# CALCULUS 1 MTWF 2:00-2:50PM FALL 2012 STUART 405

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| Instructor: | Jonathan White |
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| Web Page: | public.coe.edu/~jwhite |
| Office: | Stuart 316 |
| Office Hours: | MTWF 9:30-9:50am, MWF 11:00-11:30, and by appointment |
| Office Phone: | 399-8280 |
| Home Phone: | 362-3350 (between 7am and 11pm) |
| Text: | *Calculus, Early Transcendentals*, 1st Edition, by Briggs & Cochran, Addison-Wesley. |
| 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 90% A, 80% B, 70% C, 60% D 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.

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## Tentative Schedule

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| Monday, August 27th<br>§1.1 Review of Functions | Tuesday, August 28th<br>§1.2 Representing Functions | Wednesday, August 29th<br>§1.3 Inverse Functions | Friday, August 31st<br>§1.3 Inverse Functions |
| Monday, September 3rd<br>No Class – Labor Day | Tuesday, September 4th<br>§1.4 Trig Functions | Wednesday, September 5th<br>§1.4 Trig Functions | Friday, September 7th<br>§2.1 Limits Informally |
| Monday, September 10th<br>§2.2 Limits Semi-formally | Tuesday, September 11th<br>§2.3 Computing Limits | Wednesday, September 12th<br>§2.4 Infinite Limits | Friday, September 14th<br>§2.5 Limits at Infinity |
| Monday, September 17th<br>§2.6 Continuity | Tuesday, September 18th<br>§2.7 Limits Rigorously | Wednesday, September 19th<br>Review for Exam | Friday, September 21st<br>**Exam 1** |
| Monday, September 24th<br>§3.1 Derivatives | Tuesday, September 25th<br>§3.2 Differentiation Rules | Wednesday, September 26th<br>§3.3 Product & Quotient Rules | Friday, September 28th<br>§3.4 Trig Derivatives |
| Monday, October 1st<br>§3.5 Rates of Change | Tuesday, October 2nd<br>§3.6 Chain Rule | Wednesday, October 3rd<br>§3.7 Implicit Derivatives | Friday, October 5th<br>§3.8 Derivatives of Logs |
| Monday, October 8th<br>§3.9 Inverse Trig Derivatives | Tuesday, October 9th<br>Review for Exam | Wednesday, October 10th<br>Review for Exam | Friday, October 12th<br>**Exam 2** |
| Monday, October 15th<br>No Class – Fall Break | Tuesday, October 16th<br>No Class – Fall Break | Wednesday, October 17th<br>§3.10 Related Rates | Friday, October 19th<br>§4.1 Maxima and Minima |
| Monday, October 22nd<br>§4.2 Derivatives & Graphs | Tuesday, October 23rd<br>§4.2 Derivatives & Graphs | Wednesday, October 24th<br>§4.3 Graphing Functions | Friday, October 26th<br>§4.4 Optimization |
| Monday, October 29th<br>§4.4 Optimization | Tuesday, October 30th<br>§4.5 Linear Approximation | Wednesday, October 31st<br>§4.6 Mean Value Theorem | Friday, November 2nd<br>§4.7 L'Hôpital's Rule |
| Monday, November 5th<br>§4.7 L'Hôpital's Rule | Tuesday, November 6th<br>§4.8 Antiderivatives | Wednesday, November 7th<br>Review for Exam | Friday, November 9th<br>**Exam 3** |
| Monday, November 12th<br>§5.1 Approximating Areas | Tuesday, November 13th<br>§5.1 Approximating Areas | Wednesday, November 14th<br>§5.2 Definite Integrals | Friday, November 16th<br>§5.3 Fun. Theorem of Calc. |
| Monday, November 19th<br>§5.3 Fun. Theorem of Calc. | Tuesday, November 20th<br>§5.4 More on Integrals | Wednesday, November 21st<br>No Class – Thanksgiving Break | Friday, November 23rd<br>No Class – Thanksgiving Break |
| Monday, November 26th<br>§5.5 *u*-Substitution | Tuesday, November 27th<br>§5.5 *u*-Substitution | Wednesday, November 28th<br>§6.1 Velocity & Net Change | Friday, November 30th<br>§6.1 Velocity & Net Change |
| Monday, December 3rd<br>§6.2 Areas between Curves | Tuesday, December 4th<br>§6.2 Areas between Curves | Wednesday, December 5th<br>Review for Exam | Friday, December 7th<br>**Exam 4** |
| Monday, December 10th<br>Review for Final | | | |
| **Final Exam – 2pm Thursday, December 13th** | | | |

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.