



MTH 201 - Business Calculus

2026 Spring Term (March 25 – June 11, 2026)

Class	Thursday (8h30-11h15)	
Worth	3 credits	Room: D8-202
Pre-requisite	MTH 112, with at least C	
Instructor	Dr. Phan Xuan Thanh (email: thanh.phanxuan@hust.edu.vn)	

Course description

An introduction to the basic ideas and techniques of differential and integral calculus for students majoring in business related areas. Topics include differentiation and integration of algebraic, exponential and logarithmic functions, functions of several variables, partial derivatives, Lagrange's multipliers, and applications of these concepts to business related topics.

Course objectives

Upon completion of this course, the student should be able to:

1. Differentiate algebraic, logarithmic, and exponential functions.
2. Explain the geometric significance of the derivative.
3. Use first and second derivative tests to find relative maximums and minimums.
4. Sketch accurate graphs of functions, showing relative maximums and minimums, concavity, points of inflection.
5. Find the absolute maximum and absolute minimum values of functions (if they exist). In particular, find the absolute maximum and absolute minimum values of continuous functions defined on closed intervals of finite length.
6. Apply techniques of differentiation to maximum/minimum problems, marginal analysis problems, and approximations using differentials.
7. Compute anti-derivatives and definite integrals involving various algebraic, logarithmic, and exponential functions.
8. Use partial derivatives and Lagrange multiplier in finding relative maximums and minimums of functions of several variables.

Textbook

M.L. Bittinger, D.J. Ellenbogen and S.A. Surgent, *Calculus and its applications*, 11th edition, Pearson Education, 2016.

Student evaluation

Homework + Attendance: 10%, Quizzes: 20%, Midterm: 30%, Final exam: 40%

1. **Homework:** There are weekly assignments. If you don't show your work, you get a zero. You will be asked (randomly) to present your solutions.
2. **Quizzes:** There will be 2 quizzes given during the course.

Grading scale

A (90-100), B (80-89), C (70-79), D (60-69), F (under 60)

Tentative class schedule

W	Date	Sections	Topics	Exercises	Remarks
1	5/3	Review	Functions, Graphs, and Models	Page 87: 40, 46, 47 Page 89: 9, 10, 18, 24	
2	12/3	1.1, 1.2	Limits and continuity	Page 107-: 72-80 Page 118: 28-30; Page 119: 60-63 Page 121: 77-84	
3	19/3	1.3, 1.4	Differentiation	Page 132: 46-53; Page 143: 50-57	
4	26/3	1.5, 1.6	Differentiation techniques	Page 155: 53-60, 78-80, 84-86 Page 164: 32-40, 99, 100, 107, 108	
5	2/4	1.7, 1.8	The chain rule, higher derivatives	Page 174: 57-61; Page 175: 75-80 Page 182: 23, 24, 35, 36 Page 183: 41-42; Page 184: 59-62	Quiz 1 (1.1-1.6)
6	9/4	2.1-2.4	Applications of differentiation: Max, min	Page 212: 19-22, 28-30; Page 231: 19-29; Page 232: 41-46, 107, 108	
7	16/4	2.5-2.8	Applications of differentiation (cont.): Marginal functions, implicit differentiation	Review problems for Midterm exam, Chapter 2 Test (306-)	
8	23/4	3.1-3.4	Exponential & logarithmic functions	Page 319: 46-54; Page 320: 86-87; Page 321: 97-100, 103, 104	Midterm exam (chapter 1&2)
9	30/4	3.5, 3.6	Exponential & logarithmic functions (cont.)	Page 334: 56, 57, 65, 66; Page 335: 84, 85; Page 348: 10, 11; Page 351: 48, 49; Page 376: 14-16	
10	7/5	4.1-4.4	Integration	Page 397: 61-65; Page 399: 78, 79, 85, 86; Page 407: 9-11	
11	14/5	4.5-4.7, 5.1	Integration (cont.)	Page 425: 109-113; Page 433: 17-19; Page 434: 20, 49, 50; Page 445: 86, 95, 96; Page 452: 17-20, 37, 38; Page 458: 31-38; Page 480: 19, 20	Quiz 2 (chapter 3 and 4.1-4.4)
12	21/5	6.1-6.3	Functions of several variables	Page 540: 21-26, 30-40; Page 542: 63-64, 67-69	
13	28/5	6.4, 6.5	Functions of several variables (cont.)	Page 548: 15; Page 549: 23-26; Page 555: 5-9; Page 565: 22-30	
14	4/6		Final review	Sample of final exam will be given	
15	11/6		Question & Answer		Final exam

Absences

If you miss more than three classes (excused or unexcused) you will receive a failing grade (grade F) for the course.