BROCK
SCHOOL OF BUSINESS
SAMFORD UNIVERSITY

BUSA 130
MW(F) 3:30-4:35PM
DBH 216

Course:	Quantitative Methods I
Instructor:	Caleb Moxley
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Office Hours:	By appointment or 4:35-5:00PM MW(F)
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This syllabus is subject to change. Any changes will be posted on the course website, and students will be informed of changes via email.

Course Description (from the College Catalogue):

Quantitative Methods I is designed to develop an intuitive understanding of calculus as well as an appreciation of the usefulness of calculus to solve managerial, business, economic and social science problems. The course is aimed at the uses of calculus, not its development as a mathematical discipline; as such, it provides an introduction to differential and integral calculus with emphasis on managerial and business applications.
Prerequisite(s): C- or better in MATH 150, or equivalent.
Course Topic Coverage: 85% Quantitative Methods, 15% Business Functional Area Applications.
Credit Hours: 3

Required Text Tan, S.T. (2012). *Applied Calculus for the Managerial, Life, and Social Sciences: A Brief Approach,* 9^{th} *Edition* (ISBN-13: 9780538498906) and *Student Solutions Manual* (ISBN-10: 0840068476).

Course Objectives:

This course is intended to improve students' quantitative competencies, foster intellectual curiosity, and enhance mental dexterity. In particular, students will learn to

1. evaluate functions and their graphs
2. define and conceptualize the derivative
3. use differentiation to solve business problems (e.g. optimization problems)
4. define and conceptualize the integral
5. use integration to solve business problems (e.g. marginal analysis)

Computer Skills:

You must be able to communicate via email and gain access to the course website. You are welcome to use computing software or devices (such as Mathematica, MATLAB, WolframAlpha, graphing calculators, or Maple) to check your work but not as a substitute for your own work. *Assignments must present all detail necessary to solving a problem.* Assignments written in a LaTeX-editor or in Microsoft Word's built-in equation editor are much easier to read, so I encourage you to use these editors when submitting written assignments.

Evaluation:

Assigned Homework	20%	Assigned most classes
Presentations	10%	Points available most classes
Quizzes	10%	Three quizzes, 3.33% each
Exams	45%	Three exams, 15% each
Comprehensive Final Exam	25%	8 Dec 2014, 6:00PM

All quizzes and exams are closed-book, closed-note, and in-class. Quizzes are 15 minutes. Exams are the full class period. All work on quizzes and exams must be wholly the work of the student.

The three quizzes and three exams are paired together. If you do better on a test than on its corresponding quiz, the score on the test will be substituted for the score on the quiz. For example, if you make a C on Quiz 1 and a B+ on Test 1, your Quiz 1 score will become a B+ automatically. If you miss a quiz, your score on the quiz will be determined by your score on the test, regardless of whether the absence was excused or not.

The make-up policy for exams is more strenuous. If a student misses an exam, she or he must provide a ***serious and verifiable*** reason for the absence. For instance, a flat tire is serious but (unless accompanied with a towing/service receipt) is not verifiable, and no make-up would be granted for such an excuse. Please ensure that, if you miss an exam, you collect accompanying documentation to verify your circumstances. The instructor has the discretion to either omit the exam, schedule a make-up exam, or substitute the score on the final exam for the missed exam when an acceptable excuse has been provided. **If you have a scheduled, unavoidable conflict (e.g. an athletic event, conference, or major surgery), it is your responsibility to notify the instructor at least a week before the missed exam to schedule an alternative time to take the exam. You will be required to take the exam early under these circumstances.**

See the **Homework and Presentations** section for details on these assignments.

Letter Grade (x) Scale:

$93 \leq x$	A	$73 \leq x < 77$	C
$90 \leq x < 93$	A-	$70 \leq x < 73$	C-
$87 \leq x < 90$	B+	$67 \leq x < 70$	D+
$83 \leq x < 87$	B	$63 \leq x < 67$	D
$80 \leq x < 83$	B-	$60 \leq x < 63$	D-
$77 \leq x < 80$	C+	$x < 60$	F

Attendance Policy:

You are allowed four absences (excused or unexcused) in the course without consequences to your grade. After four absences, you will be docked one-third of a letter grade for each additional absence. If you expect to need more than four absences for legitimate reasons, you must provide excuses for *every* absence. For instance, a student with five unexcused absences will be docked one-third of a letter grade, and a student with four excused absences and one unexcused absence will also be docked one-third of a letter grade.

Homework and Presentations:

Homework assignments will be given during most class sessions. These assignments are due at the beginning of the next class period. Each assignment is graded out of two using the rubric below. Failure to turn in an assignment will result in a grade of -1. *This means that if you fail to turn in homework, your homework grade can end up negative!* Late homework assignments will be accepted, but will receive a score of 0, even with a valid excuse.

Score	All problems attempted	Graded problem correct
0	No	No
1	Yes	No
1	No	Yes
2	Yes	Yes

Most class periods will begin with a solicitation for presentations. A problem may be presented if it is not a homework problem, appears in the exercises in the text, and has an even number greater than 10. Volunteers will be asked to come to the board to present a problem. Volunteers will be selected based on the following criteria.

1. The volunteer with the fewest presentation points will be given the first chance to work the problem on the board.
2. If there is a tie for the volunteer with the fewest number of presentation points, the presentation will be given randomly to one of the volunteers tied for the fewest number of presentation points.
3. If there are no volunteers, we will move on to another problem and repeat the process.
4. If during the course of a presentation, a flaw has been found in the solution that cannot be reconciled by the presenter, he or she will yield the board to the next presenter.
5. As many problems will be presented as the time allows. No one problem should take more than four or five minutes.

Students will receive presentation points according to the following rubric.

Score	Description
0	No significant progress towards a solution
1	Significant progress towards a solution
2	A full, well-explained solution

A student's presentation grade will be determined on a curve. The number of presentation points needed to attain a certain letter grade will be announced a by the middle of the term.

Class Decorum:

- Arriving to class on time is expected.
- Please keep all electronic devices silenced and put away.
- You may take notes by hand only. Electronic copies of my notes will be available on the course website, so you will not need to take notes electronically.

Students with Special Needs:
Samford University complies with Section 504 of the Rehabilitation Act and with the Americans with Disabilities Act. Students with disabilities who seek accommodations must make their requests by contacting Disability Support Services located in Counseling Services on the lower level of Pittman Hall, or call 205.726.4078/2105. I will grant reasonable accommodations only upon written notification from Disability Support Services. It is the student's responsibility to seek accommodations.

Academic Integrity:
You are expected to work independently on quizzes and exams. You are welcome to work with other students freely on presentation problems, but you cannot present in groups. Submitted homework assignments are the responsibility of each student. Offering or accepting solutions to problems is an act of plagiarism. You may not use the Internet to solve homework or presentation problems.

The university policy on academic integrity will be enforced in this class. As stated in the Student Handbook, "[A] student…found guilty of dishonesty in academic work, for a first offense,…will be placed on probation, and the professor will receive a recommendation that [s]he receive an F in the course." The Handbook describes academic dishonesty as "dependence upon aid from others beyond that expressly approved by the instructor," "plagiarism" or "dishonesty on quizzes, tests, and examinations." Please refer to your copy of the Student Handbook for a more complete discussion of the importance of academic integrity.

Each assignment should include: "This work is mine and mine alone. [signature]"

Expected Time Dedication:
You will be held to a professional standard in this course. Your work should be carefully and thoughtfully completed. You should come well-prepared to the exams and quizzes. This level of performance cannot be achieved unless you dedicate significant time outside of class to work in this course. You should, at the minimum, expect to spend 6 hours per week outside of class on work for this course.

Data for Research Disclosure:
Any and all results of in-class and out-of-class assignments and examinations are data sources for research and may be used anonymously in published research.

Syllabus Agreement:
Please remove the lower part of this page, sign it, and return it during the second class period. This will count as your first homework assignment. Anyone not returning the syllabus agreement will be in *de facto* agreement with the syllabus but will receive a -1 for the first homework assignment. Late submissions will receive a 0 for the first homework assignment.

I _____ [print] have read and understand the syllabus for BUSA130. I will consult the syllabus whenever I have a question about the format of the course. I have a full understanding of the nature of academic integrity as it relates to this course.

Signature: _____ Date: _____

Tentative Course Outline:
Weekly coverage might change as it depends on the progress of the class.

Week	Assignment
August 25, 27	• M: Read 2.1-2.2, Syllabus Agreement. • W: Read 2.3, P: 14, 16, 20, 22, 36, 74 in 2.1 and 6, 18, 30, 34, 40, 66 in 2.2.
September 1, 3	• M: Labor Day, no classes. • W: Read 2.4, P: 6, 12, 18, 26, 38, 48, 62, 66, 74, 80, 82 in 2.3.
September 8, 10	• M: Read 2.5, P: 6, 12, 16, 34, 46, 60, 62, 68, 76, 96 in 2.4. • W: Read 2.6, P: 6, 10, 18, 34, 42, 52, 60, 72, 88, 94, 96 in 2.5.
September 15, 17	• M: Read 3.1-3.2, P: 6, 14, 22, 26, 34, 38, 44, 62 in 2.6. • W: Read 3.3-3.4, P: 28, 31, 36, 38, 42, 50, 70, 78 in 3.1 and 12, 26, 42, 62, 68 in 3.2.
September 22, 24	• M: Read 3.5-3.7, P: 16, 32, 52, 64, 78, 90 in 3.3 and 4, 12, 28, 32, 36 in 3.4. • W: Read 4.1, P: 18, 26, 30, 42 in 3.5; 6, 26, 32, 52 in 3.6; and 6, 18, 24, 40 in 3.7.
September 29, October 1, 3	• M: **Quiz 1**, Read 4.2, P: 8, 10, 18, 34, 42, 46, 48, 62, 70, 86, 92 in 4.1. • W: Read 4.3-4.4, P: 6, 8, 12, 16, 26, 40, 60, 72, 80, 92, 108 in 4.2 (due October 6). • F: **Test 1**
October 6, 8	• M: Read 4.5, P: 16, 26, 30, 56, 68 in 4.3 and 8, 21, 37, 48, 82 in 4.5. • W: Read 5.1-5.2, P: 4, 8, 16, 26, 28, 30, 32, 34 in 4.5.
October 13, 15	• M: Fall Break, no classes. • W: Read 5.3, P: 8, 16, 24, 32, 38, 46 in 5.1 and 10, 14, 20, 28, 34, 40, 50 in 5.2.
October 20, 22	• M: Read 5.4-5.5, P: 4, 8, 14, 22, 28, 30, 38, 40, 48, 50, 52 in 5.3. • W Read 5.6, P: 8, 16, 28, 32, 46, 76 in 5.4 and 16, 30, 40, 48, 58, 78, 84 in 5.5.
October 27, 29	• M: Read 6.1, P: 2, 6, 10, 14, 16, 20, 26, 32 in 5.6. • W: **Quiz 2**, Read 6.2-6.3, P: 4, 8, 20, 36, 38, 50, 54, 58, 62, 70, 100 in 6.1.
November 3, 5, 7	• M: Read 6.4, P: 14, 26, 36, 50, 54, 66 in 6.2 and 2, 10, 14, 16, 18 in 6.3. • W: Read 6.5, P: 4, 16, 18, 32, 38, 40, 42, 48, 52, 56 in 6.4 (due November 10) • F: **Test 2**
November 10, 12	• M: Read 6.6, P: 2, 8, 14, 22, 28, 34, 44, 52, 64, 68, 72 in 6.5. • W: Read 6.7, P: 2, 4, 16, 24, 26, 30, 34, 42, 48, 58 in 6.6.

Week	Assignment
November 17, 19, 21	• M: Read 7.1, P: 2, 6, 14, 16, 18, 22, 24, 26, 28 in 6.7. • W: Read 7.4-7.5, P: 2, 4, 8, 20, 26, 36, 46, 48, 50 in 7.1. • F: Read 8.1, P: 4, 12, 16, 30, 58 in 7.4 and 8, 24, 28, 32, 40 in 7.5.
November 24, 26	• M: **Quiz 3**, Read 8.2, P: 6, 8, 16, 22, 26, 30, 42, 46, 48 in 8.1. • W: Thanksgiving Holiday, no class.
December 1, 3, 5	• M: No reading, P: 2, 12, 16, 20, 26, 34, 38, 42, 44, 46 in 8.2. • W: **Test 3** • F: No assignment. Review for final exam.

Extra Credit: You may receive extra credit in the form of six points being added to your homework grade by completing all even numbered problems in the Chapter 1 Review. To earn these six points, you must turn in the completed review before September 10. This could raise your homework grade by roughly 14%, i.e. your final grade by roughly one third of a letter grade. No other extra credit will be granted unless it appears on an exam.

> “If people do not believe that mathematics is simple, it is only because they do not realize how complicated life is.”
>
> **John Louis von Neumann**