CALCULUS 1 MWTF 2:00-2:50PM FALL 2016 SH 309

Instructor:	Jonathan White
E-Mail:	JWhite@Coe.Edu
Web Page:	public.coe.edu/~jwhite
Office:	Stuart 316
Office Hours:	MTWF 9:20-9:50am, 3:00-3:30pm, and by appointment
Office Phone:	399-8280
Home Phone:	362-3350 (between 7am and 10pm)
Text:	*Essential Calculus, Early Transcendentals*, Second Edition, by James Stewart
Problem Sets and Quizzes:	Assorted Problem Sets will be given throughout the term to supplement class work. Many of these will benefit from the use of the software package *Mathematica*, which is available on the computers in the labs in Stuart and Peterson Halls. Several assignments will be made through the WeBWorK system, and quizzes will be given occasionally. Combined these will be worth 200 points (25% of the final grade).
Exams:	There will be four exams during the course of the semester. The dates of these are indicated in the schedule on the back of this sheet. These exams will be worth 100 points (12.5% of the final grade) each. The final exam will be held at the scheduled time during finals week and will be worth 200 points (25% of the final grade).
Grading:	Grading will approximately follow a $[92.0\%, \infty) \to$ A, $[90\%, 92\%) \to$ A–, $[87\%, 90\%) \to$ B+, $[82\%, 87\%) \to$ B, $[80\%, 82\%) \to$ B–, $[77\%, 80\%) \to$ C+, $[72\%, 77\%) \to$ C, $[70\%, 72\%) \to$ C–, $[67\%, 70\%) \to$ D+, $[62\%, 67\%) \to$ D, $[60\%, 62\%) \to$ D–, $(-\infty, 60\%) \to$ F scale. Current grade information will be available online through Moodle at all times.
Makeups:	For the sake of fairness to those who follow the schedule, makeups for exams will be allowed only under extenuating circumstances, with documentation and advance notice when humanly possible. Late problem sets and quizzes will generally not be accepted, and if accepted due to extenuating circumstances will generally be subject to a penalty of 20% of the possible points for each day past due.

The "Big Idea" of Calculus is using mathematics to deal with change. Calculus 1 deals primarily with rates of change, whether they be of quantities that change as time goes by or quantities that change as some other quantity is adjusted. These ideas cut across all quantitative disciplines – whether it's a falling stone, a falling stock, a declining population, or an endothermic reaction, there are mathematical commonalities, and those are what Calculus deals with.

In addition to regular exams, all students must successfully complete a computer-administered gateway exam over computing derivatives in order to pass this course.

Calculus is a demanding course in many ways. It requires both a level of computational proficiency and also a level of conceptual understanding beyond any prior mathematics course. Yet because of or despite these difficulties, students who have previously found math classes easy because of an aptitude for moving symbols around might find that there is more to this class than they expect, and students who have in the past felt they weren't good at math might find this class more suited to them. In either case, this class might not be quite what you're used to, and it might be unsettling at first. Give it some time, and feel free to take advantage of my office hours to help past the rough spots.

CALCULUS 1 MWTF 2:00-2:50PM FALL 2016 SH 309

Tentative Schedule

		Wednesday 8/24 §1.1 Functions	Friday 8/26 §1.1 Functions
Monday 8/29 §1.2 Catalog of Functions	Tuesday 8/30 §1.2 Catalog of Functions	Wednesday 8/31 Intro to Sage	Friday 9/2 §1.3 Limits
Monday 9/5 No Class – Labor Day	Tuesday 9/6 §1.4 Calculating Limits	Wednesday 9/7 §1.4 Calculating Limits	Friday 9/9 §1.5 Continuity
Monday 9/12 §1.6 Limits Involving Infinity	Tuesday 9/13 §1.6 Limits Involving Infinity	Wednesday 9/14 Review for Exam	Friday 9/16 **Exam 1**
Monday 9/19 §2.1 Rates of Change	Tuesday 9/20 §2.2 The Derivative	Wednesday 9/21 §2.2 The Derivative	Friday 9/23 §2.3 Differentiation Formulas
Monday 9/26 §2.4 Product & Quotient Rules	Tuesday 9/27 §2.4 Product & Quotient Rules	Wednesday 9/28 §2.5 The Chain Rule	Friday 9/30 §2.6 Implicit Differentiation
Monday 10/3 §2.7 Related Rates	Tuesday 10/4 §2.8 Linear Approximation	Wednesday 10/5 Review for Exam	Friday 10/7 **Exam 2**
Monday 10/10 §3.1 Exponential Functions	Tuesday 10/11 §3.2 Inverse Functions & Logs	Wednesday 10/12 §3.3 Derivatives of Exp & Log	Friday 10/14 No Class – Fall Break
Monday 10/17 §3.3 Derivatives of Exp & Log	Tuesday 10/18 §3.4 Exponential Growth	Wednesday 10/19 §3.5 Inverse Trig Functions	Friday 10/21 §3.5 Inverse Trig Functions
Monday 10/24 §3.7 L'Hôpital's Rule	Tuesday 10/25 §3.6 Hyperbolic Functions	Wednesday 10/26 Review for Exam	Friday 10/28 **Exam 3**
Monday 10/31 §4.1 Extreme Values	Tuesday 11/1 §4.2 Mean Value Theorem	Wednesday 11/2 §4.3 Derivatives & Graphs	Friday 11/4 §4.4 Derivatives & Graphs
Monday 11/7 §4.5 Optimization	Tuesday 11/8 §4.5 Optimization	Wednesday 11/9 §4.6 Newton's Method	Friday 11/11 §4.6 Newton's Method
Monday 11/14 §4.7 Antiderivatives	Tuesday 11/15 §4.7 Antiderivatives	Wednesday 11/16 Review for Exam	Friday 11/18 **Exam 4**
Monday 11/21 No Class – Thanksgiving	Tuesday 11/22 No Class – Thanksgiving	Wednesday 11/23 No Class – Thanksgiving	Friday 11/25 No Class – Thanksgiving
Monday 11/28 §5.1 Areas & Distances	Tuesday 12/29 §5.2 Definite Integrals	Wednesday 11/30 §5.2 Definite Integrals	Friday 12/2 §5.3 Evaluating Def. Integrals
Monday 12/5 §5.4 The Fun. Thrm. of Calc.	Tuesday 12/6 §5.5 u-Substitution	Wednesday 12/7 §5.5 u-Substitution	Friday 12/9 Review for Final
Final Exam – 2pm Tuesday, 12/13			

Any students with disabilities which might affect their performance in this class should contact me as soon as possible to arrange accommodations.

Coe's faculty has adopted an academic integrity policy. It is your responsibility to understand and follow it.

Diversity, in all its forms, is valuable.

Learning Outcomes

By the end of this class each student should be able to demonstrate:

- basic understanding of limits of elementary functions.
- basic understanding of limits and continuity of elementary functions and some associated theorems.
- basic understanding of derivatives of real functions and the standard associated theorems.
- basic understanding of indefinite and definite integrals of elementary functions.
- basic understanding of the Fundamental Theorem of Calculus.
- understanding of selected applications of the above concepts.

The Provost has mandated that the material below this line appear on all syllabi:

For those of you who do not want to use the template, the following policy statements need to be on your syllabi:

? Academic Integrity

o At Coe College, we expect academic integrity of all members of our community. Academic integrity assumes honesty about the nature of one's work in all situations. Such honesty is at the heart of the educational enterprise and is a pre-condition for intellectual growth. Academic dishonesty is the willful attempt to misrepresent one's work, cheat, plagiarize, or impede other students' academic progress. Academic dishonesty interferes with the mission of the College and will be treated with the utmost seriousness as a violation of community standards.

o Please refer to the Coe College Academic Catalog for complete information regarding Academic Integrity: http://www.coe.edu/academics/dean/academicintegrity

? FERPA

o Students should be aware of their rights regarding the privacy of their educational records. Detailed information about your rights can be found under the FERPA (Family Educational Rights and Privacy Act of 1974) section in the Academic Catalog and online here: http://www.coe.edu/academics/registrar/ferpa.

o In line with FERPA restrictions, students should be aware that your instructor cannot publicly post grades by student name, institutional student identification number, or social security number without first having obtained students' written permission.

? The Definition of a Course Credit & Expected Workload:

o One course credit at Coe College constitutes 150 hours' worth of student work over the course of the term. This figure includes both the time spent in class and the time spent out of class completing course work. In other words, students are expected to devote a considerable amount of time outside of class to this course. For courses that meet in a standard M-W-F or T-Th slot, students should be expected to work seven hours a week outside of the three hours in class.

? Students with Disabilities:

o Coe College will make reasonable accommodations for persons with documented disabilities. If you have a disability which may have some impact on your work in this course, please contact the Learning Commons' Academic Coach and ADA Coordinator (Kim Pierson, x8844).

o Please note that all arrangements for accommodations must be handled through the Learning Commons. Faculty must give the opportunity of an accommodation to every student in the course or only to those students for which it is determined as a need by the Academic Coach and ADA Coordinator (Kim Pierson, x8844).

? Reporting of Sexual Misconduct

As an instructor, one of my responsibilities is to help create a safe learning environment on our campus. I also have a mandatory reporting responsibility related to my role as a faculty member. It is my goal that you feel able to share information related to your life experiences in classroom discussions, in your written work, and in any one-on-one meetings. I will seek to keep information you share with me private to the greatest extent possible. However, I am required to share information regarding sexual misconduct or students who may be in danger to themselves or to others. Students may speak to someone confidentially by contacting Student Development at 319-399-8843 or Safety and Security at 319-399-8888.