MATH 1327-001 **Fall 2013**

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From the undergraduate catalog: E-mail is a prime means for communication. Therefore, the University has the right to send communications to students via e-mail and the right to expect that those communications will be received and read in a timely fashion. The Office of Information Technology (OIT) will assign all students an official University e-mail address. It is to this official address that the University will send e-mail communications. Students are expected to check their official e-mail account on a frequent and consistent basis to stay current with University communications. The University recommends checking e-mail daily in recognition that certain communications may be time-critical.

Textbook for Calculus I only: *Calculus, Early Transcendentals Volume One,* Custom Edition for University of Texas Arlington by Soo T. Tan

Course Prerequisite: A grade of C or above in Math 1325 or a sufficient score on the Math Aptitude Test or sufficient SAT/ACT math scores.

Learning Outcomes: Upon completion of Math 1327, the students will be able to perform various tasks including (but not limited to) those outlined below with algebraic, trigonometric and transcendental functions.

1. Students will be able to compute the limit of various functions without the aid of a calculator.
2. Students will be able to compute the derivatives and differentials of various functions without the aid of a calculator, and interpret certain limits as derivatives. In particular, they will be able to compute derivatives and differentials using differentiation techniques such as chain rule, implicit differentiation and logarithmic differentiation.

3. Students will be able to find the equation of the tangent line to the graph of a function at a point by using the derivative of the function. They will be able to estimate the value of a function at a point using a tangent line near that point.
4. Students will be able to sketch the graphs of functions by finding and using first-order and second-order critical points, extrema, and inflection points.
5. Students will be able to solve word problems involving the rate of change of a quantity or of related quantities. Students will be able to solve optimization problems in the context of real-life situations by using differentiation and critical points of functions. The problem topics include (but are not limited to) population dynamics, finance, physics, biology, chemistry and sociology.

Grading Scale:

90-100	A
80-89	B
70-79	C
60-69	D
0-59	F

Grade Components:

Midterm 1	20%
Midterm 2	25%
Final Exam	35%
Quizzes	20%

Any student who scores below 50 on the final exam cannot receive a grade higher than D in the course.

Drop Policy: Any student who drops the course on or before **10/30** at 5 PM will receive a W. **Students must consult with their major advisor to drop a course.**

Calculators: The only calculators allowed for the midterms and final are TI-30XA and TI-30XIIS.

Only nonprogrammable calculators with basic computational features, such as arithmetic and transcendental functions will be allowed. Calculators with the following features are **NOT** allowed: graphing, equation solving, differentiation and integration. Any device that has internet or e-mail capabilities – **this means NO cell phones** - and any device with a QWERTY keyboard are also not permitted.

Sources for help: The University of Texas at Arlington supports a variety of student success programs to help you connect with the University and achieve academic

success. These programs include learning assistance, developmental education, advising and mentoring, admission and transition, and federally funded programs. Students requiring assistance academically, personally, or socially should contact the Office of Student Success Programs at 817-272-6107 for more information and appropriate referrals.

The Math Department operates the **Math Clinic**, a tutoring service staffed by upper level undergraduate students. When you registered for this course, you were assessed a fee which allows you unlimited access to the Math Clinic. You will need to show your Mav ID to use the Math Clinic. The Math Clinic is in room 314 PKH; the phone number is 817-272-5674; and the hours of operation for fall and spring are

Monday – Thursday	8am to 9pm
Friday	8am to 1pm
Saturday	10am to 6pm
Sunday	1pm to 9pm

Go to the Math Clinic webpage http://www.uta.edu/math/clinic/ to get more information or to access assignment sheets for the courses for which tutoring is offered.

The **SOAR program** is an academic support program that provides tutoring, counseling, seminars, graduate school preparation, course reviews, study groups and other support services by trained staff dedicated to helping UT Arlington students reach their full academic potential. Go to http://www.uta.edu/soar/ for more details.

All previous midterm exams and some previous final exams are available to students in the **Science Education and Career Center (SECC)**, 106 Life Science Building. The fall and spring hours of operation are

Monday-Thursday	8am - 8pm
Friday	8am - 5pm
Saturday	12pm - 5pm
Sunday	Closed

You need a Mav ID Card to check out these exams. A copy machine is available for you to make copies. There are also video tapes of lectures on calculus topics that can be viewed in the SECC. For more information, go to https://www.uta.edu/cos/SECC/login.php.

You may access recent previous midterms and some of the finals online. Go to
https://mavspace.uta.edu/xythoswfs/webview/_xy-697804_1.
Solutions to the multiple choice questions are available at
https://mavspace.uta.edu/xythoswfs/webui/_xy-1083634_1-t_jbpAg0IM.

The Math Department maintains a list of people who have expressed an interest in tutoring. These persons are not necessarily recommended by the Math Department

and they set their own fees. You may obtain a copy of the tutor list in the Math Office, 478 PKH.

Your instructor will have regular office hours when you can stop by and ask questions. A graduate teaching assistant will be assigned to the course; he/she will also have regular office hours. Those hours will be listed on the class syllabus or you can contact the Math Department at 817-272-3261 to find out your instructor and/or GTA's office hours.

Americans with Disabilities Act: The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 93112 - The Rehabilitation Act of 1973 as amended. With the passage of new federal legislation entitled Americans with Disabilities Act (ADA), pursuant to section 504 of the Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens.

As a faculty member, I am required by law to provide "**reasonable accommodation**" to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with **informing faculty <u>at the beginning of the semester</u> and in providing *authorized* documentation through designated administrative channels.**

If you require an accommodation based on disability, I would like to meet with you in the privacy of my office, during the first week of the semester, to make sure you are appropriately accommodated.

Academic Dishonesty: It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University.

"Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts." (Regents Rules and Regulations, Part One, Chapter IV, Section 3, Subsection 3.2, Subdivision 3.22)

Grade Replacement and Grade Exclusion Policies: These policies are described in detail in the University catalog and can also be founded online at http://wweb.uta.edu/catalog/content/general/academic_regulations.aspx#10 (scroll about half way down the page).

Student Disruption: The University reserves the right to impose disciplinary action for an infraction of University policies. For example, engagement in conduct, alone or with others, intended to obstruct, disrupt, or interfere with, or which in fact obstructs, disrupts, or interferes with, any function or activity sponsored, authorized by or participated in by the University.

Drop for Non-Payment of Tuition: If you are dropped from this class for non-payment of tuition, you may secure an Enrollment Loan through the Bursar's Office.

Important Dates:

8/22	First day of classes
9/02	Labor Day holiday
9/09	Census Date
11/28-11/29	Thanksgiving holiday
10/30	Last day to drop a class
12/04	Last day of classes
12/9-12/13	Final Exams

Math 1327 Calculus I

Calculus Early Transcendentals Volume One by Soo Tan

Note to student: Exercise numbers surrounded by a box are available only in the text. Versions of the other exercises are included in the online homework assignments. The student who wishes to be successful in the course will do additional problems not on this assignment sheet. The concept questions at the beginning of each exercise set and the reviews at the end of each chapter are especially helpful.

0.4 Combining Functions
9, 12, 14, 15, 18, 25, 26, 28, 30, 32, 34, 37, 38, 42, 48, 52, 54, 56, 60, 68

0.6 Mathematical Models
1, 2, 3, 4, 13, 14, 15, 16, 21, 22, 23, 24, 25, 27

0.7 Inverse Functions
1, 5, 6, 7, 8, 9, 10, 12, 13, 14, 17, 18, 19, 22, 55, 57

0.8 Exponential and Logarithmic Functions
1, 2, 5, 9, 12, 18, 22, 23, 26, 27, 29, 30, 59, 61, 71, 72

1.1 Intuitive Introduction to Limits
1, 2, 3, 4, 5, 6, 7, 8, 11, 12, 17, 18, 20, 21, 22, 31, 33

1.2 Techniques for Finding Limits
2, 4, 6, 8, 13, 17, 18, 20, 22, 26, 30, 33, 36, 41, 44, 46, 49, 52, 54, 56, 66, 68, 72, 86

1.4 Continuous Functions
4, 6, 8, 9, 10, 12, 13, 21, 23, 26, 27, 28, 31, 34, 36, 40, 46, 48, 52, 76, 77, 78, 79, 80

1.5 Tangent Lines & Rates of Change
1, 2, 3, 4, 6, 8, 10, 14, 16, 18, 19, 21, 23, 24, 27, 28, 29, 30

2.1 The Derivative
4, 7, 9, 12, 16, 24, 28, 30, 32, 33, 34, 37, 40, 48, 50

2.2 Basic Rules of Differentiation
1, 2, 4, 5, 6, 8, 10, 11, 12, 13, 18, 19, 24, 26, 31, 40, 59, 68

2.3 The Product and Quotient Rules
9, 10, 12, 16, 18, 23, 25, 28, 29, 31, 35, 28, 47, 52, 55, 62, 64, 66

2.4 The Role of the Derivative in the Real World
2, 4, 6, 12, 16, 25, 27, 28, 30, 39, 40

2.5 Derivatives of Trigonometric Functions
2, 4, 6, 8, 9, 10, 12, 14, 21, 24, 25, 35, 43, 44

2.6 The Chain Rule
6, 8, 9, 16, 24, 26, 33, 36, 47, 59, 63, 64, 68, 77, 79, 85, 95, 101, 109

2.7 Implicit Differentiation
4, 6, 9, 14, 16, 19, 26, 27, 30, 40, 42, 46, 47, 50, 52, 62, 63, 64, 69, 70, 85, 87, 88, 97, 98

Calculus Early Transcendentals Volume One by Soo Tan

2.8 Derivatives of Logarithmic Functions
2, 4, 10, 11, 16, 17, 20, 22, 23, 25, 28, 36, 37, 43, 47
2.9 Related Rates
5, 7, 8, 13, 14, 17, 21, 22, 25, 27, 28, 40, 42
2.10 Differentials and Linear Approximation
4, 8, 10, 12, 13, 14, 21, 29, 30, 34, 35, 36, 44, 46, 47

3.1 Extrema of Functions
1, 3, 4, 6, 16, 17, 24, 28, 30, 34, 41, 43, 48, 50, 54, 63, 78, 79, 83, 84
3.3 Increasing & Decreasing Functions & the First Derivative Test
1, 3, 4, 6, 7, 8, 11, 18, 19, 25, 27, 30, 34, 35, 44, 45, 47, 52
3.4 Concavity and Inflection Points
3, 4, 6, 7, 10, 12, 18, 22, 25, 28, 30, 45, 46, 52, 54, 60, 62, 63, 71
3.5 Limits Involving Infinity; Asymptotes
2, 3, 4, 6, 9, 12, 15, 17, 18, 19, 20, 26, 30, 33, 36, 40, 47, 50, 55, 58, 63, 67, 68
3.6 Curve Sketching
4, 5, 14, 15, 19, 24, 26, 30, 31, 35, 41, 45, 46, 49, 51, 59
3.7 Optimization Problems
2, 4, 8, 9, 13, 15, 18, 25, 28, 30, 34, 35, 36, 37, 38, 39, 40, 42, 59, 61
3.8 Indeterminate Forms and L'Hôpital's Rule
5, 7, 8, 10, 12, 16, 17, 24, 26, 33, 36, 38, 434, 44, 45, 55, 56
3.9 Newton's Method
1, 5, 7, 10, 28, 35a, 35b, 35c, 36