

Course title and number	<b>MATH 142: Business Mathematics II</b>
Term	<b>Spring 2016</b>
Class times and locations	<b>Section 507: TR, 9:35am-10:50am, HELD 105</b> <b>Section 503: TR, 2:20pm-3:35pm, ILSB 1105</b>

## INSTRUCTOR INFORMATION

Name	<b>Angela J. Allen</b>
Phone Number	Math Department: 979-845-3261
E-mail Address	angieallen@tamu.edu
Office	Blocker 221F <i>Note: Office hours are *not* held in my office, they are held in conference rooms (see below).</i>
Office Hours	Tues. and Thurs. 11am-12:15pm* (Blocker 246), Tues. 4-5pm (Blocker 246) <i>Note: No office hours on exam days.</i>
BMTA Hours	*I will arrive at 11:15am on T/R, but a BMTA will arrive at 11:00am. Mon. 1-3pm (Blocker 205B), Wed. 3-4pm (Blocker 203), Thurs. 4-5pm (Blocker 246), Fri. 10:30-11:30am (Blocker 205B) <i>Note: No office hours on exam days.</i>
Web Page	<a href="http://www.math.tamu.edu/~aallen/142spring2016.html">http://www.math.tamu.edu/~aallen/142spring2016.html</a>
Help Sessions	<a href="http://www.math.tamu.edu/courses/helpsessions.html">http://www.math.tamu.edu/courses/helpsessions.html</a>
Week in Review	<a href="http://www.math.tamu.edu/courses/weekinreview.html">http://www.math.tamu.edu/courses/weekinreview.html</a>

## COURSE DESCRIPTION AND PREREQUISITES

**Description:** (MATH 1325) Business Mathematics II. Derivatives, curve sketching and optimization, techniques of derivatives, logarithms and exponential functions with applications, integrals, techniques and applications of integrals, multivariate calculus.

**Prerequisites:** High school algebra I and II and geometry or satisfactory performance on a qualifying examination. Credit will not be given for more than one of MATH 131, 142, 147, 151 and 171.

**Calculator Policy:** This course **REQUIRES** that you have a TI-83 or TI-84 (Plus or Silver edition) calculator or the TI-Nspire (non-CAS version). I will **NOT** discuss other calculators. **TI-89 and above calculators are NOT allowed.** Furthermore, the only programs that are allowed on your calculator are those I provide you with (if any) during class. All other programs must be erased from the calculator. You can save these to your computer and add them back to the calculator after your final exam if you wish.

## LEARNING OUTCOMES

This course is focused on quantitative literacy in mathematics found in both business and everyday life. Upon successful completion of this course, students will be able to:

- Logically formulate mathematical variables and equations to quantitatively create mathematical models representing problems in everyday life, as well as business, so that calculus can be applied to achieve an optimal solution.
- Quantitatively analyze business concepts such as market equilibrium and break-even analysis.
- Demonstrate knowledge of basic functions, including exponentials and logarithms, to solve financial investment problems.

- Identify patterns in numeric data to calculate limits and derivatives of functions numerically.
- Justify whether a function is continuous or not using the mathematical definition of continuity.
- Understand the derivative as a rate of change in order to quantitatively apply it to everyday life as well as business applications such as marginal analysis and elasticity of demand.
- Investigate the relationship between a function and its first and second derivatives, and use the information obtained from its derivatives to identify pertinent information about the function.
- Apply the definite integral to quantitatively determine solutions to problems in everyday life and business such as area between curves, average value of a function, and producers' and consumers' surplus.
- Recognize and appreciate the relationship between the derivative (rate of change) and the definite integral (accumulation of change), and utilize the Fundamental Theorem of Calculus as the bridge between the two.
- Generalize and extend the pattern of various calculus techniques to functions of two variables in order to find solutions to both everyday and business problems such as marginal productivity of labor and capital.

## TEXTBOOK AND/OR RESOURCE MATERIAL

- **Textbook:** *Calculus: Applications and Technology*, 3<sup>rd</sup> edition, by Tomastik

Note: When you registered for this class, you paid for an electronic version of the textbook and access to your online homework (you will access both through WebAssign). Thus, you are not required to purchase a hard copy of the textbook. For more information go to <http://www.math.tamu.edu/courses/eHomework/> and click on "Student Information Page".

- **Course Web Page:** My course web page will be a source of communication to you aside from class, office hours, and email. There, you will find a course calendar, a link to the departmental web page for the course, as well as links to the Math 142 Help Session and Week in Review schedules.
- **Email:** Check your official TAMU email account EVERY day. You are responsible for any information I send via email. I will \*email\* the guided notes you need to print and bring to class. Also, because of privacy rights, I cannot discuss grades via email. Also, please include your full name, course number (142), and section number in your email. If any of this information is missing, it will delay my response.

Note: Due to the large volume of students, it may take me a few days to respond to an email. *If you have a question about a homework problem, you need to stop by my office hours, your BMTA's office hours, or a Math 142 Help Session.* Be sure to start your studying and homework early so you can make arrangements to attend one of the above resources for help.

## GRADING POLICIES

The course grading will be based on the results of

- **Exams:** There will be three in-class exams and a **comprehensive** final exam. You must bring a picture id (student id or driver's license) to the exams.

Due to logistics of the class size, you will \*not\* have the entire class time the day of the exam. Instead, you will have 60 minutes to take the exam. Also, the exams are all multiple choice, and there will be no partial credit. You will need a scantron (TAMU) for each exam. More information regarding exams will be given closer to the first exam day.

The final exam is comprehensive. It is also all multiple choice, and no partial credit will be given. You will need a scantron (TAMU) for the final exam as well. Again, due to the class size, you will have 1 hour and 45 minutes to take your final exam.

- **Graded Homework:** Graded homework assignments will be completed online using your WebAssign computer account.

Additional information regarding online homework:

- Go to <http://www.math.tamu.edu/courses/eHomework/> to access your online homework (as well as tutorials for how to use WebAssign).
- You have a “practice” version and a “homework” version for each assignment. There are 20 attempts for each question in the practice version, and you have 3 attempts for each question in the homework version (you can submit the answer(s) to each question individually). The practice versions are NOT counted toward your grade.
- After submitting an answer in the practice version, you will see the correct answer. *It is very important that you work the practice version at least once so you will see the format you need to use for your answers in WebAssign.*
- You should use Mozilla Firefox and have the most updated versions of Java and Flash on the computer you are using to alleviate technical problems.
- If you have *technical issues* with WebAssign, please fill out the “Student Help Request Form” found at <http://www.math.tamu.edu/courses/eHomework/>.
- I will not give an extension due to technical difficulties, so be sure to start your homework well in advance so that you have time to resolve any technical issues.

- **Exams Timeline**

Activity	Date	Percent
Exam I	February 11	20%
Exam II	March 24	20%
Exam III	April 21	20%
Homework	Weekly (Thursdays)	15%
Final Exam	Sect. 507: May 5, 12:30pm-2:30pm Sect. 503: May 10, 1:00pm-3:00pm	25%
<b>TOTAL</b>		<b>100%</b>

- **Grading Scale**

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

Note: At the end of this semester, you will receive the grade you **earned** in the course according to the distribution above (no exceptions).

## ATTENDANCE AND MAKE-UP POLICIES

- **Excused Absences:** No make-ups will be given without written evidence of an official University excused absence (see *University Student Rules*). In addition, you must notify me **NO LATER** than the end of the second working day after the missed assignment:

... the student must notify his or her instructor in writing (acknowledged e-mail message is acceptable) prior to the date of absence if such notification is feasible. In cases where advance notification is not feasible (e.g. accident or emergency) the student must provide notification by the end of the second working day after the absence. This notification should include an explanation of why notice could not be sent prior to the class. (Section 7.3 of the *University Student Rules*)

\*\*\*If no such notice is given, the rights to a make-up are forfeited. Specifically, in the case of injury or illness, students are required to obtain a confirmation note from a health care professional affirming date and time of a medical office visit regarding the injury or illness. I will NOT accept the "Explanatory Statement for Absence from Class" form as sufficient written documentation of an excused absence.

For more information regarding excused absences, refer to Student Rule 7 of the *University Student Rules* at <http://student-rules.tamu.edu/rule07>.

- **Make-up Exams:** If you have a written, University approved excused absence for missing an exam \*and\* you contact me within 2 working days after missing an exam, you will be expected to make-up your exam through the Math Department at the next possible make-up exam time (see <http://www.math.tamu.edu/courses/makeupexams.html> to find the next possible make-up exam time and location). If you do not complete your make-up exam on the next available make-up day, you must have a University approved excused absence (in writing) for ALL the possible make-up days you do not attend, in addition to the regular exam day you missed (see Student Rule 7 of the *University Student Rules*). **Remember to contact me within 2 working days if you miss an exam so I can schedule your make-up exam with the Math Department for the next possible make-up exam time.**

Note: The make-up exams will cover the same material, but they are not multiple choice. They will be workout as well as short answer for the conceptual questions. You will have 75 minutes to complete the make-up exam. You should study the same way you would for the original exam.

- **Late Work:** Late work (for which you do not have a University approved excused absence) will NOT be accepted.

#### ADDITIONAL PRACTICE & SOURCES OF HELP

- **BMTA Office Hours:** My BMTA's for both sections (Eva and Carleigh) will conduct their own office hours each week (listed at the beginning of this syllabus). These office hours will be an excellent source of help to you especially if you cannot attend my office hours. They will be able to help you with online homework (the practice versions), class notes, week in review solutions (take them with you), etc. Either one or both of them will be present during their office hours as well as my office hours (listed at the beginning of this syllabus).
- **Suggested Homework:** A list of suggested homework problems will be posted on the course web page. These problems will not be collected for a grade, but it is IMPERATIVE that you do the assigned problems on the suggested homework problems list to prepare for the exams. If you need help with any of these suggested homework problems, please attend my office hours, your BMTA's office hours, or a Math 142 Help Session.
- **Week in Review:** The Math 142 Week in Review is a weekly review held by an instructor in the math department. There will be two reviews conducted this semester; I will conduct one on Mondays, and Mr. Patrick Orchard will teach one on Tuesdays. Each Week in Review will cover the material taught in class the previous week. Math 142 students may attend either or both reviews. The direct link to each Week in Review web page can be found on our course web page. There, you will find the times, locations, and practice problems to print for each review. The solutions to each Week in Review will be posted by the following day. *Note: There is no Week in Review the week after an exam.*
- **Help Sessions:** The times and locations for Math 142 Help Sessions will be announced by the second week of classes and can be found on the course web page. The help sessions have drop-in hours where you can get help with your suggested homework, online homework, class notes, or other problems. These help sessions are an **excellent** source of help, especially if you are unable to attend my office hours or your BMTA's office hours.

## ELECTRONIC DEVICES POLICY

- Cell phones must be turned off and out of sight during class. If I hear or see your cell phone, I may ask you to leave class (this is in accordance with *University Student Rules*).
- Calculators are allowed to be on during class while being used for math. You should have your calculator out and ready by the time class starts. On exam days, you are not allowed to have your calculator lid out, and your calculator memory must be RESET before entering the room.
- You are NOT allowed to have any other electronic device (computer, ipod, ipad, etc.) out or turned on during class.

## COURSE TOPICS (Tentative weekly schedule)

WEEK	TOPIC	REQUIRED READING
1	A.8: Brief review of basic functions and shifts, 1.0: Complete Graphs, 1.1 topics: Increasing, Decreasing, Concavity, Continuity, and Piecewise-defined Functions, 1.2 topics: Break-even Analysis and Market Equilibrium, Exponential Functions	Sections A.8, 1.0, 1.1 topics, 1.2 topics, 1.3
2	Logarithmic Functions, Limits and Continuity	Sections 1.5, 3.1
3	Rates of Change, The Derivative	Sections 3.2, 3.3
4	Review, Exam I (A.8, 1.0, 1.1 topics, 1.2 topics, 1.3, 1.5, and 3.1-3.3)	
5	Simple Derivative Rules and Marginal Analysis, Product and Quotient Rules, Chain Rule	Sections 4.1, 4.2, 4.3
6	Derivatives of Exponential and Logarithmic Functions, Elasticity of Demand, Analyzing Graphs with the First Derivative	Sections 4.4, 4.5, 5.1
7	Analyzing Graphs with the Second Derivative, Limits at Infinity, Curve Sketching Techniques	Sections 5.2, 5.3, 5.4
8	Absolute Extrema, Optimization (Inventory Control is optional)	Sections 5.5, 5.6
9	Review, Exam II (4.1-4.5 and 5.1-5.6)	
10	Antiderivatives, Substitution, Riemann Sums and Estimating Distance	Sections 6.1, 6.2, 6.3
11	The Definite Integral, Fundamental Theorem of Calculus and Average Value of a Function, Area Between Curves (Lorentz Curves are optional)	Sections 6.4, 6.5, 6.6
12	6.7 topic: Producers' and Consumers' Surplus, Functions of Several Variables, Partial Derivatives (Competitive and Complementary Demand is optional)	Sections 6.7 topic, 8.1, 8.2
13	Review, Exam III (6.1-6.6, 6.7 topic, 8.1, and 8.2)	
14	Extrema, Review for Final Exam	Section 8.3
15	Final Exams (covering all previous sections as well as Section 8.3)	
16	Final Exams (covering all previous sections as well as Section 8.3)	

## AMERICANS WITH DISABILITIES ACT (ADA)

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit <http://disability.tamu.edu>.

## **ACADEMIC INTEGRITY**

Copying work done by others, either in-class or out-of-class, is an act of scholastic dishonesty and will be prosecuted to the full extent allowed by University policy. Collaboration on assignments, either in-class or out-of-class, is forbidden unless I grant permission. If you cheat on an assignment, you will receive a zero. Also, you will be reported to the University. Another form of cheating is typing formulas in the calculator or using programs that give you an advantage over classmates. If I catch anyone cheating this way, you will get a zero on the assignment and be reported to the University for cheating. Remember the Aggie Code of Honor:

*“An Aggie does not lie, cheat, or steal, or tolerate those who do.”*

For more information about the Honor Council Rules and Procedures visit the web site <http://aggiehonor.tamu.edu>.

***Scholastic Dishonesty Will Not Be Tolerated.***

## **COPYRIGHT POLICY**

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