

CALCULUS 1 MWF 12:00-12:50PM & T 11:30-12:20 FALL 2015 SH 309

- Instructor: Jonathan White
- E-Mail: JWhite@Coe.Edu
- Web Page: public.coe.edu/~jwhite
- Office: Stuart 316
- Office Hours: MTWF 9:30-10:30am, Th 1:00-1:50pm, and by appointment
- Office Phone: 399-8280
- Home Phone: 362-3350 (between 7am and 10pm)
- Text: *Calculus, Early Transcendentals*, 3rd Edition, by Rogawski & Adams, Freeman Publishing
- 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%, ∞) \rightarrow A, [90%, 92%) \rightarrow A-, [87%, 90%) \rightarrow B+, [82%, 87%) \rightarrow B, [80%, 82%) \rightarrow B-, [77%, 80%) \rightarrow C+, [72%, 77%) \rightarrow C, [70%, 72%) \rightarrow C-, [67%, 70%) \rightarrow D+, [62%, 67%) \rightarrow D, [60%, 62%) \rightarrow D-, ($-\infty$, 60%) \rightarrow 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.

Tentative Schedule

Monday, 8/31 §1.1 \mathbb{R} , Functions, Graphs	Tuesday, 9/1 §1.2 Linear and Quadratic	Wednesday, 9/2 §1.3 Basic Functions	Friday, 9/4 §1.4 Trig Functions
Monday, 9/7 No Class – Labor Day	Tuesday, 9/8 §1.5 Inverse Functions	Wednesday, 9/9 §1.6 Exponential Functions	Friday, 9/11 §2.1 Idea of Limit
Monday, 9/14 §2.2 Limits Num. & Graph.	Tuesday, 9/15 §2.3 Limit Laws	Wednesday, 9/16 §2.4 Continuity	Friday, 9/18 §2.5 Limits Alg. & §2.6 Trig
Monday, 9/21 §2.7 Limits at Inf. & §2.8 IVT	Tuesday, 9/22 §2.9 Limits Rigorously	Wednesday, 9/23 Review for Exam	Friday, 9/25 Exam 1
Monday, 9/28 §3.1 & §3.2 Derivatives	Tuesday, 9/29 §3.3 Product & Quotient Rules	Wednesday, 9/30 §3.4 Rates of Change	Friday, 10/2 §3.5 Higher Derivatives
Monday, 10/5 No Class – Fall Break	Tuesday, 10/6 No Class – Fall Break	Wednesday, 10/7 §3.6 Trig Derivatives	Friday, 10/9 §3.7 Chain Rule
Monday, 10/12 §3.8 Implicit Derivatives	Tuesday, 10/13 §3.9 $(a^x)'$ & $(\log_b x)'$	Wednesday, 10/14 Review for Exam	Friday, 10/16 Exam 2
Monday, 10/19 §3.10 Related Rates	Tuesday, 10/20 §3.10 Related Rates	Wednesday, 10/21 §4.1 Linear Approximation	Friday, 10/23 §4.2 Extreme Values
Monday, 10/26 §4.2 Extreme Values	Tuesday, 10/27 Intro to Sage	Wednesday, 10/28 §4.3 Mean Value Theorem	Friday, 10/30 §4.4 Derivatives & Graphs
Monday, 11/2 §4.5 L'Hôpital's Rule	Tuesday, 11/3 More Sage	Wednesday, 11/4 §4.6 Derivatives & Graphs 2	Friday, 11/6 §4.7 Optimization
Monday, 11/9 §4.7 Optimization	Tuesday, 11/10 §4.8 Newton's Method	Wednesday, 11/11 Review for Exam	Friday, 11/13 Exam 3
Monday, 11/16 §5.1 Approximating Areas	Tuesday, 11/17 §5.2 Definite Integrals	Wednesday, 11/18 §5.3 Indefinite Integrals	Friday, 11/20 §5.4 Fun Theorem of Calc I
Monday, 11/23 §5.5 Fun Theorem of Calc II	Tuesday, 11/24 §5.6 Net Change	Wednesday, 11/25 No Class – Thanksgiving	Friday, 11/27 No Class – Thanksgiving
Monday, 11/30 §5.7 u -Substitution	Tuesday, 12/1 §5.7 u -Substitution	Wednesday, 12/2 §5.8 Transcendental Functions	Friday, 12/4 §5.9 Exponential Growth
Monday, 12/7 §6.1 Areas between Curves	Tuesday, 12/8 §6.1 Areas between Curves	Wednesday, 12/9 Review for Exam	Friday, 12/11 Exam 4
Monday, 12/14 Review for Final			
Final Exam – 11am Thursday, 12/17			

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.