

# Lamar University

## Department of Mathematics

### Fall 2017 Syllabus

MATH 1325 - 01, 02

Calculus for Business Apps (3 Credit Hrs)

MWF 10:20 – 11:15 am Lucas 117 (section 01)

MWF 12:40 – 1:35 am Lucas 118 (section 02)

**Instructor:** Mr. Paul Hay

**Office Hours:**

**Office:** Lucas 111

MW 11:30 am – 12:30 pm

**Phone:** 409-880-2210

TR 9:30 – 10:30 am

**E-mail:** hay.paul@gmail.com

**Text:** Applied Calculus for the Managerial, Life, and Social Sciences: A Brief Approach,  
Edition 10 by Soo T. Tan

**Prerequisites:** Grade of C or better in MATH 1314 or its equivalent.

**Attendance:** Class attendance will be recorded daily. Though there will be no penalty for missing lectures, persistent absences and/or tardiness will be noted and borderline grading cases may be decided accordingly. It is recommended that you make your best effort to be in attendance and ON TIME for all lectures.

**Cell Phones/Calculators:** Simple, non-graphing/programmable scientific calculators may be used on exams, if needed, but cell phone use is prohibited in class, so their use as a calculator will not be permitted.

**Grading:** A: 100-90, B: 89-80, C: 79-70, D: 69-60, F: below 60

**Homework/Quiz:** Homework will be assigned and graded before each exam, and in-class quizzes may occur occasionally as well. The homework/quiz average will account for twenty percent (20%) of your final grade.

**Exams:** There will be four (4) in-class exams scheduled at regular intervals throughout the semester. Exam dates will be announced at least one week in advance, and each exam will account for twenty percent (20%) of your final grade.

**Final Exam:** There will be an *optional*, comprehensive final exam on Monday, December 11, 2017 from 11:00 am – 1:30 pm for section 01, and on Friday, December 8, 2017 from 11:30 am – 1:30 pm for section 02. Though optional, your grade on the final may be used to replace your lowest grade from any of the four regular semester exams (but not the homework grade). It may also be used to replace any missed exams, as there will be NO MAKEUP EXAMS for non-scholastic related absences.

**Catalog Description:** An introduction to calculus. The derivative, applications of the derivative, techniques of differentiation, exponential and natural logarithmic functions, an introduction to integral calculus.

**Student Learning Outcomes:**

Upon completion of the course, students will:

1. Apply calculus to solve business, economics, and social sciences problems;
2. Apply appropriate differentiation techniques to obtain derivatives of various functions, including logarithmic and exponential functions;
3. Solve application problems involving implicit differentiation and related rates;
4. Solve optimization problems with emphasis on business and social sciences applications.
5. Determine appropriate technique(s) of integration;
6. Integrate functions using the method of integration by parts or substitution, as appropriate;
7. Solve business, economics, and social sciences applications problems using integration techniques;
8. Apply the definition of limits to derivatives and integrals;
9. Work with concepts of functions, with special regard to the first and second derivatives, graphs of functions, and how these connections are used in optimization.

Lamar University expressly prohibits intimidation and harassment of students, faculty, staff, or applicants. <http://students.lamar.edu/academic-support/code-of-conduct.html>

**Drop Policy:** Please make note of the three dates indicated in this drop policy. Any drop will be your responsibility; I will not drop a student from the course.

***September 13, 2017:*** (Census Date-Six Drop Rule does not apply) A student may drop or withdraw without consulting with the instructor. The Six Drop Rule does not apply to a drop before 5:00 PM.

***September 29, 2017:*** (Six Drop Rule applies) A student may drop or withdraw from the course without academic penalty and receive a Q, however, the Six Drop Rule applies. The student will consult with the instructor and the Records Office to initiate a drop.

***November 3, 2017:*** (Six Drop Rule applies) Last day to drop or withdraw with academic penalty; the student must be passing the course at the time of the requested drop in order to receive a Q. The drop form, including all required signatures, must arrive in the Records Office by no later than 4:00 PM. No drop is allowed after this date except in extreme extenuating circumstances. Any “late drop” must be approved by the instructor, department chair, college dean, and provost.

**Academic Integrity:** Students are expected to maintain complete honesty and integrity in their academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. Students are specifically warned against all forms of cheating and plagiarism. The *Lamar University Student Handbook* clearly reads: “Any student found guilty of academic dishonesty in any phase of academic work will be subjected to disciplinary action. Punishable offenses include, but are not limited to, cheating on an examination or academic work which is to be submitted, plagiarism, collusion, and the abuse of source materials.” One aspect of the *Handbook*’s definition of cheating includes “purchasing or otherwise acquiring and submitting as one’s own work any research paper or other writing assignment prepared by an individual or firm.” Plagiarism is defined as “the appropriation and the unacknowledged incorporation of another’s work or ideas into one’s own and submitted for credit.” Faculty members in the College of arts and Sciences investigate all cases of suspected plagiarism. Any student who is found cheating in this course will receive a course grade of F. <http://students.lamar.edu/student-handbook.html>

**Accommodations through the Disability Resource Center:** Lamar University is committed to providing equitable access to learning opportunities for all students. The Disability Resource Center (DRC) is located in the Communications building room 105. Office staff collaborate with students who have disabilities to provide and/or arrange reasonable accommodations. If you have, or think you may have, a disability (e.g., mental health, attentional, learning, chronic health, sensory, or physical), please contact the DRC at [409-880-8347](tel:409-880-8347) or [drc@lamar.edu](mailto:drc@lamar.edu) to arrange a confidential appointment with the Director of the DRC to explore possible options regarding equitable access and reasonable accommodations. If you are registered with DRC and have a current letter requesting reasonable accommodations, we encourage you to contact your instructor early in the semester to review how the accommodations will be applied in the course.

<http://www.lamar.edu/disability-resource-center/>

**Incomplete Grades:** The grade of "I" may be given when any requirement of the course, including the final examination, is not completed. Arrangements to complete deficiencies in a course should be made with the instructor prior to the end of the semester or term. Incomplete work must be finished during the next long semester or the Records Office will change the "I" to the grade of "F." While the extension may be granted by the instructor with the approval of his/her Department Chair and Academic Dean, once the "I" is changed to an "F" it cannot be changed back to an "I." In this case, either a "change of grade" procedure must be initiated or the course must then be repeated if credit is desired. The instructor may record the grade of "F" for a student who is absent from the final examinations and is not passing the course.

**Campus Closure:** In the event of an announced campus closure in excess of four days due to a hurricane or other disaster, students are expected to login to Lamar University's website's homepage for instructions about continuing courses remotely. <http://lamar.edu>

**Emergency Procedures:** Many types of emergencies can occur on campus; instructions for severe weather or violence/active shooter, fire, or chemical release can be found at:

<http://www.lamar.edu/about-lu/administration/risk-management/index.html>

Following are procedures for the first two:

**Severe Weather:**

- Follow the directions of the instructor or emergency personnel.
- Seek shelter in an interior room or hallway on the lowest floor, putting as many walls as possible between you and the outside.
- If you are in a multi-story building, and you cannot get to the lowest floor, pick a hallway in the center of the building.
- Stay in the center of the room, away from exterior walls, windows, and doors.

**Violence/Active Shooter:**

- **CALL** - 8-3-1-1 from a campus phone (880-8311 from a cell phone). Note: Calling 9-1-1 from either a campus phone or cell phone will contact Beaumont City Police Dispatch rather than University Police.
- **AVOID**- If possible, self-evacuate to a safe area outside the building. Follow directions of police officers.
- **DENY**- Barricade the door with desks, chairs, bookcases or any other items. Move to a place inside the room where you are not visible. Turn off the lights and remain quiet. Remain there until told by police it is safe.
- **DEFEND**- Use chairs, desks, cell phones or whatever is immediately available to distract and/or defend yourself and others from attack.

**Course Evaluations:** You will have an opportunity to evaluate all aspects of this course in a formal process to be completed online near the end of the term. You will receive an email reminder through your LU account.

Math 1325  
Applied Calculus by Tan 10<sup>th</sup> edition

<u>Assn.</u>	<u>Section</u>	<u>Topic</u>	<u>Page/Problems</u>
0	1.1	Precalculus Review	13/1-67 odd
	1.2		23/1-63 odd
	1.3		30/1-49 odd
1	2.1	Functions and Graphs	59/1, 5, 9, 13, 15, 17, 21, 25, 29, 31, 39, 43, 47
2	2.2	Algebra of Functions	74/1, 5, 11, 17, 21, 27, 33, 43
3	2.3	Math Models	88/1, 3, 5, 7, 11, 15, 19
4	2.4	Limits	115/1-8, 11, 13, 15, 17, 27, 33, 47, 51, 55, 59
5	2.5	Limits and Continuity	130/1-8, 11, 19, 27, 33, 43, 51
6	2.6	The Derivative	149/5, 9, 13, 15, 21, 27
7	3.1	Rules of Differentiation	169/1, 3, 5, 11, 15, 19, 23, 29, 31, 37, 39
8	3.2	Product and Quotient Rules	181/1, 5, 11, 15, 23, 29, 35, 37
9	3.3	The Chain Rule	194/1, 9, 19, 21, 23, 25, 29, 35, 43, 49, 51
10	3.4	Marginal Functions	209/1, 3, 6, 9, 11, 29
11	3.5	Higher Order Derivatives	218/1, 5, 11, 17, 23, 29, 31
	3.6	Implicit Differentiation	231/1, 7, 11, 17, 23, 29, 31
12	3.6	Related Rates	231/39-47 odd, 50, 54
	3.7	Differentials	240/1, 5, 9, 13, 17, 19, 23, 29
13	4.1	First Derivative	264/1, 5, 11, 23, 33, 43, 47, 61, 67
14	4.2	Second Derivative	282/1, 5, 13, 17, 21, 25, 29, 33
15/16	4.3	Curve Sketching	298/1, 5, 9, 13, 17, 23, 27, 41
17	4.4	Optimization I	313/1, 5, 9, 13, 17, 23, 27, 35
18	4.5	Optimization II	327/1, 3, 5, 9, 12, 14, 23, 25
19	5.1	Exponential Functions	342/1, 5, 9, 13, 17, 21, 25, 29
20	5.2	Logarithmic Functions	351/1, 5, 9, 13, 17, 21, 27, 31, 33, 37, 41
21	5.4	Dif. Of Exponential Functions	376/1, 9, 13, 17, 21, 27, 29, 33
22	5.5	Dif. Of Logarithmic Functions	387/1, 5, 9, 17, 21, 29, 35, 37, 40, 43, 44, 47
23	5.6	Exp. Functions as Math Models	399/1, 3, 4, 7, 11, 12
24	6.1	Antiderivatives & Int.	418/1, 7, 9, 11, 13, 15, 21, 25, 29, 33, 35, 37, 41, 45, 49, 51, 57
25	6.2	Int. by Substitution	430/1, 5, 9, 13, 17, 21, 27, 29, 35, 39, 51, 53
26	6.3	Area & Define Integral	442/1, 5, 13
	6.4	Fund. Theorem of Calc.	453/3, 7, 11, 15, 19, 23, 29, 37
27	6.5	Eval. Definite Integral	463/1, 5, 9, 13, 15, 21, 23, 31, 35
28	6.6	Area Between Two Curves	475/1-9, 13, 15, 19, 23, 29, 37
29	7.1	Integration by Parts	507/1, 5, 9, 13, 15, 19, 27, 29
30	7.3	Numerical Integration	528/1, 5, 9, 13, 15, 19, 23
31	7.4	Improper Integrals	539/1, 5, 9, 13, 17, 21, 25, 37