

Course Syllabus

1	Course title	Mathematical Economics	
2	Course number	1607712	
3	Credit hours	3 hours	
	Contact hours (theory, practical)	3 hours	
4	Prerequisites/corequisites	-	
5	Program title	MA in Business Economics	
6	Program code		
7	Awarding institution	The University of Jordan	
8	School	Business	
9	Department	Business Economics	
10	Course level		
11	Year of study and semester (s)	2021/2022-First semester	
12	Other department (s) involved in teaching the course		
13	Main teaching language	English	
14	Delivery method	<input checked="" type="checkbox"/> Face to face learning <input type="checkbox"/> Blended <input type="checkbox"/> Fully online	
15	Online platforms(s)	Moodle Microsoft Teams <input type="checkbox"/> Skype <input type="checkbox"/> Zoom <input type="checkbox"/> Others.....	
16	Issuing/Revision Date		

17 Course Coordinator:

Name: Contact hours: Monday & Wednesday 12-2, and 4-5

Office number: 104

Phone number: 24167

Email: s_khatib @ju.edu.jo

**18 Other instructors:**

Name:

Office number:

Phone number:

Email:

Contact hours:

19 Course Description:

As stated in the approved study plan.

The course considers the mathematics of, and economic applications of equilibrium, slopes and derivatives, differentials, optimization (maximizing and minimizing stuff like profit, cost and utility), constrained optimization (e.g., maximizing utility subject to the budget constraint), and integration.

20 Course aims and outcomes:

A- Aims:

By the end of this course, students will be able to:

1. Use elementary methods to study systems of differential equations.
2. Formulate and solve simple economic models, stemming from “real world examples”, in terms of continuous time dynamic programming.
3. Solve constrained optimization (static and dynamic) problems.
4. Examine stability properties of solutions to economic problems in a dynamic context.
5. Demonstrate the understanding of the main solution concepts in game theory.
6. Formalize real world situations in terms of either optimization problems or games.

B- Students Learning Outcomes (SLOs):

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

1. Obtain solid grasp of essential mathematical tools required for the further studies in economic theory.
2. Be able to explain the underlying principles, terminology, methods, techniques and conventions used in the subject
3. Develop an understanding of optimization techniques used in economic theory.
4. To encourage students to think about applying these mathematical tools in their own research, if necessary, with suitable modifications
5. To be able to solve economic problems using the mathematical methods described in the course.

SLO	SLO(1)	SLO(2)	SLO(3)	SLO(4)	SLO(5)
SLO of the Course					
1. Demonstrate an economic problem and draw correct inferences using intermediate qualitative and/or quantitative analysis.	***		***		

2. Analyze the economic concepts and evaluate the theoretical background about the economic issues.		***			
3. Investigate and critically analyze factors that influence economic decision making in firms and government.			***		
4. Apply ethical principles and core economic ideas to address real world issues and problems.					
5. Construct advanced conclusions using previously learned information to deal with the contemporary economic issues and prepare and present oral presentation.					***
6. Apply advanced and effective oral and writing communication skills, using information technology to write highly developed written materials on sophisticated issues in economics.					
7. Value the current status of research and practices in economics and discuss potential ways of to contribute to the field.					
8. Write a thesis that contributes to further knowledge and understanding in a related specialized field, leading to conclusions and recommendations that benefit decision makers (Thesis track).					

21. Topic Outline and Schedule:

Week	Lecture	Topic	Intended Learning Outcome	Learning Methods (Face to Face/Blended/ Fully Online)	Platform	Synchronous / Asynchronous Lecturing	Evaluation Methods	Resources

1	1	Linear Models and Matrix Algebra Models CW ch.5economics		Face- to -face	On- capmus			
2	2	Comparative Statics and Concept of Derivative CW ch.6	SLO(1)	Face- to -face	On- capmus			
3		Rules of Differentiation and their Use in Comparative Statics CW ch.7	SLO(1) + SLO(2)	Face- to -face	On- capmus			
4	4	Comparative-Static Analysis of General – Function Models CW ch.8	SLO(2) + SLO(3)	face-to-face	On- capmus			
5	5	Optimization : A Special Variety of Equilibrium Analysis CW ch.9	SLO(2)	face-to-face	On- capmus			

6	6	Exponential and Logarithmic Functions CW ch.10	SLO(4)	face-to-face	On-campus			
7	7	The Case of More than One Choice Variables CW ch.11	SLO(6)	face-to-face	On-campus			
8	8	Mid-term Exam		face-to-face	On-campus			
9	9	Optimization with Equality Constraints CW ch. 12	SLO(4)	face-to-face	On-campus			
10	10	Comparative Statics: The Traditional Methodology SS CH.6	SLO(2)	face-to-face	On-campus			
11	11	The Derivation of Cost Function SS ch.8	SLO(5)	face-to-face	On-campus			
12	12	Ch. 15 Capital Structure and the Cost of Capital: Theory and Evidence	SLO(6)	face-to-face	On-campus			
13	13	Exam 2		face-to-face	On-campus			

14	14	The Derivation of Consumer Demand Functions SS ch.103	SLO(5)	face-to-face	On-campus			
15	15	Final Exam		face-to-face	On-campus			

22 Evaluation Methods:

Opportunities to demonstrate achievement of the SLOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	SLOs	Period (Week)	Platform
Mid-term	30			December 6	
Exam2	20			January	
Participation	10				
Final exam	40			January	
Total	100				

23 Course Requirements

(e.g: students should have a computer, internet connection, webcam, account on a specific software/platform...etc):

24 Course Policies:

A- Attendance policies:

B- Absences from exams and submitting assignments on time:



- C- Health and safety procedures:
- D- Honesty policy regarding cheating, plagiarism, misbehavior:
- E- Grading policy:
- F- Available university services that support achievement in the course:

25 References:

1. The Structure of Economics: A Mathematical Analysis, **Eugene Silberberg** and **Wing Suen**, 3rd Edition, McGraw-Hill, 2001.
2. Fundamental Methods of Mathematical Economics, **Alpha C. Chiang** and **Kevin Wainwright**, 4th edition, McGraw-Hill 2005.

26 Additional information:

Name of Course Coordinator: -----Signature: -----Farah----- Date: -----
Head of Curriculum Committee/Department: ----- Signature: -----
Head of Department: ----- Signature: -----
Head of Curriculum Committee/Faculty: ----- Signature: -----
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Dean: ----- Signature: -----