



Course Syllabus MTH201G:

**Mathematics for Business and Economics**

**Contact Details for instructor**

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**Course Prerequisites (if any)**

None.

**Learning Objectives**

MTH 201E teaches the mathematical skills required for problem solving and decision making in the business world through use of mathematical models and specialized techniques.

Since there are students with completely different backgrounds in mathematics, the course will provide a common ground by starting from simple concepts. This means that much of the material covered may be a repetition for those who took strong mathematics in high school.

Topics include: functions as mathematical models, equation-solving techniques, differential and integral calculus, exponential growth and time-value of money and partial derivatives and their applications in economic functions.

## Course Description

### **Methods: Mathematics for Business and Economics MTH201G**

Teaches the mathematical skills required for problem solving and decision making in the business world through use of mathematical models and specialized techniques. Topics include: functions as mathematical models, equation-solving techniques, differential and integral calculus, exponential growth and time-value of money and partial derivatives and their applications in economic functions.

## Course Content

- \* Linear Equations (chapter 1 in handbook)
  - o algebra
  - o graphs of linear equations
  - o intersection of linear equations
  - o modeling of supply and demand analysis, national income determination
- \* Non Linear Equations (chapter 2)
  - o quadratic, exponential and logarithmic equations
  - o modeling of revenue, cost and profit
- \* Mathematics of Finance (chapter 3)
  - o percentages and interests, compound interest
  - o investment appraisal
- \* Differentiation (chapter 4)
  - o rules of differentiation
  - o marginal functions and elasticity
  - o optimization of economic functions
- \* Partial Differentiation (chapter 5)
  - o functions of several variables
  - o partial marginal functions and elasticity
  - o Lagrange multipliers
- \* Integration (chapter 6)
  - o indefinite integration
  - o definite integration

## Course Materials

Textbook: *Mathematics for Economics and Business*  
by Ian Jacques, Financial Times/Prentice Hall

Calculator: All examples in class will be given on a TI-84, which is also the calculator you need for the statistics courses. However, for this course any calculator which can do logarithms (a LOG or LN button) will do. Make sure you know how to use your calculator and that it works: a calculator is intended to make you gain time, not to make you lose time. You will not be allowed to use your GSM as a calculator.

## **Grading Scale of Vesalius College**

Vesalius College grading policy, in line with the Flemish Educational norms, is now as stated follows:

A	85-100
A-	81-84
B+	77-80
B	73-76
B-	69-72
C+	66-68
C	62-65
C-	58-61
D+	54-57
D	50-53
F	0-49

## **Course Assessment**

The students will be evaluated on the basis of their performance as follows:

➤ Class Tests	25%
➤ Homework	25%
➤ Midterm examination	25%
➤ Final examination	<u>25%</u>
TOTAL	100%

## **Grading Criteria**

The following criteria will be applied in assessing your written work:

- Evidence of understanding of the concepts, theories and ideas developed in the course.
- Being able to perform the necessary calculations

### **Additional Course Policies**

There will be a class test every week.  
If you miss a test, contact the instructor.

### **Academic Honesty Statement**

Academic dishonesty is not tolerated in this course. Academic honesty is not only an ethical issue but also the foundation of scholarship. Cheating and plagiarism are therefore serious breaches of academic integrity. Following the College policy, cheating and plagiarism cases will be communicated in writing to the Associate Dean for Students and submitted to the Student Conduct Committee for disciplinary action. If you refer to someone else's work, appropriate references and citations must be provided. Grammar, spelling and punctuation count, so use the tools necessary to correct before handing in assignments.

### **Protocol for Conducting Exams at Vesalius College**

1. Students must store their cell phones and any other electronic devices (iPods, MP3 Players, tablets etc.) in their bags or coat pockets, outside of their reach. Possession of any such item on the student's person or place will be considered as evidence of cheating.
2. Students must leave their coats, hat, and bags in front or around the periphery of the classroom.
3. The exam is *open book*. You can use your notes, books & calculator. Students may have only the material designated by the instructor on their desk. The instructor has the right to inspect this material. You are not allowed to pass material (such as calculators) to other students during the exam. You cannot use your GSM or tablet as a calculator.
4. Students are not allowed to leave the classroom during the exam. (If an emergency occurs, another faculty or administration member must escort the student out of the classroom.)
5. Students must remain seated during the last 15 minutes of the exam and wait until the completion of the exam session. If students finish the exam before the final 15 minutes, they will be permitted to leave.
6. If a student is found cheating, the result is an immediate F, and the instructor is required to report the student to the Student Conduct Committee.

## Course Schedule

Week 1	Introduction, repetition of basic algebra, linear equations, slopes
Week 2	Systems of equations, supply-demand curves, market equilibrium
Week 3	parabolic functions
Week 4	exponential and logarithmic functions
Week 5	percentages, compound interests, geometric and arithmetic series
Week 6	Repetition
Week 7	Midterm exam
Week 8	Differentiation: first and second derivatives
Week 9	Differentiation: chain rule
Week 10	Partial differentiation
Week 11	Optimization problems
Week 12	Method of Lagrange
Week 13	Integration
Week 14	Repetition
Week 15	Final Exam