**Kuwait University**

**College of Business Administration (CBA)**

**Economics Department**

Course Syllabus

**ECON 205 Mathematics for Economists**

Spring 2023

Dr. Imad Dashti

# Lecture Time and Location

1030205 / Mon & Wed 9:30 AM – 10:45 AM, Floor 03/Area D3/Room 1009

# Contact Information

**Location**:Economics Department – 3rd Floor – Zone A – Office No. S|03|0A|1011

**Email:** imad.dashti@ku.edu.kw

**Office Hours**: Mon & Wed, 12:30 PM - 1:45 PM and/or by appointment

# Course Description

The course applies mathematical concepts to economic applications. It covers the basic mathematical tools required for the study of economic intermediate theory courses, econometrics, and upper-division electives in economics. Topics include economic applications of functions, derivatives and integrals, optimization with two or more independent variables, constrained optimization, matrix algebra, and difference and differential equations.

# Prerequisites

ECON 111 Principles of Macro, ECON 110 Principles of Micro, & ISOM 110 (Business Math).

# Tutorial

It’s a must that students should practice solving problems based on what they have learned in lectures.

# Course Learning Objectives (CLOs)

Upon successful completion of the course, students will be able to:

1. Model economic questions as mathematical problems.
2. Apply their prior knowledge of calculus and matrix algebra to economic applications.
3. Mathematically express economic concepts and successfully interpret relevant variables and parameters in economic models.
4. Acquire foundations of major techniques used to solve constrained optimization problems in economics.
5. Acquire foundations of major difference and differential equations techniques used in economic theory.

# CLO Mapping to CBA Skill Based Competency Goals[[1]](#footnote-2)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CLO | Competency Goal | | | | |
| Analytical | Communication | Information Technology | Business Ethics |
| 1 | I |  |  |  |
| 2 | A |  |  |  |
| 3 | R |  |  |  |
| 4 | I |  |  |  |
| 5 | I |  |  |  |

# Type of Emphases:

* **(I)ntroduce:** Students will be introduced to the skill and their grasp of it assessed in the course.
* **(A)pply:** The course will not cover the skill. Students should have a high-level grasp of the skill and are required to apply it in the course.
* **(R)einforce:** Students should have an introductory-level grasp of the skill and the course will improve their mastery to a higher level

# Required Material

**Textbook**: Geoff Renshaw, Maths for Economics, Fifth Edition, Oxford University Press, 2021.

<https://learninglink.oup.com/access/renshaw5e-student-resources#tag_all-chapters>

**Additional Material**:

**Similar Textbook**: Vassilis C. Mavron, and Timothy N Philips, Elements of Mathematics for Economics and Finance, Springer, 2007.

1. Visit the KU’s library website:

<http://kuniv.vdiscovery.org>

2. Login using your KU ID and password

3. Click on the “eBooks” tab

4. Search for the book using the title above or using the following ISBN number : 978-1-84628-561-5

5. Download the textbook as a PDF file

**E-Learning System**: Moodle

**Course Website** : **MOODLE** For 1030205

<https://moodle.ku.edu.kw/course/view.php?id=57873>

# Course Requirements

* **Individual Assignments:** There are an individual assignment for each chapter.
* **In-Class Tests:** Tests are scheduled below.
* **Participation:** The quality of our classroom discussions in large part depends on you and your preparation for class. Remember, for most of these cases, there is no right or wrong answer.

# Course Policies

* **Attendance and Participation:** Every student in this course must abide by the Kuwait University Policy on Attendance (published in the Curriculum System Bylaws, Chapter 3, Section 13). A copy of the student guide can be accessed online on:

<http://vpaa.ku.edu.kw/en/documents/KU%20ByLaws/Students/Curriculum_Regulations.pdf>

* **Cheating and Plagiarism:** Every student in this course must abide by the Kuwait University Policy on Cheating and Plagiarism (published in the Curriculum System Bylaws, Chapter 3, Section 14). A copy of the student guide can be accessed online on:

<http://vpaa.ku.edu.kw/en/documents/KU%20ByLaws/Students/Curriculum_Regulations.pdf>

A picture containing text, receipt

Description automatically generatedPlease carefully note all sources and assistance when you turn in your work. Under no circumstances should you take credit for work that is not yours. You should neither receive nor give any unauthorized assistance on any deliverable. If you have any questions about what constitutes “unauthorized assistance” please email me before the deliverable is submitted.

# Grading

The scores in this course will be the weighted average of the following items:

|  |  |
| --- | --- |
| Weight | Description |
| **20%** | **Attendance, Homeworks, EDpuzzle** |
| **35%** | **Midterm Monday 27 March 2023 (in class)** |
| **45%** | **Final Monday 15/05/2023 11:00-13:00** |
|  |  |
| 100% | TOTAL |

# Course Outline

|  |  |
| --- | --- |
| **Chapter #** | **Topics** |
| Ch 3: | Linear equations |
| Ch 4: | Quadratic equations |
| Ch 5: | Some further equations and techniques |
| Ch 6: | Derivatives and differentiation |
| Ch 8: | Economic applications of functions and derivatives |
| Ch 9: | Elasticity |
| Ch 10: | Compound growth and present discounted value |
| Ch 14: | Functions of two or more independent variables |
| Ch 15: | Maximum and minimum values, the total differential, and applications |
| Ch 19: | Matrix algebra |

# Important Dates

|  |  |
| --- | --- |
| Date | Event |
| Thursday 16/3/2023 | Last day to drop a course |
| **Mon 27/03/2023** | **Midterm Monday 27 March 2023** |
| Thursday 4/5/2023 | Last day of classes |
| **Mon 15/05/2023** | **Final Monday 15/05/2023 11:00-13:00** |

# CBA Competency Goals

1. **Analytical Competency:** A CBA graduate will be able to use analytical skills to solve business problems and make a well-supported business decision.

**Student Learning Objectives:**

* 1. Use appropriate analytical techniques to solve a given business problem.
  2. Critically evaluate multiple solutions to a business problem.
  3. Make well-supported business decisions.

1. **Communication Competency:** A CBA graduate will be able to communicate effectively in a wide variety of business settings.

**Student Learning Objectives:**

* 1. Deliver clear, concise, and audience-centered presentations.
  2. Write clear, concise, and audience-centered business documents.

1. **Information Technology Competency:** A CBA graduate will be able to utilize Information Technology for the completion of business tasks.

**Student Learning Objectives:**

* 1. Use data-processing tools to analyze or solve business problems.

1. **Ethical Competency:** A CBA graduate will be able to recognize ethical issues present in business environment, analyze the tradeoffs between different ethical perspectives, and make a well-supported ethical decision.

**Student Learning Objectives:**

* 1. Identify the ethical dimensions of a business decision.
  2. Recognize and analyze the tradeoffs created by application of competing ethical perspectives.
  3. Formulate and defend a well-supported recommendation for the resolution of an ethical issue.

1. **General Business Knowledge:** A CBA graduate will be able to demonstrate a basic understanding of the main business disciplines’ concepts and theories.

**Student Learning Objectives:**

* 1. Acquire a fundamental understanding of knowledge from the main business disciplines (e.g. finance, accounting, marketing, and management information systems, among others).

1. CBA Competency Goals can be found at the end of this document [↑](#footnote-ref-2)