

Math 142 Syllabus

Course title and number	Business Calculus (MATH 142)
Term	Summer 2017
Class times and location	MTWRF 10:00-11:35am in H. R. Bright Building 131

Instructor Information

Name	Krzysztof Świącicki
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Web Page	http://www.math.tamu.edu/~ksas
Office Hours	TR 11:40am-1:10pm
Help Sessions	http://www.math.tamu.edu/courses/helpsessions.html
Departmental Web Page	http://www.math.tamu.edu/courses/math142

Catalog Description

Business Calculus (Credit 3) Derivatives, curve sketching and optimization, techniques of derivatives, logarithms and exponential functions with applications, integrals, techniques and applications of integrals, multivariate calculus. No credit will be given for more than one of MATH 131, MATH 142, MATH 147, MATH 151 and MATH 171. Prerequisites: MATH 140 or equivalent or acceptable score on Texas A&M University math placement exam.

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

Calculus: Applications and Technology, 3rd edition, by Tomastik

Note: You will be required to purchase access to the online homework system, WebAssign. The fee for this is \$94, which includes access to both the online homework and an electronic copy of the textbook. Thus, you are not required to purchase a hard copy of the textbook, although you have the option to purchase a custom loose-leaf copy of the textbook (which should be bundled with an access code to WebAssign) through the local bookstores. For more information, click on “Student Information Page” on the following webpage: <http://www.math.tamu.edu/courses/eHomework>.

Calculator Policy

A TI-83, TI-83PLUS, TI-84, TI-84PLUS, or TI-Nspire Non-CAS (with an 84 faceplate) is REQUIRED. These are the only types of calculators that you are allowed to use on quizzes and exams. You must bring your calculator to every class period. NOTE: It is considered a violation of the Aggie Honor Code to have any programs, notes, etc. in your calculator that have not been approved by your instructor.

Online Homework

There will be a graded computer homework assignment for each section we cover in-class. These assignments will be taken on the WebAssign computer system. For more information and to login please go to <http://www.math.tamu.edu/courses/eHomework/>

Exams

There will be three in-class exams. You must bring your student id and approved calculator to each exam. Calculators will be checked before or during each exam. If there are any programs, notes, or formulas on your calculator which I did not give you, the occurrence will be considered scholastic dishonesty. The tentative exam schedule is as follows:

Exam 1: Jul 13

Exam 2: Jul 25

Exam 3: Aug 3

Final Exam

The final exam will be comprehensive and given on Tuesday, Aug 8, 2017 from 10:30am to 12:30pm in the classroom. If it will benefit the student, the final exam grade will replace the lowest individual exam grade. Please note that this benefit will only occur if the student took all exams.

Grading Policies

- **Final grade**

Activity	Date	Percentage
Homework	Biweekly	9%
Quizzes	Biweekly	10%
Exam I	7/13/2017	18%
Exam II	7/25/2017	18%
Exam III	8/3/2017	18%
Final Exam	8/8/2017	27%
TOTAL		100%

- **Grading Scale**

Range	Grade
90% ≤ average ≤ 100%	A
80% ≤ average < 90%	B
70% ≤ average < 80%	C
60% ≤ average < 70%	D
0% ≤ average < 60%	F

Attendance and Makeup Policies

Attendance is mandatory and may affect your grade. No make-up assignments, computer homework, or exams will be given without an official, written, University Excuse (falsification of documentation is a violation of the Aggie Honor Code). You must notify me in advance to ensure the right to a make-up. If advance notice is not possible (i.e. sudden illness), you **MUST** contact me within **TWO** working days of the missed assignment/homework/exam; otherwise, you forfeit the right to a make-up. An absence for a non-acute medical service or regular check-up does not constitute an excused absence. For more information please go to <http://student-rules.tamu.edu/rule07>. Please note that I will **NOT** accept the Explanatory Statement for Absence from Class form as sufficient written documentation of an excused absence.

If you have a University approved absence for missing an exam, you will be expected to make up your exam according to arrangements made with your instructor. You must discuss (email is fine) the need for a make-up exam with me according to the rules stated above.

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 845-1637. For additional information visit <http://disability.tamu.edu>.

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

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System. For additional information on the Honor Council Rules and Procedures, consult <http://aggiehonor.tamu.edu>.

Tentative weekly schedule.

Week	Topics	Sections Covered
1	Functions	1.1, 1.2, 1.3, 1.5
2	Limits and the Derivative	3.1, 3.2, 3.3
3	Rules for the Derivative, Curve sketching and optimization	4.1, 4.2, 4.3, 4.4, 4.5, 5.1, 5.2, 5.3
4	Curve sketching and optimization, Integration	5.4, 5.5, 5.6, 6.1, 6.2, 6.3
5	Integration, Functions of several variables	6.4, 6.5, 6.6, 6.7, 8.1, 8.2
6	Functions of several variables	8.3

- *Week-in-Review (WIR)*: There is no live week-in-review in the summer session. However, the Spring semester week-in-review material is still posted at

- *Help Sessions*: Help sessions are an opportunity for you to ask questions and get help with your homework. These sessions are led by students, where you may come and go, as your schedule allows. Once determined, the schedule will be announced in class, and additionally posted at **<http://www.math.tamu.edu/courses/helpsessions.html>**

- *Office Hours*: As stated on the first page, I have office hours TR 11:40-13:10 in Blocker 633F where you can come ask questions about the material. I am available at other times via appointment for help, discussion of your performance in class, or authorized make-up quizzes; email me to arrange for any of these.