



B.E. International Program

Faculty of Economics, Thammasat University



Course Outline

MA217 Calculus for Social Science 2

Semester: 1/2018 (August 14 – December 3, 2018)

Number of credits: 3 credits (3-0-6)

Lecture Time: Saturdays, 09:00-12:00 hrs.

Lecture Venue: Room 203, Faculty of Economics

Instructor: Asst. Prof. Dr. Phanida Saikhwan

E-mail: psaikhwan@engr.tu.ac.th

Office hours: by appointment

Enrollment Key: 6292

Course Description:

Matrices, determinants, solutions of system of linear equations, higher order partial derivatives, application of maximum and minimum of several variables functions with unconstraint and constraint, techniques of integration for one variable functions, polar coordinates and area in polar coordinates, multiple integration and its applications.

Prerequisite: MA 216

Course Objectives:

Calculus has influenced nearly every branch of natural and social sciences, since its invention about three hundred years ago. Calculus is not only one of the most beautiful ideas in the history of human thought, but also one of the most useful and influential. This course is designed to train students to understand and appreciate both theory and calculation. In each topic, students will not only learn how to solve the problem but also learn the concepts, the hypotheses behind and how to apply them correctly. The student should be able to understand and apply the topics covered in the course which are: higher order partial derivatives, application of maximum and minimum of several variables functions with unconstraint and constraint, matrices, determinants, solutions of system of linear equations, techniques of integration for one variable functions, multiple integration and its applications.

Reading lists:

Although, lecture handouts cover all the topic required, students are recommended to consult textbooks for further examples and alternative explanations. The class discussion will follow Hoffman and Bradley (2009) and Klein (2002) which give many economic examples and other fields. Other books are also suitable. If you already have a similar book, it is not absolutely necessary to acquire another one.

1. Hoffman, L.D. and Bradley, G.L., Calculus for Business, Economics, and the Social and Life Sciences, 10th edition, McGraw Hill, 2009. (Recommended)
 2. Klein, M., Mathematical Methods for Economics, 2nd Edition, Pearson Education, 2002. (Recommended)
 3. Chiang, A. and Wainwright, K., Fundamental Methods of Mathematical Economics, 4th Edition, McGraw-Hill, 2005.
 4. Barnett, R., Zeigler, M. and Byleen, College Mathematics for Business and Economics, Life Science, and Social Science, 10th edition, Pearson Education, 2005.
 5. Haeussler, E.F.Jr., Paul, R.S., and Wood, R., Introductory Mathematical Analysis for Business, Economics, and the Life and Social Sciences, 11th edition, Prentice Hall, 2006.
 6. Sydsaeter, K. and Hammond, P.J., Mathematics for Economic Analysis, Prentice Hall, 2002.
 7. Simon, C., and Blume L., Mathematics for Economists, Norton & Company, 1994.
- Tentative Schedule and Course Outline

Section	Date	Topic
1	18 Aug	Application of maximum and minimum of several variables functions with unconstraint
2	25 Aug	Application of maximum and minimum of several variables functions with equality constraints
3	1 Sep	Application of maximum and minimum of several variables functions with equality constraints (cont.)
4	8 Sep	Application of maximum and minimum of several variables functions with equality constraints (cont.)
5	15 Sep	Application of maximum and minimum of several variables functions with inequality constraints
6	22 Sep	Application of maximum and minimum of several variables functions with inequality constraints (cont.)
7	29 Sep	Application of maximum and minimum of several variables functions with mixed constraints
8	Sat 6 Oct	Midterm examination, 9:00-11:00 hrs.
9	13 Oct	Holiday (Matrices, Algebra of Matrices, Elementary Operations) Make-up class will be announced
10	20 Oct	Solutions of system of linear equations
11	27 Oct	Solutions of system of linear equations (cont.)
12	3 Nov	The inverse of a matrix, Determinants, Some Properties
13	10 Nov	Techniques of integration for one variable functions
14	17 Nov	Techniques of integration for one variable functions (cont.)
15	24 Nov	Multiple integration and its applications
16	TBA	
	Thu 13 Dec	Final examination, 9:00-12:00 hrs.

Evaluation Methods

There will be 2 quizzes during classes which will be announced beforehand, a midterm examination and a final examination. The course grades will be determined as following:

Quizzes	10%
Midterm (Saturday 6 October 2018, 9.00-11.00 hrs.)	40%
Final (Saturday 13 December 2018, 9.00-12.00 hrs.)	50%

Remarks:

- ◆ First semester begins August 14, 2018
- ◆ Period of withdrawal without “W” August 14 - 27, 2018
- ◆ **Mid-Term Examination Period** **October 1 - 6, 2018**
(Saturday, October 6, 2018, 09.00 - 11.00 hrs.)
- ◆ Course withdrawal with “W” October 1 - 6, 2018
- ◆ Chulalongkorn Memorial Day October 23, 2018
- ◆ Last day of class December 3, 2018
- ◆ **Final Examination Period** **December 4, 6-9, 11-20, 2018**
(Thursday, December 13, 2018, 09.00 – 12.00 hrs.)