**Math 221 Calculus I**

**Mrs. Elizabeth A Smith**

**Office: Tarpley 308**

**Office Hours:** Monday & Wednesdays - I am available by appointment (sign up on Canvas for a time that works for you) MANY times of the day. If you need help, we will find a time that works for you to get that help!

**Required Textbook:** We have an online textbook and homework program called Hawkes Learning. You will have assignments due each week including the first week. It is a great program (we tested many options before choosing this one) if you used MyMathLab or another online math program in high school this is similar. Hawkes has fantastic 24-7 live customer service so if you have any trouble at all registering for the program call them. It is very easy to purchase either at the RU bookstore or online. Follow the directions to register for this class.

<https://learn.hawkeslearning.com/Portal/User/Login>

Go to the middle of the page to get started. You need to have a credit/debit card to buy online. \*\*\* take a picture of your access code (very long number) \*\*\* you will need this number periodically this semester. Option: You can also register for a free 10-day access to this software. If you buy the program during the 10-day trial, then all the work you have done will transfer to your account. If you do not buy the program, then the work will disappear. This is a good option to use if you have certain scholarships coming in later and you want to wait to buy the program, but you don’t want to fall behind in class.

**Graphing Calculator: TI83 or above is required.** I will teach using the TI83/TI84. If you have another type of ***graphing*** calculator, you need to have a manual for it or already be familiar with how to use it. Borrow a TI 84 from a friend from home for the semester!   You are welcome to use online or downloaded graphing calculators during class but you must have your own calculator to use for tests. You may not share a calculator with another student during tests. No Desmos on tests (not needed)

**COURSE COVERAGE:**  **Chapter 1 - 5**

**CATALOG DESCRIPTION:** This course is an introduction to both differential and integral calculus. Topics include limits; continuity; differentiation of algebraic and trigonometric functions; derivatives; product and quotient rules; chain rule; implicit differentiation; related rates; maxima and minima; concavity; antiderivatives; the definite integral; numerical integration; the natural logarithm and inverse trigonometric functions *Prerequisite: College placement or a grade of C or better in MAT 116.*

**OBJECTIVES:**

* be able to evaluate basic limits
* understand the concept of continuity
* be able to take derivatives of basic functions
* use the fundamental derivative rules
* take derivatives implicitly
* solve related rates problems
* solve maximum and minimum problems
* work with the idea of concavity
* take simple antiderivatives
* evaluate a definite integral by the Fundamental Theorem of Calculus
* perform a numerical integration
* perform integrals involving logarithm and inverse trigonometric functions.

**GRADING SCALE:**

A 90 – 100 B 80 – 89 C 70 – 79

D 60 – 69 F Below 60

* **ATTENDENCE**: Math is a subject that builds on information learned on previous days. If you are absent YOU are responsible to get the assignment off the syllabus and complete it on time.
* 2 TARDIES to class = 1 absence
* 4 or more absences = 5 points off test for each absence over 3

**As a reward if you miss 2 or less classes you will get 5 extra points on your lowest test.**

If you are absent on the day of a test then that will be your lowest test grade dropped and you MUST take the final exam*.* ***THERE ARE NO MAKEUP TESTS GIVEN FOR ANY REASON***. If you know you have to miss a test ahead of time you can make arrangements to take the test at an earlier time or day.

G**RADE DETERMINATION:**

Tests (final exam and chapter tests)   80% Homework 20% (50% off per day for late work)

If no tests have been missed then the lowest test will be dropped.

 If you have not missed a test AND have 3 or less absences **(2 lates count as an absence)** AND if you are happy with your grade before taking the final, you may exempt the final as your drop grade.  Example: You meet the above requirements and you have an 84 average you can take your B in the class and exempt the final exam.

**CONCEPTUAL FRAMEWORK:**

* The Mathematics and Science Department at Reinhardt University believes that all students should have an exposure to the ideas of science and the scientific method. This includes exposure to laboratory procedures, familiarity with some of the vocabulary of science and ability to read scientific articles in the newspaper or in popular magazines.

The Mathematics and Science Department at Reinhardt University believes that all students should be familiar with the systematic development of science through history. This includes an understanding of the effects that science has had on history and that history has had on scientists.

The Mathematics and Science Department at Reinhardt University wishes to convey to students that science is a continuing endeavor that will not ever be finished. This includes an introduction to the interaction of theory and observation.

**COURSE RELATIONSHIP TO CONCEPTUAL FRAMEWORK:**

The course will be taught using applied problems, a graphing calculator and laboratory exercises.

**LEARNING OUTCOMES:**

Students will demonstrate:

* Integrative, critical thinking and inquiry-based learning using evidence, logic, reasoning, and calculation.
* Knowledge of various research methodologies; information, technological, and scientific literacy.
* Proficencyof the calculus skills needed for future classes.

Would you like **Free** Tutoring? **CSS:**

The Center for Student Success is located on bottom floor of Lawson, room 035. CSS offers free peer and faculty tutoring for all subjects.

For appointments, go to Reinhardt webpage; click on Academics. When the next page appears, click Center for Student Success. On that screen, click Student Appointment Form. Fill out required fields (signaled by a red dot) and then submit your request. Dr. Emanuel will contact you within the same day to confirm your appointment.

**Mathematics Program Objectives**

As a result of completing a Bachelor of Science Degree at Reinhardt College a student should be able

**MPO1** to use reasoning, logic and evidence in mathematics.

**MPO2**  to bring knowledge from a wide range of mathematical areas to bear on the solution of problems.

**MPO3** to use effective written and oral expression of mathematical concepts in the creation of a mathematical argument.

**MPO4** to understand and to apply methodologies using libraries and informational technologies.

**MPO5** to understand the development of an axiomatic system.

**MPO6** to understand the application of mathematics through computer programming and numerical analysis.

**MPO7** to recognize a wide range of mathematical terms and vocabulary.