Math 235 Calculus I (Spring 2014)

Class times and Rooms:
Section 0003: Mon-Wed-Fri 1:25- 2:15 p.m. and Thurs 2:00-3:15.

Room: Burruss 130 on Mon-Wed-Fri and Roop 213 on Thurs.

Section 0004: Mon-Wed-Fri 2:30- 3:20 p.m. and Thurs 3:30-4:45.
Room: Burruss 130 on Mon-Wed-Fri and Roop 213 on Thurs.

About the Class

This is a first university class in Calculus. We will study functions of one variable. We will cover limits, differentiation, integration, and the Fundamental Theorem of Calculus. The treatment will include theory as well as applications.

Goals

- Limits: Graphical and computational evaluation of limits. Formal definition of a limit. Understand how to prove the existence of a limit ("delta-epsilon proofs"). Limit rules.
- Continuity: Intuitive and formal definition of continuity of a function at a point
- Differentiation. Conceptual understanding of derivative (slope of tangent line, instantaneous rate of change). Calculating derivative based on formal definition. Understanding derivative rules, including chain rule. Calculating derivatives of the exponential and logarithm function.
- Derivative applications: Related rate problems. Extreme value problems. Determining relative maxima and minima of a function and intervals of increase/decrease using first derivative. Determining concavity and inflection points using second derivative. Using derivative and second derivative information to graph functions. Using calculus to solve optimization problem
- Integration: Estimating area under a curve with Riemann sums. Calculating area under a curve using limits of Riemann sums. Calculating integrals using basic rules. Understanding and applying the Fundamental Theorem of Calculus to calculate definite integrals

Prerequisites

Score of 30 or higher on the math placement test, if this test was taken alone and unaided, as well as proficiency in high school algebra, geometry, and trigonometry. Students who are weak in these areas are advised to consider MATH 231/232 in place of MATH 235.

Instructor

Hala Al Hajj Shehadeh
Office: 118 Roop Hall
Office phone: 540 568 3807
E-mail: alhajjhy@jmu.edu

Office Hours

Mon: 12:00-12:50 p.m. Wed: 3:30-4:20 p.m. Thurs 1:00-1:50 p.m.
Please let me know early in the semester if these office hours are not convenient for you.

Course Webpage

Is on **my website (http://educ.jmu.edu/~alhajjhy/)**. Syllabus, **Homework assignments**, announcements will all be found there.

Course Text

Calculus by Laura Taalman and Peter Kohn. (W.H. Freeman and Company, New York 2014).

Grading Policy

Homework assignments and quizzes: 35%
In-class Midterm Exam: 30%
Final Exam: 35%

Please let me know in the first two weeks of classes about any documented condition that requires extra time to complete the exams.

Exam Schedule

Every two to three weeks there will be a 10-15 minute quiz (the exact day of each quiz will be announced 3 days ahead). **There is no makeup for the quizzes**.

In-class Midterm Exam: **Mon, Mar 3 2014.**
In-class Final Exam:
Section 0003: Fri, May 2 2014 from 10:30 a.m. till 12:30 p.m.
Section 0004: Mon, May 5 2014 from 1:00 p.m till 3:00 p.m.

You **cannot** reschedule an exam. A makeup exam is possible only due to an (extreme) emergency situation.

H.w. Assignments

There will be weekly H.w. assignments.
The **H.w. will be assigned on Thurs of each week and collected the next Thurs in class or on my office door**.
Late H.w. will not be accepted.

You are allowed and encouraged to work in groups, but each of you should write down and submit a separate copy.
The H.w. should be written **very neatly** and very carefully.
We will check the following:
1) completeness of the H.w.
2) which problems gave the most trouble.
3) Only selected problems will be graded very carefully.
On the week where there are both H.w. assignment and quiz, only the quiz may be graded. However, one question on the quiz will be from that H.w. assignment.

Honor code

Remember that JMU has a strict honor code. While you are strongly encouraged to work with others in this class, the work you submit must be your own. Copying someone else's work won't help you learn the material and might just get you expelled.

Nature of the Course Content(directly from the course catalog)

MATH 235*-236. Calculus I-II.4 credits each semester. Offered fall and spring.Differential and integral calculus of functions of one variable. Sequences and infinite series. Prerequisite for MATH 235: Sufficient score on the Mathematics Placement Exam. Prerequisite for MATH 236: MATH 232 or MATH 235 with grade of "C" or better. MATH 235 is not open to students who have already earned credit in MATH 232

Material Covered

The plan is to cover the first five chapters (chapters 0, 1, 2, 3 and 4) in the textbook. **Expect to have group work in class, sometimes during the Quizzes**.

We will mostly follow the following plan. We might be a bit faster or slower on few occasions.

Week 1 (4 classes) Jan 13-Jan 17: Chapter 0: 0.1, 0.2.

Week 2 (3 classes) Jan 22- Jan 24: Chapter 0: 0.3, 0.4.

Week 3 (4 classes) Jan 27- Jan 31: Chapter 0: 0.4, 0.5.

Week 4 (4 classes) Feb 3- Feb 7: Chapter 1: 1.1, 1.2.

Week 5 (4 classes) Feb 10- Feb 14: Chapter 1: 1.3, 1.4.

Week 6 (4 classes) Feb 17- Feb 21: Chapter 1: 1.4, 1.5.

Week 7 (4 classes) Feb 24- Feb 28: Chapters 1 & 2: 1.6, 2.1, 2.2.

Week 8 (3 classes and **Midterm exam**) Mar 3- Mar 7: Chapter 2: 2.3. - **Midterm Exam on Monday March 3 2014**.

Week 9 (no classes) Spring Break.

Week 10 (4 classes) Mar 17- Mar 21: Chapter 2: 2.4, 2.5, 2.6.

Week 11 (4 classes) Mar 24- Mar 28: Chapter 3: 3.1, 3.2.

Week 12 (4 classes) Mar 31- Apr 4: 3: 3.3, 3.4.

Week 13 (4 classes) Apr 7- Apr 11: Chapter 3: 3.5, 3.6.

Week 14 (4 classes) Apr 14- Apr 18: Chapter 4: 4.1, 4.2.

Week 15 (4 classes) Apr 21- Apr 25: Chapter 4: 4.3, 4.4.

Week 16 (3 classes) Apr 28- May 1: Chapter 4: 4.5 and Review.