MATH 2144, Calculus I, Syllabus
Section 702: 9:30-10:20 AM, MTWF, HSCI 029

Instructor: Dr. Jim Choike, Professor of Mathematics
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                Office Hours: By appointment

Prerequisites: A satisfactory score (minimum 70) on the ALEKS placement exam, or a grade of C or better in a college-level course in Trigonometry or Pre-Calculus

Required Materials: (1) Textbook: Calculus: Early Transcendentals, 2nd edition, by Jon Rogawski, and (2) Online homework system WebAssign (http://www.webassign.net)

Cell phones: Cell phones MUST be turned off and OUT-OF-VIEW during class. Cell phones cannot be used during class for any purpose; this includes, but is not restricted to, making or receiving phone calls, sending or receiving text messages, taking photographs during class, or using a cell phone for calculations.

Goals and expectations for the course:
- Calculus deals with functions, mathematical objects that relate two varying quantities, and the rules that govern the rates at which one of these quantities changes or accumulates with respect to the other. Our goal in this course is to ensure that you understand the concepts and tools of Calculus, that you master the skills required to use those tools, and that you will be able to apply those ideas to solve problems in many disciplines.
- Thinking and reasoning with mathematics
- Written and oral explanations
- Rule of Four: representing mathematics algebraically, graphically, numerically, and verbally
- Learning how to learn mathematics:
  - Reading the text;
  - Taking notes to highlight things that are important and things that you want to make sure to remember;
  - Learning from your mistakes;
  - Practicing, i.e., doing homework: Sophocles (497 – 406 BCE) captured the value of "practice" in mathematics when he said "One learns by doing the thing; for though you think you know it, you have no certainty until you try";
  - Asking questions;
  - Learning from and with peers.

Graphing Calculator Usage: Graphing calculators can be a valuable tool for investigating, learning, and applying the ideas of calculus throughout the sciences and engineering. However, facility with calculator usage is not a substitute for your own conceptual understanding or procedural skill. In this course, graphing calculator usage will be permitted on exams as long as your calculator does not have wireless or Internet capability, a QWERTY keyboard, or a camera. If you do not own an acceptable graphing calculator, you may borrow one from the Math Department office without charge, starting Tuesday, August 21. Exams in this course will consist of free response questions that will require you to show all steps in your solutions and to fully justify your conclusions. We strongly recommend that your best exam preparation will be to write out homework solutions by hand, in a manner that is consistent with exam expectations using your calculator for numerical steps and for checking your work.

Final Grade for the Course: The Course Final Grade will be based on the following requirements:

 Exams, worth 70% of your grade, consist of 3 hourly exams and a comprehensive final exam. Your exam grade is determined in one of two ways, based on which produces a higher average:

 Option 1: Hourly exams 15% each, Final exam 25%
 Option 2: Hourly exams 10% each, Final exam 40%

 Exam 1, Wednesday, September 19; Chapters 1, 2, and Sections 3.1 and 3.2;
 Exam 2, Wednesday, October 24; Chapter 3 and Sections 4.1, 4.2, 4.3, and 4.4;
 Exam 3, Wednesday, November 28; Chapter 4, Chap. 5 Sections 1-8;
 Final Exam: Tuesday, December 11, 12:00--1:50 PM in **CLBN (North Classroom Bldg) 101**

 WebAssign Assignments, worth 10% of your grade, are online homework assignments corresponding to all sections of the text, typically due a few days after each section is covered in class. You should download and print out each assignment, write solutions in a homework notebook (either loose leaf or spiral bound), and then enter solutions into the online system by the due date.

 The class key for Math 2144, Section 017 in WebAssign, our online homework system, is: **okstate 9842 7952.** Students should set up their account and self-enroll for access to our section during the first week of class at https://www.webassign.net/login.html.

 Written Assignments and Quizzes will be worth 20% of your grade. Quizzes will be unannounced and over the content covered in class, in the text, and from the WebAssign online system. At a minimum 12 quizzes will be given, each worth a maximum of 10 points. The ten highest scores will be used as the Quiz Score and will count for 10% of your grade. There will also be about 8-10 written assignments that will count for 10% of your grade. Many of these written assignments will be Group assignments.

 The Course Grade: The course averages given below guarantee the stated grade. These cutoff scores may be lowered if circumstances warrant:

 90% guarantees the grade of A in the course,
 80% guarantees the grade of B,
 70% guarantees the grade of C,
 60% guarantees the grade of D.

The Mathematics Learning Success Center (MLSC) is on the first floor of the Edmon Low Library. The MLSC has tutors who are able to work with students from Calculus I and help you with your questions. Hours for Calculus I will take place in the Library during the following hours:

 Monday through Thursday from 1:00 PM until 9:00 PM;
 Friday from 1:00 PM until 5:00 PM;
 Sundays from 3:00 PM until 9:00 PM.

Important Dates:

 Monday, August 27, 2012: Last day to drop a course with no grade and no fees.
 Friday, August 31, 2012: Last day to drop a course with 50% fees and grade of "W"
 Monday, September 3: Labor Day.
 Tuesday, October 2, 2012: Six-week grades are due
 Friday, October 5, 2012: Fall Break Day
 Friday, November 9, 2012: Last day to drop or withdraw with an automatic grade of "W"
 Friday, November 30, 2012: Last day to drop with an assigned grade of "W" or "F."
 December 3-7, 2012: Pre-Finals Week
 December 10-14, 21012: Finals Week

MATH 2144 Calculus I Syllabus

Textbook: *Calculus* 2e by Jon Rogawski.

8/20	M	Pre-calculus Review: Sect. 1.1, 1.2, 1.3, 1.4, 1.5, and 1.6
8/21	T	Introducing Calculus
8/22	W	Sect. 2.1: Limits: Rate of Change and Tangent Lines
8/24	F	Sect. 2.1: Continued
8/27	M	Sect. 2.2: Limit: a numerical and graphical approach
8/28	T	Sect 2.3: Basic Limit Laws
8/29	W	Sect. 2.4: Limits and Continuity
8/31	F	Sect. 2.5: Evaluating Limits Algebraically
9/3	M	**Labor Day**
9/4	T	Sect. 2.5: Continued
9/5	W	Sect. 2.6: Trig Limits (Read) Sect. 2.7: Limits at Infinity
9/7	F	Sect. 2.8: Intermediate Value Theorem
9/10	M	Sect. 3.1: Definition of the Derivative
9/11	T	Sect. 3.2: The Derivative as a Function
9/12	W	Sect. 3.3: Product and Quotient Rules
9/14	F	Sect. 3.4: Rates of Change
9/17	M	Sect. 3.4: Continued
9/18	T	**Review for Exam 1**
9/19	W	**Exam 1: Chapters 1, 2, and 3.1, 3.2**
9/21	F	Sect. 3.5: Higher Derivatives (Read) Sect. 3.6: Trig Functions
9/24	M	Sect. 3.7: The Chain Rule
9/25	T	Sect. 3.8: Derivatives of Inverse Functions
9/26	W	Sect. 3.9: Exponential and Log Derivatives
9/28	F	Sect. 3.10: Implicit Differentiation
10/1	M	Sect. 3.11: Related Rates
10/2	T	Sect. 3.11: Continued
10/3	W	Sect. 4.1: Linear Approximations and Applications
10/5	F	**Fall Break Day**
10/8	M	Sect. 4.1: Continued
10/9	T	Sect. 4.2: Extreme Values
10/10	W	Sect. 4.3: The MVT and Monotonicity
10/12	F	Sect. 4.3: Continued

10/15	M	Sect. 4.4: The Shape of a Graph
10/16	T	Sect. 4.4: Continued
10/17	W	Sect. 4.5: L'Hopital's Rule
10/19	F	Sect. 4.6: Graph Sketching and Asymptotes
10/22	M	Sect. 4.7: Applied Optimizations
10/23	T	**Review for Exam 2**
10/24	W	**Exam 2: Chapter 3 and 4.1, 4.2, 4.3, 4.4**
10/26	F	Sect. 4.7: Continued
10/29	M	Sect. 4.9: Antiderivatives
10/30	T	Sect. 5.1: Approximating and Computing Area
10/31	W	Sect. 5.1: Continued
11/2	F	Sect. 5.2: The Definite Integral
11/5	M	Sect. 5.2: Continued
11/6	T	Sect. 5.3: FTC, Part I
11/7	W	Sect. 5.4: FTC, Part II
11/9	F	Sect. 5.5: Net or Total Change as the Integral of a rate
11/12	M	Sect. 5.6: The Substitution Rule
11/13	T	Sect. 5.7: Further Transcendental Functions
11/14	W	Sect. 5.8: Exponential Growth and Decay
11/16	F	Sect. 5.8: Continued
11/19	M	Sect. 6.1: Areas between Two Curves
11/20	T	Sect. 6.2: Setting up integrals: volume, density, average value
11/21	W	**Thanksgiving Break**
11/23	F	**Thanksgiving Break**
11/26	M	Sect. 6.2: Continued
11/27	T	**Review for Exam 3**
11/28	W	**Exam 3: Sections 4.5-7,9; 5.1-8, 6.1**
11/30	F	Sect. 6.3: Volumes of Revolution

PRE-FINALS WEEK

12/3	M	Sect. 6.3: Continued
12/4	T	Sect. 6.4: Volumes: Shell Method
12/5	W	**Review for Final Exam**
12/7	F	**Review for Final Exam**

FINAL EXAM WEEK: 12/10 - 12/14

Final Exam for Calculus, 2144.702: Tuesday, December 11, 12:00 - 1:50 PM **Place: CLBN 101**