<tr>
<td>&gt; 65 – 75</td>
<td>C</td>
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<tr>
<td>&gt; 60 – 65</td>
<td>C−</td>
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<tr>
<td>&gt; 57 – 60</td>
<td>D+</td>
</tr>
<tr>
<td>&gt; 53 – 57</td>
<td>D</td>
</tr>
<tr>
<td>≥ 50 – 53</td>
<td>D−</td>
</tr>
<tr>
<td>&lt; 50</td>
<td>F</td>
</tr>
</tbody>
</table>

*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, and you document this, then you can make up the respective assignment. Extra credit work is not possible.

*Method of Instruction*
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 – LA 240 (954-236-1222), 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 *University Catalog*. 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*
Students are responsible for informing themselves about FAU’s Code of Academic Integrity before performing any academic work—more detailed information is available at the URL http://www.fau.edu/regulations/chapter4/4.001_Code_of_Academic_Integrity.pdf. Scholastic dishonesty includes, but is not limited to, plagiarism and copying other’s work during an exam. Any exam or written assignment for which you are caught cheating will be marked as a zero grade, and the incident will be reported in accordance with the Code of Academic Integrity.