Syllabus

Math 135 – Basic Calculus for Business Administrators 52-135-205-90

Online Fall 2017

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Book: ***Calculus and its Applications with MyMathLab*** 132e edition, by Goldstein, Lay, Schneider, and Asmar published by Prentice Hall/Pearson.
We cover chapters 1-7 and use chapter 0 as a review.

MyMathLab information
Course Name: Basic Calculus for Business Administrators
Students will access MyMathLab through Canvas. An eBook is provided so you can download paper copies as needed.

Course: Basic Calculus for Business Administrators 52-135-205-90

Course Requirements:

Homework worth 10 points each, once a week on MyMathLab site. You will have three chances to do each homework assignment; the best score counts.

***Discussion Board* – you are required to participate in class discussions via the discussion board at least once a week. Sometimes the instructor will pose questions to start the discussion, but you may pose your own questions for the class to respond to. You earn 4 points for each weekly discussion.**

Quizzes: There will be 2-3 questions each week; each quiz will be worth 2 points, 1 point per problem. If you take the quiz **on time** you receive **1 bonus point.**

Exams: There will be three tests each worth 100 points. Each will be online and you will have 3 chances.

***Project* –** a 3-4 page paper is optional for extra credit. A list of possible projects will be available on eCollege in unit 12. All projects will be submitted to the dropbox for unit 12. (30 bonus points) The project and taking the quizzes on time are the only ways to get extra credit.

Total point count possible is 476 points + 41 bonus points.

Course Plan:

There are NO late homework papers accepted – MyMathLab cuts off access after the due date. All homework is due by a Sunday night at 11 PM on the date indicated on MyMathLab. You get three chances on each homework set, and the highest score counts.

All quizzes in each unit must be taken by the date that the homework for that unit is due. You get three chances, and the highest score counts.

Module 1 is a review of the fundamentals of algebra needed for Calculus. Facility with basic algebraic operations is necessary for almost every section of the course.
Learning Goal: Students will be able to perform basic algebraic operations, including those with exponents and logarithms. They will be able to interpret practical word problems algebraically, and use equations to find solutions to the problems.
***Due September 10*:** Homework Problems for sections 0.1 – 0.4 posted on MyMathLab, and quiz 1 posted on MyMathLab.

Module 2 continues the review of algebra begun in Unit 1 and introduces the concepts of rate of change, both average rate of change and instantaneous rate of change.
Learning Goal: Students will understand exponential and logarithmic functions. They will understand the concept of rate of change, investigate average rates of change as they relate to other fundamental concepts, such as slope of the line, and move towards understanding instantaneous rates of change.
Due September 17: Homework for sections 0.5 and 0.6 and 1.1 and 1.2 and quiz 2.

Module 3 continues the discussion of instantaneous rates of change and the equivalent expression as the derivative of a function.
Learning Goal: Students will understand the derivative as an instantaneous rate of change and what that implies for graphing functions. They will be able to calculate the derivative of basic polynomial functions, and evaluate the derivative at specific values.
Due September 24: Homework for sections 1.3-1.7 and quiz 3

Module 4 begins the applications of the derivative.
Learning Goal: Students will be able to calculate the first and second derivative of functions and use these calculations to find maxima and minima for polynomial functions, and how this helps graph the function.
Due October 1 Homework for sections 1.8 and 2.1-2.3 and quiz 4

Module 5 continues the discussion of applications
Learning Goal: Students will understand how to compute marginal cost, minimize total cost, maximize profit, optimize production levels, control inventory, and maximize area and volumes.
Due October 8 Homework for sections 2.4-2.7 and quiz 5

Exam 1 must be taken by October 15
Exam 1 covers Chapters 0, 1, and 2.

Module 6 covers techniques of differentiation such as the product rule, quotient rule, and chain rule.
Learning Goal: Students will understand when to apply the techniques for differentiation such as the product rule, the quotient rule, the chain rule (general power rule) and how these derivatives are computed.
Due October 22 Homework sections 3.1-3.3 and quiz 6

Module 7 covers the calculations of the derivative of exponential functions, log functions and ln functions.
Learning Goal: Students will be able to find the derivatives of exponential and logarithmic functions, both log and ln functions.
Due October 29 Homework sections 4.1- 4.4 and quiz 7

Module 8 covers applications of exponential and logarithmic functions, especially as applied to financial decision making.
Learning Goal: Students will be able to calculate exponential rates of decay and growth, applies these techniques to financial functions, and compute years til various things mature or disappear.
Due November 5 Homework sections 4.5-4.6 and 5.1-5.2 and quiz 8

Exam 2 must be taken by November 12
Exam 2 covers chapters 3, 4, and 5 (only sections covered by homework)

Module 9 covers the definite integral, finding areas, and the uses of antiderivatives.

Learning Goal: Students will understand that the opposite of taking a derivative is finding an antiderivative, or equivalently finding an integral of a function. The focus is on computing definite integral. They will understand that the definite integral of a function is also developed from determining the area under the function by taking the sums of smaller and smaller areas in the geometric figure.
Due November 19 Homework sections 6.1-6.4 and quiz 9

Module 10 covers applications of the integral and the beginning of multivariable functions and their derivatives.
Learning Goal: Students learn that the integral can be used to compute areas as in module 9, but also used to find such things as the original principal of a loan. They will understand how to evaluate multivariate functions and compute basic partial derivatives.
Due December 3 Homework sections 6.5 and 7.1 and 7.2 and quiz 10

Module 11 covers applications of derivatives of multi variable functions, including constrained optimization.
Learning Goal: Students will learn to calculate the derivatives of various multivariate functions and to apply them to maximizing and minimizing multivariable functions. They will learn about constrained optimization, i.e. creating an additional variable to bring a constraint to bear on the problem.
Due December 10 Homework sections 7.3 and 7.4 and quiz 11.
Optional projects are due should you choose to do one.

Optional projects must be submitted by December 10

Test 3 must be completed by December 17 and it is on the material since the last exam thus chapters 6 and 7, but with background from the whole course.

Grading Scale in total points:
A 428 or better
B + 404 - 427
B 380 – 403
C+ 357 – 379
C 333 – 356
D 285 – 332
F below 285

The grades are kept on the Canvas gradebook. Only scores on individual pieces are on MyMathLab. Be sure to check your grades periodically to be sure they were transcribed correctly. All discussion is via Canvas.

Academic Integrity at Rutgers

Principles of academic integrity require that every Rutgers University student:

- properly acknowledge and cite all use of the ideas, results, or words of others
- properly acknowledge all contributors to a given piece of work
- make sure that all work submitted as his or her own in a course or other academic activity is produced without the aid of unsanctioned materials or unsanctioned collaboration
- obtain all data or results by ethical means and report them accurately without suppressing any results inconsistent with his or her interpretation or conclusions
- treat all other students in an ethical manner, respecting their integrity and right to pursue their educational goals without interference. This requires that a student neither facilitate academic dishonesty by others nor obstruct their academic progress
- uphold the canons of the ethical or professional code of the profession for which he or she is preparing.