



MATH 1325 – ELEMENTS OF CALCULUS Spring 2012

Section 6001 – MW 12:30pm-1:50pm – Room B13.311

Credit Hours: 3 semester credit hours
Prerequisites: MATH 1314, or placement by testing
ENGL 0305, higher level course, or placement by testing
Corequisites: ENGL 0307 or 0356

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Office Hours: MTWTh 3:20pm - 4:35pm
Other times by appointment

Catalog Description:

A one-semester calculus course for non-science majors. Topics include limits, continuity, rates of change, differentiation and integration techniques and applications, calculus of the logarithmic and exponential functions and partial derivatives.

Learning Outcomes:

1. Evaluate limits of functions from their graphs and/or equations.
2. Determine derivative for selected functions and solve applications using these results.
3. Integrate selected functions and solve applications using these results.
4. Apply the concepts of limits, derivatives, and integrals to solve problems involving functions unique to business applications.

Required Materials:

Textbook: *Calculus (for Business, Economics, Life Sciences, and Social Sciences)*, 12th edition, by Barnett, Ziegler, and Byleen (ISBN: 0-321-61399-6)

Calculator: TI-83+ or TI-84+ is preferred, but not mandatory. (Please be aware that the examples shown in this textbook will be based on the TI-83/84 series.)

MyMathLab: You will be required to use MyMathLab (MML), an online computer program designed to help you practice math skills. An access code to use the software comes packaged with the purchase of a new textbook from the on-campus bookstores. If you do not have a MyMathLab access code, you can purchase one from the college bookstore or directly from MyMathLab online at www.pearsonmylabandmastering.com.

NOTE: When you register in MyMathLab, you will need the following code for this class.

Course ID: **travis11308**

Pencils: **All** written work must be done in pencil. **NO INK!!!** Work done in ink will **not** be graded.

Recommended Materials:

Calculator: TI-83+ or TI-84+ is preferred, but not mandatory. (Please be aware that the examples shown in this textbook will be based on the TI-83/84 series.)

Course Evaluation and Grades:

Homework: Homework problems will be assigned in MyMathLab for each section. These problems may be reworked multiple times for practice and to improve your score. Homework sections will be due on the date of the exam that covers those sections.

Quizzes: Quizzes will be short paper-and-pencil assessments, and may be either in-class or take-home. These will be based on the material covered in class and will be similar in style to homework problems.

Exams: There will be three in-class exams. These will be paper-and-pencil assessments. The dates for these will be announced in class approximately one week in advance. (See the section on make-ups.)

Final Exam: The final exam will be comprehensive and is mandatory. **If you do not take the final exam, you will receive an “F” for the course.** Please note the date and time for your final exam:

Monday, May 7th, 12:00noon-1:50pm

Final Letter Grades: Your final grade will be determined by the number of points earned from quizzes and exams given throughout the course. Your final letter grade will be determined by the following table.

		<u>Total Points Earned</u>	<u>Grade</u>
Homework (MML):	10%	90% to 100%	A
Quizzes:	10%	80% to 89%	B
In-class Exams (18% ea.):	54%	70% to 79%	C
<u>Final Exam:</u>	<u>26%</u>	60% to 69%	D
Total:	100%	59% or less	F

Make-Ups:

No make-ups will be allowed for homework or quizzes. No make-ups will be allowed for exams except by advance arrangement. If you miss due to an extreme emergency, you should contact me as soon as possible.

Your Grades / FERPA:

“The Family Educational Rights and Privacy Act (**FERPA**) (20 U.S.C. § 1232g; 34 CFR Part 99) is a Federal law that protects the privacy of student education records.” Under the regulations of FERPA, instructors are not allowed to give out student grades except to the student and only in person. **So, please do not ask for grades via telephone, e-mail, pony express, carrier pigeon, etc. Such requests will be ignored.**

Instructional Method:

Think of taking this course as being similar to taking music lessons. Your ability to play piano would not get much better if each lesson consisted of just watching your teacher. I am like that piano teacher: **I** know the material quite well, but you will not get any better by just watching me at the board, magically making everything work out. I will try to help you, **but you must take the responsibility to be an active learner, willing to practice enough to raise your mathematical skills to a higher level.**

I know that it is not possible to answer all of the individual questions during class time, so **please** see me outside of class or go to the Math Lab whenever you have problems that were not discussed during class.

Attendance:

Among other factors, regular class attendance is very important for success in this course. You should be prepared to attend and participate in the class discussions.

Withdrawals:

I will not take attendance; therefore, I will not drop you if you “disappear.” It is **YOUR** responsibility to fill out the paperwork and drop this course if for some reason you are not able to complete it. Otherwise, you will receive an “F” for the course. Please don’t let that happen to you. Failing grades are difficult to make-up.

If you withdraw on or before the “Official Day of Record,” which is **January 30th**, then no grade will appear on your transcript. After that, if you withdraw on or before **April 10th**, then you will receive a “W” for the course. After that date, you will receive the grade that appropriately reflects your performance.

A Texas law called the “Six-Drop Rule” applies to all students who have enrolled in college for the first time since Fall 2007. If you are such a student and you are thinking about dropping a course, please see an academic advisor before you drop so that you will know how this law affects you.

Academic Integrity:

Lone Star College System upholds the core values of learning: honesty, respect, fairness, and accountability. The system promotes the importance of personal and academic honesty. The system embraces the belief that all learners – students, faculty, staff and administrators – will act with integrity and honesty and must produce their own work and give appropriate credit to the work of others. Fabrication of sources, cheating, or unauthorized collaboration is not permitted on any work submitted within the system.

For more information, please refer to the *Academic Integrity & Student Success* brochure which can be found at www.lonestar.edu/departments/libraries/academic_integrity_brochure.pdf

Cell Phones:

I do not mind if you keep your cell phone turned on during lectures, but you must keep it in a silent mode. Please step out of the room if you need to answer a call. However, **cell phone use during exams is strictly prohibited.** Any use of a cell phone during an exam is grounds for being dismissed from the exam.

ADA Statement:

The Lone Star College System ADA Statement can be found in the current *Lone Star College Catalog*. If you require reasonable accommodations because of a physical, mental, or learning disability, please notify the instructor of this course as soon as possible and preferably before the end of the first two weeks of class to arrange for reasonable accommodations.

Emergency Notification:

Lone Star College System (LSCS) is committed to maintaining the safety of the students, faculty, staff, and guests while visiting any of our campuses. See www.lonestar.edu/oem for details. Register at www.lonestar.edu/12803.htm to receive emergency notifications. In the event of an emergency contact LSCS Police at (281) 290-5911 or X5911.

MATH 1325 – Elements of Calculus

Course Outline

Chapter 3 – Limits and the Derivative

- 3.1 – Introduction to Limits
- 3.2 – Infinite Limits and Limits at Infinity
- 3.3 – Continuity
- 3.4 – The Derivative
- 3.5 – Basic Differentiation Properties
- 3.6 – Differentials
- 3.7 – Marginal Analysis in Business and Economics

Chapter 4 – Additional Derivative Topics

- 4.1 – The Constant e and Continuous Compound Interest
- 4.2 – Derivatives of Exponential and Logarithmic Functions
- 4.3 – Derivatives of Products and Quotients
- 4.4 – The Chain Rule

----- EXAM #1 -----

Chapter 4 – Additional Derivative Topics

- 4.5 – Implicit Differentiation
- 4.6 – Related Rates
- 4.7 – Elasticity of Demand

Chapter 5 – Graphing and Optimization

- 5.1 – First Derivative and Graphs
- 5.2 – Second Derivative and Graphs
- 5.4 – Curve-Sketching Techniques

Chapter 6 – Integration

- 6.1 – Antiderivatives and Indefinite Integrals
- 6.2 – Integration by Substitution

----- EXAM #2 -----

Chapter 6 – Integration

- 6.4 – The Definite Integral
- 6.5 – The Fundamental Theorem of Calculus

Chapter 7 – Additional Integration Topics

- 7.1 – Area Between Curves
- 7.3 – Integration by Parts
- 7.4 – Integration Using Tables

Chapter 8 – Multivariable Calculus

- 8.1 – Functions of Several Variables
- 8.2 – Partial Derivatives
- 8.3 – Maxima and Minima

----- EXAM #3 -----

----- FINAL EXAM -----