Course Outline for Mathematics 30
Single Variable Calculus
Fall 2011

Time and Place: MW 2:45 - 4:00 pm at Davidson Lecture Hall.

Instructor: Asuman Guven Aksoy

Office: Adams 215, Campus x72769 Off-Campus: dial 607-2769

Email: aaksoy@cmc.edu

Office Hours: MW 1:30 – 2:30pm, and by appointment

Text: *Single variable essential calculus Early Transcendentals*, James Stewart, Brooks/Cole, 2007

Course Description:

This course is an introduction to differential and integral calculus. No previous knowledge of calculus will be assumed. However, a good working knowledge of algebra and elementary functions are essential for an enjoyable and successful class. The acquisition of a thorough understanding of the concepts and ideas of calculus is one of the mail goals of this course. The other main goal is the development of formal reasoning skills, as well as the improvement of problem solving skills/ Some interesting problems will be studied as application of calculus to motivate the students. Tentative topics of the course and the exam schedules are enclosed.

Assigned Reading and Problems:

Lectures are not a substitute for studying the text and working out the assigned problems. Problem sets will be assigned after each lecture and collected each week. Students are strongly encouraged to work on every assigned problem.

Exams:

Three midterm exams (%15 each)

Final exam (%40)

Homework (%15)

Grading Policy:

(A's: 90-100%, B's: 80-89%, C's: 70-79%, D's: 60-69%, F's: below 60%)

Make-up Exam Policy:

There will be no make-up exams. If you miss an exam with an approved excuse, your final exam will be more heavily weighed accordingly. The final will not be re-scheduled for any reason, unless an incomplete has been granted.

After completing this course:

You should be able to differentiate and integrate without any problems and understand application of differentiation (applications of integration are done in Math 31). You are also expected to understand and appreciate the beauty and strength of the following theorems/definitions:

1)   Definition of the derivative:

$$f'(x) = \lim_{h \to 0} \frac{f(x+h) - f(x)}{h}$$

2)   The Chain Rule:

If $y = f(g(x))$ and $u = g(x)$, then $\dfrac{dy}{dx} = \dfrac{dy}{du} \cdot \dfrac{du}{dx}$

3)   The Mean Value Theorem

4)   Areas as Limits and Definite Integrals:

$$\int_a^b f(x)dx = \lim_{n \to \infty} \sum_{k=1}^{n} f(x_k^*) \Delta x_k$$

5)   First Fundamental Theorem of Calculus
6)   Second Fundamental Theorem of Calculus

Tutoring:

CMC Mathematics Department employs several undergraduate and two graduate tutors to help with your homework problems or course material. Their schedules will be distributed later. Tutoring will be held in the Math Commons Room, Adams 213.

Exam Schedule:

Midterm Exams: September 28th, October 24th, November 23rd
Final Exam: December 16, 2:00 pm.

Grader:

Merriel Foster
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