

SCHOOL OF ECONOMIC SCIENCES

Department of Economics

Department of International & European Economic Studies

STUDY GUIDE M.Sc. IN ECONOMICS full-time program

Academic year 2020-21



PART I: INFORMATION ABOUT THE INSTITUTION

ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS (AUEB)

Contact details

Address: 76, Patission Str. GR-104 34, Athens

Telephone number: +30-210-8203911

Website: https://www.aueb.gr e-mail: webmaster@aueb.gr

Facebook: https://www.facebook.com/auebgreece

Twitter: https://twitter.com/aueb

Linkedin:https://www.linkedin.com/school/athens-university-of-economics-and-business/mycompany/

Youtube: https://www.youtube.com/channel/UCPncunqp3bMuAHHeCikhalg

Instagram: https://www.instagram.com/aueb.gr/

ACADEMIC AUTHORITIES

The rectorate authorities consist of the Rector and the Vice Rectors, as per below:

Rector:

Professor Dimitris Bourantonis

Vice Rectors:

Vice Rector of Academic Affairs and Personnel

Professor Vasilios Vasdekis

Vice Rector of Research and Lifelong Learning

Associate Professor Georgios Lekakos

Vice Rector of Financial Planning and Infrastructure

Professor Konstantinos Drakos

Vice Rector of International Cooperation and Development

Professor Vasilios Papadakis

UNIVERSITY LEADERSHIP & STRUCTURE

The organization and operation of the Institution is defined by current legislation as in force. Athens University of Economics and Business is under the supervision of the Ministry of Education, Research and Religious Affairs. Its structure includes:

THE SENATE

The **Senate** consists of:

• the Rector,

- the Vice-Rectors,
- the Deans of the Schools
- the Heads of the Departments
- one representative of undergraduate students, postgraduate students and doctoral candidates each
- one representative per category of staff: Special Educational Staff (EEP), Laboratory Teaching Staff (EDIP), Special Technical Laboratory Staff (ETEP) and administrative staff.

The **Senate** is the highest collective decision-making body of the University. It is comprised of the Rector, the Vice-Rectors, the Deans of the Schools, the Chairmen/Chairwomen of the Departments, students, teaching staff and administrative staff delegates.

SCHOOLS

The Athens University of Economics and Business consists of three Schools:

- **1. SCHOOL OF ECONOMIC SCIENCES**, which supervises and coordinates the operation of the Department of International and European Economic Studies and the Department of Economics.
- **2. SCHOOL OF BUSINESS**, which supervises and coordinates the operation of the Department of Management Science and Technology, the Department of Business Administration, the Department of Accounting and Finance and the Department of Marketing and Communication.
- **3. SCHOOL OF INFORMATION SCIENCE AND TECHNOLOGY**, which supervises and coordinates the operation of the Departments of Informatics and the Department of Statistics.

According to Law 4485/2017 (Government Gazette 114 / 4-8-2017), each School is governed by the Dean of the School, the Dean's Council and the School's General Assembly, while each Department is governed by the Department's Chairman and General Assembly.

DEPARTMENTS

The Department is the University's main educational and academic unit, which promotes science and knowledge development in the relevant academic field, organizes and delivers teaching and ensures continuous improvement in research and education. The Department consists of the Professors, Associate Professors, Assistant Professors, Lecturers, members of the Special Educational Staff (EEP), members of the Laboratory Teaching Staff (EDIP) and members of the Special Technical Laboratory Staff (ETEP).

The Departments of the Athens University of Economics and Business are:

- 1. International and European Economic Studies
- 2. Economics
- 3. Management Science and Technology
- 4. Business Administration
- 5. Accounting and Finance
- 6. Marketing and Communication
- 7. Informatics
- 8. Statistics

According to Law 4485/2017 (Government Gazette 114 / 4-8-2017), each Department is governed by the Department's Chairman and the General Assembly.

UNIVERSITY STAFF

The University staff consists of the following categories:

- > TEACHING STAFF:
 - The Faculty consisting of (a) Professors, (b) Associate Professors (c) Assistant Professors and (d) Lecturers.
 - Special Educational Staff (E.E.P.).
 - Laboratory Teaching Staff (E.DI.P.).
 - Special Technical Laboratory Staff (E.T.E.P.).
 - Auxiliary Teaching Staff (E.D.P.).
 - Research Assistants.
 - University Scholars.
 - Special Assignment Teachers.
- ➤ ADMINISTRATIVE STAFF

STUDENT SERVICES & FACILITIES

The Athens University of Economics and Business provides both administrative and other services (meals, housing, library, sport facilities etc.) aiming at serving both its students and staff. More information on the organization and operation of the University's services can be found on the University's website (http://www.aueb.gr/en).

GENERAL DESCRIPTION OF THE UNIVERSITY

Athens University of Economics and Business (AUEB), as a Higher Educational Institution, is a legal entity governed by public law and supervised by the Ministry of Education, Research and Religious Affairs.

AUEB is, in order of seniority, the third Higher Education Institution of the country and the first in the fields of Economics and Business Administration. Later, the scientific fields of Informatics and Statistics were added. Since its founding, in 1920, AUEB has a rich and noteworthy tradition of significant academic achievements that define the present and create excellent prospects for the future.

The University as a center of excellence, in academic research and teaching, is rated as one of the leading universities in its subject areas in Greece and one of the best internationally. The high level of its scientific staff, the quality in teaching and research, the modern curriculum/courses, but also the high demand of its graduates enhance significantly the University's brand name and reputation, in Greece and abroad.

More information can be found on the University's website (http://www.aueb.gr).

PART II: INFORMATION ABOUT THE MASTER OF SCIENCE (MSc) IN ECONOMICS

SCHOOL OF ECONOMIC SCIENCES

Dean: Associate Professor Anastasia Miaouli

DEPARTMENT OF ECONOMICS

Chair: Professor George Alogoskoufis

DEPARTMENT OF INTERNATIONAL & EUROPEAN ECONOMIC STUDIES

Chair: Professor George Economides

MASTER'S PROGRAM IN ECONOMICS

Director: Associate Professor Stylianos Arvanitis

Contact details

Address: 47A, Evelpidon & 33, Lefkados Str., 113 62, Athens, 9th floor, office 909

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Email: post.econ@aueb.gr

Website: https://gradecon.aueb.gr

ACADEMIC CALENDAR

Fall semester teaching: 12 October 2020 - 29 January 2021 Christmas holidays: 23 December 2020 - 6 January 2021

Fall semester exams: 8-19 February 2021

Spring semester teaching: 22 February - 4 June 2021

Easter holidays: 26 April - 7 May 2021

Spring semester exams: 14 June - 9 July 2021

HOLIDAYS

Wednesday, October 28, 2020, The Anniversary of the "No" Tuesday, November 17, 2020, The Anniversary of Polytechnio

Wednesday, January 6, 2021, Epiphany

Monday, March 15, 2021, Clean Monday

Thursday, March 25, 2021, Greek Independence Day

Monday, June 21, 2021, Pentecost

A) GENERAL DESCRIPTION

The MSc in Economics program is offered by the Department of Economics and the Department of International & European Economic Studies since the academic year 2018-19. It is the evolvement of the Economic Theory specialization of the MSc in Economics program of the Department of Economics, which was the first master's program in Economics run in Greece (1978) and which, during its long history, has trained highly qualified economists, many of whom now hold academic and research positions in universities and research institutes or occupy high level managerial positions on the public and private sector both in Greece and abroad.

Its aim is to educate and train economists of high scientific standards in the fields of Economic Theory and Policy.

The program places particular emphasis on the subject areas of Macroeconomic Theory, Microeconomic Theory and Applied Microeconomics, Theoretical and Applied Econometrics, Finance Theory and Asset Pricing, Industrial Organization, Public Economics, Game Theory, International Economics, Environmental and Energy Economics, Mathematical Economics, Labor Economics, Economic Development.

QUALIFICATION AWARDED

The MSc in Economics Program awards the degree of Master of Science (MSc) in Economics.

ADMISSION REQUIREMENTS

Admissions are made on the basis of academic potential to meet the Program's high demands. Applicants are required to have:

- 1. Degree from an accredited University in scientific fields like Economics, International and European Economic Studies, Regional Economics, Finance, Statistics, Mathematics, Physics, Engineering, Informatics.
- 2. Certificate of strong command of the English language (Level C1 or C2)

Applicants coming from non-Greek Universities are required to submit in due course a Recognition Act from <u>DOATAP</u> that their degree is recognized as equivalent to the Greek Universities degrees.

The call for applications is announced on the Program's website around March every year. Applications are submitted online from March to June. Available admissions are limited. Evaluation of the applicants and admission offers are made throughout the application period and in order of priority.

Selection of candidates is based on:

- •Academic performance (e.g. first degree origin, grade, years for completion, etc.)
- •Certificate of English proficiency (Level C2/C1) (e.g. TOEFL with a grade greater than 79, IELTS with a grade greater than 7, TOEIC with a grade greater than 785, etc)
- Academic recommendations
- Personal interview
- •GRE or GMAT scores (if available; not required)

Enrollment takes place in September-October, following an announcement of the Program's Secretariat.

EDUCATIONAL AND PROFESSIONAL GOALS

The MSc in Economics trains students to understand and analyze the interacting decisions and choices of individuals and firms using the tools of microeconomic theory, such as consumer, production and game theory. In addition, they become familiar with the basic theories, methodologies and techniques of modern macroeconomic analysis as well as study the interaction between the two main strands of economic theory. They are also exposed to econometric theory and practice the use of modern econometric models and techniques through advanced statistical/econometric computational resources.

Graduates are well equipped to either seek employment in large companies and organizations of private and public sector in Greece and abroad (such as large private companies, public authorities, Ministries, Banks) or to continue for PhD Studies in internationally known Universities in order to be employed later in Universities (as Faculty Members), research institutes and organizations, Central Banks, Research Departments of commercial banks, etc.

ACCESS TO FURTHER STUDIES

Upon completion of the MSc Program, students can access doctoral studies.

In particular, many graduates of the Program continue for doctoral studies either in Greece, such as in the Department of Economics and the Department of International & European Economic Studies of AUEB, or in internationally known Universities abroad, such as Yale, MIT, Princeton, UCLA, Oxford, LSE UK, Harvard, Cambridge, Michigan, Bocconi, Groningen, Manheim, Stockholm etc.

LANGUAGE OF INSTRUCTION/EXAMINATION

The language of instruction and exams is English and/or Greek. When at least one non-Greek speaking student is admitted to the Program, the language of instruction and exams is English.

TUITION FEES

The tuition fees are 2.500 Euros and are payable in 3 installments (first installment: 900 Euros, second installment: 800 Euros, third installment: 800 Euros).

An amount of 500 Euros which is part of the first installment shall be paid to guarantee the offered position and the rest of the first installment is paid upon registration in the program at the beginning of first semester.

The remaining installments are paid at the beginning of each of the other two semesters.

MODE OF STUDY AND OFFICIAL LENGTH OF THE PROGRAM

The MSc in Economics Program is a full-time program. It consists of either 3 or 4 academic semesters depending on whether students choose to undertake a dissertation or take extra courses. In particular, during the 1st (fall) and 2nd (spring) semester students are required to attend 4 and 5 courses respectively and then they decide whether they wish to undertake a dissertation during 3rd semester or to attend 6 advanced courses during 3rd and 4th semester.

COURSE STRUCTURE DIAGRAM WITH CREDITS

COURSES PER SEMESTER	ECTS credits
Preparatory courses (September)	
Preparatory in Mathematics for Economists	_
Preparatory in Statistics for Economists	_
(or Introduction in Economics for non-Economists)	_
1st (Fall) Semester	
Microeconomic Theory	7,5
Macroeconomic Theory	7,5
Econometrics	7,5
Mathematics for Economists	7,5
total ECTS of 1st Semester:	30
2nd (Spring) Semester	
Microeconomic Theory and Policy	6
Macroeconomic Theory and Policy	6
Data Analysis, Applied Econometrics and Computational Methods	6
Two elective courses from the list of 2nd semester electives*	2×6=12
total ECTS of 2nd Semester:	30
3rd (Fall) Semester	
Dissertation	30
or	
3rd (Fall) and 4th (Spring) Semesters (instead of dissertation)	
Six elective courses from the list of 3rd and 4th semester electives**	6×5=30
total ECTS of MSc in Economics:	90

*2nd semester electives (6 ECTS each)

Industrial Organization
Finance Theory
Quantitative Methods in Finance
Public Finance
Environmental Economics
Mathematical Economics
Economic Development and Social Policy
labor Economics

** 3rd and 4th semester electives (5 ECTS each)

Advanced Topics in International Trade
Advanced Topics in International Macroeconomics
Advanced Topics in Theoretical and Applied
Econometrics
Advanced Topics in Game Theory and Information
Economics
Advanced Topics in Finance
Advanced Topics in Economic Growth
Advanced Topics in Public Finance
Advanced Topics in Monetary Policy

FINAL EXAMINATION

Fall semester final exams occur in January-February and spring semester final exams occur in May-June. Resit exams take place in September.

EXAMINATION AND ASSESSMENT REGULATIONS

The final assessment for each course is consisted of written exams. Written exams can be partially substituted by assignments, upon the Program Committee's approval.

The formulation of the final grade in a course is determined by the course's instructor. Individual and team assignments can be part of the formulation.

Participation in the exams is mandatory.

Grades can either be round numbers or decimals to a half, from zero (0) to ten (10). The passing grades are the ones greater than or equal to 5.

If a student skips an exam, he/she fails the exam.

Failure in more than two (2) courses overall (of the total of all semester courses) means failure to complete the Program and results in the end of studies. Failure in up to two courses in an exam period allows the student to continue to the next semester, but he/she must resit the exam of course(s). Failure in any of the resit exams also leads to the end of studies.

B) DESCRIPTION OF INDIVIDUAL COURSE UNITS

Course title	PREPARATORY IN STATISTICS FOR ECONOMISTS
Course code	m11201f
Type of course	Non compulsory
Level of course	Master's
Year of study	1st
Semester	1 st (preparatory stage)
Number of credits allocated	0
Name of lecturer	Yannis Bilias, Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	The goal of this prep course is to equip students with the essential mathematical and statistical background for the smooth attendance of the econometric and, more generally, quantitative courses.
Prerequisites	Knowledge of statistics and mathematics at undergraduate level
Course contents	The purpose of this course is to refresh the basic concepts of statistics needed in econometrics and other courses. The topics covered are the following. Continuous and discrete random variables, probability and distributions. Expected value, variance, moments. Basic theoretical distributions. Multivariate distributions, conditional distributions. Stochastic independence, covariance and correlation. Sampling distributions. Hypothesis testing and estimation based on the method of maximum likelihood. Other methods of estimation (method of moments, etc.). The laws of large numbers and the central limit theorems. Presentation of the linear model using linear algebra. Estimation of the linear model with least squares and maximum likelihood methods.
Recommended reading	M.H. DeGroot (1986): <i>Probability and Statistics</i> , 2nd ed., Addison Wesley (ch1-8) Johnston, J. and J. DiNardo (1997): <i>Econometric Methods</i> , 4th ed, McGraw-Hill. (app

	A, B) W.H. Greene (2012): Econometric Analysis, 7th ed, Prentice Hall. (app A, B, C, D)
Teaching methods	Lectures and exercises
Assessment methods	Without grading
Language of instruction	English

Course title	PREPARATORY IN MATHEMATICS FOR ECONOMISTS
Course code	m11202f
Type of course	Non compulsory
Level of course	Master's
Year of study	1st
Semester	1 st (preparatory stage)
Number of credits allocated	0
Name of lecturer	Spyridon Vassilakis, Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	The purpose of this preparatory course is to provide the level of knowledge in mathematics which is necessary for the students who will attend the Program. In particular: **Knowledge:** Upon completion of the course, students will know the basic concepts of linear algebra, scalar and vector optimization, convex sets, concave and quasiconcave functions, the basic theorems of optimization on existence, necessary conditions, sufficient conditions and properties of optimal solution sets, and their importance for economics. **Skills:** Upon completion of the course, students will be able to use the knowledge they have gained to solve linear algebra problems, scalar and vector optimization problems, and to utilize the elementary tools of convexity. **Abilities:** Upon completion of the course, students will be able to follow the required MSc courses.
Prerequisites	none
Course contents	It includes topics like set theory, vectors in Rn, topology in the Euclidian space, functions and equations, linear algebra and matrices, differential calculus, concave / quasi-concave and convex / quasi-convex functions, optimization with and without constraints.
Recommended reading	1.Simon and Blume: Mathematics for Economists 2.takayama: analytical methods in economics 3.de la Fuente: Mathematical Methods and Models for Economists 4.webster: convexity 5.nikaido: introduction to sets and mappings in modern economics
Teaching methods	Lectures/exercises
Assessment methods	exercises
Language of instruction	English

Course title	MICROECONOMIC THEORY
Course code	m11104f
Type of course	Compulsory
Level of course	Master's
Year of study	1st
Semester	1st (fall)
Number of credits allocated	7,5
Name of lecturer	Spyridon Vassilakis, Professor
Objective of the course	knowledge
(preferably expressed in	Upon completion of the course, students will know some of the basic concepts of

terms of learning outcomes	scalar and vector optimization, competitive equilibrium, and welfare economics,
and competences)	and their importance for economics.
	Skills
	Upon completion of the course, students will be able to use the knowledge they
	have gained to solve economic problems with the elementary tools of competitive
	equilibrium, and welfare economics.
	Abilities
	Upon completion of the course, students will be able to follow more
	advanced/specialized courses and initiate their study of this part of the economics
	literature.
Prerequisites	none
Course contents	Producer Theory:
course contents	Production Sets, production functions, profit maximization
	Testable implications of producer theory (WARP)
	Properties of indirect profit/net supply functions 2
	Representative producers.
	Consumer theory:
	Preferences, utility functions, utility maximization.
	Testable implications of consumer theory (WARP, GARP, SARP)
	Properties of indirect utility functions
	· ·
	Properties of individual excess demand functions (H-W-B-SARP)
	Properties of market excess demand functions (H-W-B - but not always SARP or
	WARP)
	Positive and normative representative consumers.
	Competitive equilibrium:
	Definition: computational examples, competitive equilibrium with taxes and lump-
	sum transfers
	Special cases: (1x1x2 economy, 2x2x2 economy, exchange economy, small open
	economy, economies of Leontief and von Neumann).
	Existence: large non-convexities relative to market size, non-interior endowments.
	Uniqueness: WARP and constant returns to scale, WARP in an exchange economy,
	taxes, externalities, economies with an arbitrarily large number of equilibria,
	economies with Pareto-ranked equilibria.
	Stability: WARP in an exchange economy, substitutes and complements, wealth
	effects, economies with a unique and unstable equilibrium.
	Comparative statics: substitutes and complements, wealth effects, the transfer
	paradox the paradox of productivity, the paradox of piecemeal policy reforms, the
	paradox of immiserating growth.
	Testable implications: level of aggregation, externalities, testability of local stability
	and uniqueness.
	Welfare analysis:
	Pareto efficient points: definition, examples, two methods of calculation
	First and second welfare theorems: conditions for efficient equilibria, interactions
	between efficiency and distribution
	Distortions (third welfare theorem): efficiency when different agents face different
	relative prices
	Compensatory distortions (second-best theorem)
	Equilibrium with externalities/public goods: The four kinds of externalities, market
	and non-market corrections.
	The national income test: national income as an index of welfare, with and without
	distortions.
Recommended reading	1. Andreu Mas-Colell, Michael D. Whinston and Jerry R. Green: Microeconomic
	Theory
	2. Hal R. Varian: Microeconomic Analysis.

	3. David M. Kreps: Microeconomic Foundations I. Choice and Competitive Markets
	4. Geoffrey A. Jehle and Philip J. Reny: Advanced Microeconomic Theory
Teaching methods	Lectures/exercises
Assessment methods	Written examinations
Language of instruction	English

Course title	MACROECONOMIC THEORY
Course code	m11105f
Type of course	compulsory
Level of course	Master's
Year of study	1st
Semester	1 st (fall)
Number of credits allocated	7,5
Name of lecturer	George Alogoskoufis Professor
Objective of the course (preferably expressed in	The course aims to present the main models used in modern macroeconomic analysis and research, and to familiarize students with them as well as with current
terms of learning outcomes and competences)	analytical methods and techniques.
Prerequisites	It assumes some familiarity with undergraduate macroeconomics and basic mathematical tools.
Course contents	We focus on models of economic growth and aggregate fluctuations, unemployment and inflation and monetary and fiscal policy. The course covers the following topics: 1. Models of exogenous and endogenous growth. 2. New Classical and New Keynesian models of aggregate fluctuations. 3. Models of Monetary and Fiscal Policy
Recommended reading	Alogoskoufis, G. (2019), Dynamic Macroeconomics, Cambridge, MA., MIT Press
Teaching methods	Lectures and exercises
Assessment methods	Final written exam and class assignments
Language of instruction	English

Course title	ECONOMETRICS
Course code	m11106f
Type of course	Compulsory
Level of course	Master's
Year of study	1st
Semester	1 st (fall)
Number of credits allocated	7,5
Name of lecturer	Yannis Bilias, Professor
Objective of the course	The goal of this course is to equip students with rigorous econometric background
(preferably expressed in	that will allow the attendance of econometric topics in subsequent courses, the
terms of learning outcomes	study of empirical papers from various fields in economics, and the use of
and competences)	computing.
Prerequisites	Knowledge of statistics and linear algebra at undergraduate level
Course contents	The course is a standard first treatment of the linear model at an advanced level. It
	provides coverage of the OLS estimation of the linear model, finite and large-sample
	statistical properties of the OLS estimator, testing, violation of the classical
	assumptions and GLS estimation. It proceeds with alternative methods of estimation
	as Generalized Method of Moments (GMM) and Maximum Likelihood (ML).
Recommended reading	W.H. Greene (2012): Econometric Analysis, 7th ed, Prentice Hall.

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	F. Hayashi (2000): Econometrics}, Princeton UP.
	J. Johnston and J. DiNardo (1997): Econometric Methods}, 4th ed, McGraw-Hill.
Teaching methods	Lectures and labs in R and Matlab
Assessment methods	Midterm, final exam, project.
Language of instruction	English

Course title	MATHEMATICS FOR ECONOMISTS
Course code	m11107f
Type of course	compulsory
Level of course	Master's
Year of study	1st
Semester	1 st (fall)
Number of credits allocated	7,5
Name of lecturer	Vanghelis Vassilatos, Associate Professor
Objective of the course	This course is an introduction to commonly used dynamic optimization methods in
(preferably expressed in	economics. The emphasis is on solution methods rather than rigorous proofs.
terms of learning outcomes	After completing the course, students will be able to compile the knowledge they
and competences)	have gained and, apply the techniques mastered in order to analyze, evaluate and
	solve dynamic models of the kind encountered in economics.
Prerequisites	
Course contents	Discrete Dynamics. First, second and higher order linear difference equations. Linear difference equations systems. Continuous Dynamics. First, second and higher order linear differential equations. Linear differential equations systems. Phase Diagrams. Solution methods of linear rational expectations systems. Dynamic Optimization in Discrete and Continuous Time Dynamic Systems. Optimal control. Dynamic programming.
Recommended reading	Adda, Jerome and Cooper, Russell, Dynamic Economics, MIT Press, 2003.
	Blanchard, Olivier and Fischer, Stanley, Lectures on Macroeconomics, MIT Press, 1989.
	Caputo, Michael R., Foundations of Dynamic Economic Analysis, Optimal Control Theory and Applications, Cambridge University Press, 2005.
	Chiang, Alpha, Elements of dynamic optimization, McGraw-Hill, 1992.
	Farmer, Roger, The Macroeconomics of Self-Fulfilling Prophecies, MIT Press, 1993. Gandolfo, Giancarlo, Economic Dynamics, Springer 1997.
	Hoy, Livernois, McKenna, Rees, Stengos, Mathematics for Economics, 2nd edition, MIT Press, 2001.
	Kamien, Morton and Schwartz, Nancy, Dynamic Optimization, North Holland 1991. Ljungqvist, Lars, Sargent, Thomas J., Recursive Macroeconomic Theory, 3d edition, MIT Press, 2012.
	Shone, Ronald, Economic Dynamics, Cambridge University Press, 1997. Sorger, Gerhard, Dynamic Economic Analysis, Deterministic Models in Discrete
	Time, Cambridge University Press, 2015.
	Stachurski, John, Economic Dynamics, Theory and Computation, MIT Press, 2009.
	Stokey, N.L., Lucas, R.E., Recursive Methods in Economic Dynamics, Harvard
	University Press, 1989.
	Sydsaeter, Hammond, Seierstad, Strom, Further Mathematics for Economic
	Analysis, Prentice Hall, 2005 Turkington, D.A. Mathematical Tools for Economics, Blackwell, 2007
Tooching mothods	Turkington, D.A., Mathematical Tools for Economics, Blackwell, 2007. Lectures and tutorials
Teaching methods Assessment methods	Final exam / Assignments (10% bonus on the final exam grade if all submitted)
Language of instruction	English

Course title	MICROECONOMIC THEORY & POLICY
Course code	m11108f
Type of course	compulsory
Level of course	Master's
Year of study	1st
Semester	2 nd (spring)
Number of credits allocated	6
Name of lecturer	Nikolaos Vettas, Professor
	Lambros Pechlivanos, Ass. Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	Master the basic notions and tools concerning pricing with market power, uncertainty and information and strategic behavior – game theory.
Prerequisites	First semester courses in the MSc program, especially the Micro I and the Mathematics courses.
Course contents	 Part A: Market structure and welfare. From perfect competition to monopoly and between. Optimal pricing, elasticity, and monopoly distortion. Basic concepts in game theory. Introduction to the economics of strategic behavior. Static games of complete information and the strategic (normal) form representation. Dynamic games of complete information and the extensive form representation Subgame Perfection. Leading applications of game theory: Oligopoly theory and Bargaining Repeated games and the folk theorem; trigger strategies and collusion.
Recommended reading	Main texts: A.Mas-Colell, M.Whinston and J.Green, Microeconomic Theory, Oxford, 1995 R.Gibbons, A Primer in Game Theory, Harvester Whaetsheaf, 1992 D.Kreps: A Course in Microeconomic Theory, Princeton, 1990 Additional: D.Fudenberg, and J.Tirole, Game Theory, MIT Press, 1991 P.Bolton and M.Dewatripont, Contract Theory, MIT Press, 2005
Teaching methods	Lectures and problem sets
Assessment methods	Problem sets, midterm and final exam
Language of instruction	English

Course title	MACROECONOMIC THEORY & POLICY
Course code	m11109f
Type of course	compulsory
Level of course	Master's
Year of study	1st
Semester	2 nd (spring)
Number of credits allocated	6

Name of lecturer	Sarantis Kalyvitis, Professor
	George Economides, Professor
	Evangelos Vassilatos, Associate Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	Upon completion of the course, students will be able to use the basic dynamic models of economic growth and aggregate fluctuations and evaluate alternative macroeconomic policies.
Prerequisites	Macroeconomic Theory
Course contents	In this course we study the theory and empirical investigation of economic growth and economic fluctuations. The course aims at presenting the basic models used by economists to study the economic fluctuations and to analyze the basic methodologies and techniques of modern macroeconomic analysis. The course covers the following topics: growth model with exogenous technological progress (Solow-Swan model, Ramsey-Cass-Koopmans model), models of endogenous economic growth and economic policy, investment theory, the model of real business cycles, unemployment theories, implications for the conduct of monetary and fiscal policy in models with market and policy failures.
Recommended reading	Acemoglu (2009): Introduction to Modern Economic Growth. Princeton. Aghion P. and P. Howitt (2009): The Economics of Growth. MIT Press. Alogoskoufis G. (2019): Dynamic Macroeconomics. MIT Press. Barro R. and X. Sala-i-Martin (2003): Economic Growth. 2 nd edition. McGraw Hill. Blanchard O. and S. Fischer (1989): Lectures on Macroeconomics. MIT Press. Drazen A. (2000): Political Economy in Macroeconomics. Princeton University Press. Sargent T. (1987a): Macroeconomic Theory. Academic Press. Sargent T. (1987b): Dynamic Macroeconomic Theory. Harvard University Press. Turnovsky S. (2000): Methods of Macroeconomic Dynamics. 2 nd edition. MIT Press. Wickens M. (2008): Macroeconomic Theory. Princeton.
Teaching methods	Lectures and tutorials
Assessment methods	Final exam (80%) and a project (20%).
Language of instruction	English

Course title	DATA ANALYSIS, APPLIED ECONOMETRICS AND COMPUTATIONAL METHODS
Course code	m11110f
Type of course	compulsory
Level of course	Master's
Year of study	1st
Semester	2 nd (spring)
Number of credits allocated	6
Name of lecturer	Elias Tzavalis, Professor
	Ioannis Dendramis, Assistant Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	The aim of this course is to introduce students to applied econometric and data analysis methods. The first part of the course (Part A) covers topics in time series models (AR, MA, ARIMA) and estimation and forecasting procedures, for them. It also presents their multivariate extension (VAR-SVAR models), and presents the topics of integration-cointegration. The second part presents volatility models, and their applications in managing economic risks. Moreover, it presents econometrics models for large datasets. At the end of the course the students would have learned the recent applied econometric techniques and become familiar with applications of them, in practice, using computer software.
Prerequisites	
Course contents	<u>Part A</u> : Time Series Models: AR(p), MA(q) and ARIMA(p,d,q) models, the estimation methods of ML, LS and non-linear LS (NLLS), Integration-cointegration analysis,

	Multivariate framework: VAR, SVAR and VECM models Part B: Volatility models (ARCH, GARCH, MGARCH etc), estimation and theoretical properties, and econometric models for large datasets, (Factor models, PCA, Large Panel Data).
Recommended reading	Hamilton, J.D., Time Series Analysis, Chs, 2, 3, 5, 10, 11, 15, 17, 19 Hansen, B, Econometrics, Econometrics.pdf (wisc.edu) Green, W.H. Econometric Analysis, Chapter 20 Hayashi, F. Econometrics, Ch9-10 Tsay, Ruey S. Analysis of financial time series, John Wiley & Sons.
Teaching methods	Lecturing, laboratory practicals, tutorials and external seminars
Assessment methods	Written exams and assignments
Language of instruction	English

Course title	INDUSTRIAL ORGANIZATION
Course code	m11211f
Type of course	Elective
Level of course	Master's
Year of study	1st
Semester	2 nd (spring)
Number of credits allocated	6
Name of lecturer	Eleftherios Zacharias, Assistant Professor
	Fabio Antoniou, Assistant Professor
	Christos Genakos, Associate Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	The implications of the Cournot model on mergers, welfare and the existence of network externalities. The analysis of models of horizontal and vertical differentiation. Analytical and critical thinking, combination of different models and derivation of new findings in mechanism design and in dynamic pricing. Empirical estimation of demand and supply in oligopolistic markets.
Prerequisites	Basic knowledge of microeconomics
Course contents	The Cournot model and its implications. A quadratic utility, representative consumer model. Horizontal differentiation and spatial competition. Vertical differentiation. Entry Deterrence, Foreclosure and Limit Pricing. Introduction in Contract Theory, Procurement Contests under Asymmetric Information. Durable and Storable Goods Markets. Time Inconsistency, Linear and Non-linear Pricing. Applications on Behavioral Industrial Organization. Introduction to Empirical IO and Structure-Conduct-Performance paradigm Static Market Models and Firm Conduct Differentiated Product Markets and Demand Estimation Estimating Production Functions
Recommended reading	 Tirole, J. (1988) The Theory of Industrial Organization, MIT press Laffont, J.J & Martimort, D. (2002), The Theory of Incentives: The Principal-Agent Model, Princeton University Press. Vives, Xavier, Oligopoy Pricing: Old Ideas and New Tools, MIT Press, 1999. Peter Davis and Eliana Garcés (2010), Quantitative Techniques for Competition and Antitrust Analysis, Princeton University Press.
Teaching methods	In class lectures, homework
Assessment methods	Mid-term, Final
Language of instruction	English

Course title	QUANTITATIVE METHODS IN FINANCE
Course code	m11213f
Type of course	elective
Level of course	Master's
Year of study	1st
Semester	2 nd (spring)
Number of credits allocated	6
Name of lecturer	Panagiotis Konstantinou, Assistant Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	The course aims at providing a solid understanding of applied finance in order to bridge the gap between theoretical financial models and the (real) world of applied finance. Both theoretical and practical aspects are analyzed, which are important for comprehending financial markets. The main objectives include: • Exposing students to the statistical/econometric methodologies that are necessary for understanding applied finance. • Familiarizing students with important economic issues in finance. • Present and analyze financial data and how these can be used to make informed decisions. At the end of the course, students should know: • how to access various sources of financial data, • design empirical tests of theoretical issues; and
Duanamidita	apply basic programming skills to analyze the data and arrive at conclusions.
Prerequisites Course contents	Econometrics Time Series Concepts
	 Stationarity and Ergodicity and Applications Estimation of Long-Run Variances Generalized Method of Moments The linear case: IV Estimation The non-linear Case CAPM and APT Consumption-CAPM and the Equity Premium Puzzle AR, MA, ARMA Models Efficient Market Hypothesis and Random Walks Stationarity and Invertibility Forecasting and Forecast Evaluation Stationary and Non-Stationary Time Series: Trend-Cycle Decomposition VAR Models Cointegration Structural VAR Models and Causal Inference
Recommended reading	Campbell, J.Y., A.W. Lo and A.C. MacKinlay (1997) <i>The Econometrics of Financial Markets</i> , Princeton University Press. Cochrane, J. H. (2001) <i>Asset Pricing</i> , Princeton University Press. Cuthbertson, K. and D. Nitzche (2005) <i>Quantitative Financial Economics</i> , Wiley Hansen, B. (2020) <i>Econometrics</i> Hamilton, J. D. (1994) <i>Time Series Analysis</i> , Princeton University Press Kilian, L. and H. Lütkepohl (2017) <i>Structural Vector Autoregressive Analysis</i> , Cambridge University Press Angrist, J. D. and JS. Pischke (2009) <i>Mostly Harmless Econometrics: An Empiricist's Companion</i> , Princeton University Press
Teaching methods	Face to face Lectures Seminar: Case-Study Analysis Empirical Analyses using R

Assessment methods	Assignments (40%)Final Written Examination/Final Project (60%)
Language of instruction	English

Course title	PUBLIC FINANCE
Course code	m11214f
Type of course	elective
Level of course	Master's
Year of study	1st
Semester	2 nd (spring)
Number of credits allocated	6
Name of lecturer	Pantelis Kammas, Assistant Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	By the end of the course we will be able to answer: (1) what determines the size of government redistributive programs (2) to analyze the relationship between economic theory (theoretical models) and empirical findings and (3) to explain why national governments often decide to not implement the socially optimal policy.
Prerequisites	No Prerequisites for this course
Course contents	The course provides an introduction to the basic theoretical models, empirical methodologies, and substantive findings in public finance and political economics. It covers not only theoretical and empirical research, but also the links between the two. The aim of the module is to familiarize the student with the tools of modern political economics and show how these tools can be used in order to answer what determines the size of government redistributive programs and why national governments often decide to not implement the socially optimal economic policy.
Recommended reading	 Acemoglu, A. Political Economy Lectures Notes https://economics.mit.edu/files/8753 Atkinson, A. and Stiglitz, J. (2015). Lectures in Public Economics New York, NY: McGraw Hill. Hindriks, J. and Myles, G. (2013). Intermediate Public Economics. The MIT Press. McCarty N., Meirowitz, A. (2007). Political Game Theory: An Introduction. Cambridge University Press. Persson, T. and Tabellini, G. (2002) Political Economics: Explaining Economic Policy. The MIT Press.
Teaching methods	Lectures
Assessment methods	Final Exams 50% and Written assignments/ Oral Presentations 50% of the final score.
Language of instruction	English

Course title	ENVIRONMENTAL ECONOMICS
Course code	m11215f
Type of course	elective
Level of course	Master's
Year of study	1st
Semester	2 nd (spring)
Number of credits allocated	6
Name of lecturer	Anastasios Xepapadeas, Professor
Objective of the course	The objective is to enable students to understand the drivers of current issues and
(preferably expressed in	problems related to environment and natural resources including climate; the methods
terms of learning outcomes	to analyse them; and the ways used in order to design efficient policies in theory and
and competences)	practice.
Prerequisites	

Course contents	The course will begin with the introduction of environmental externalities as a source of failure of competitive markets to attain Pareto efficient market solutions. This type of market failure induces environmental regulation, which will be covered next. In this part, environmental policy instruments in theory and practice will be presented. More specifically, it will include: Command and control regulation (limits and standards); Market based instruments (Pigouvian taxation and emission taxes, subsidies, tradable emission permits, input taxes, deposit-refund systems) and voluntary agreements. Policy analysis will include flow and stock pollution along with the analysis of pollution dynamics; Bargaining solutions as a means of correcting environmental externalities (Coasian bargaining) will also be discussed. This part will conclude with an introduction to the economics of climate change which represents the greatest and widest-ranging market failure ever seen. The course will conclude with an introduction to environmental valuation methods: Revealed preference methods, Contingent valuation methods, Discrete choice experiments, Benefit transfer.
Recommended reading	 D. Phaneuf and T. Requate, 2017, A Course in Environmental Economics: Theory, Policy and Practice, Cambridge University Press. E. Economides, A. Papandreou, E. Sartzetakis, and A. Xepapadeas, 2018, The Economics of Climate Change, The Bank of Greece. G. Atkinson, N. A. Braathen, B. Groom and S. Mourato, 2018, Cost-Benefit Analysis and the Environment Further Developments and Policy Use, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264085169-en
Teaching methods	Lectures accompanied by slide presentations Lectures and essays
Assessment methods	Essay 25% of the final grade. Final exam 75% of the final grade.
Language of instruction	English

Course title	MATHEMATICAL ECONOMICS
Course code	m11216f
Type of course	elective
Level of course	Master's
Year of study	1st
Semester	2 nd (spring)
Number of credits allocated	6
Name of lecturer	Stylianos Arvanitis, Associate Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	To obtain some level of maturity in handling advanced notions of mathematical analysis with a view towards their application in solving problems arising in Economic Theory and Econometrics.
Prerequisites	No formal prerequisites. Some familiarity with notions of real analysis is advised.
Course contents	The course is an introduction to notions of mathematical analysis appearing in the theory of metric spaces with applications in economic theory and/or econometrics. It examines topological notions like sequential convergence, or functional continuity, finitary notions like compactness, etc., and non-topological notions, like total boundedness, uniformities and completeness, as well as their interplay. It constructs an advanced vocabulary in mathematical analysis that among others, enables addressing issues of approximation of optimization problems, states and proves a variety of fixed point theorems. The latter are used in order to establish existence (and occasionally uniqueness and/or approximability) of solutions of general systems of equations. They are applied to problems appearing in dynamic optimization, game theory, etc.
Recommended reading	The following references are indicative. During the course this catalogue can be enriched with further readings. In any case the students are strongly advised to study the network of notions that are examined from as many available sources as possible. 1. Aliprantis Ch., and K.C. Border. <i>Infinite Dimensional Analysis</i> . Springer, 2005.

	 Ok Efe. Real Analysis with Economic Applications. Princeton University Press, 2007. Corbae D., Stinchcombe M, and J. Zeman. An Introduction to Mathematical Analysis for Economic Theory and Econometrics. Princeton U.P., 2009. O'Searcoid, M. Metric Spaces. Springer Science & Business Media, 2006. Sutherland, Wilson Alexander. Introduction to metric and topological spaces. Oxford University Press, 1975. Border, K. C. Fixed Point Theorems with Applications to Economics and Game Theory. Cambridge Books, 1990. Ambrosio, Luigi, and Paolo Tilli. Topics on analysis in metric spaces. Vol. 25. Oxford University Press on Demand, 2004. Subrahmanyam, P. V. Elementary Fixed Point Theorems. Springer, 2018.
Teaching methods	Lectures, Tutorials, Exercises
Assessment methods	Final Exam, Optional Exercises
Language of instruction	English



PART III: INFORMATION FOR THE STUDENTS

General Information for the students

Athens University of Economics and Business provides not only high-quality education but also high-quality student services. The adoption of the Presidential Decree 387/83 and Law 1404/83 defines the operation, organization and administration of Student Clubs at Universities, which aim at improving the living conditions of the students and enhance their social and intellectual wellbeing through engagement and socialization initiatives.

To fulfill this objective the University ensures the required infrastructure for housing, meals and sports activities through the operation of a student restaurant, reading rooms, library, organization of lectures, concerts, theatrical performances and excursions in Greece and abroad. Further in this context, the University supports the development of international student relations, organizes foreign language classes, computer/software literacy classes, and courses in modern Greek as a foreign language for foreign students and expatriated Greek students.

Meals

In the main building of the University there is a restaurant where all members of the university community can enjoy meals for free or by paying a minimum fee. Free meals are granted to those who meet special conditions (by contacting the Student Club).

Medical Services, Insurance / Healthcare

Undergraduate, postgraduate and PhD students at the University who have no other medical and hospital care are entitled to full medical and hospital care in the National Health System with coverage of the relevant costs by the National Health Service Provider. The doctor's office is located in the main

building and operates on some working days as announced. A psychiatric counseling service also operates at the University, staffed with a physician specializing in the treatment of mental health issues. More information can be found here https://www.aueb.gr/en/content/health-care.

Services/Facilities to Students with Special Needs

Athens University of Economics and Business ensures the facilitation of students with special needs for access to the university buildings through ramps, lifts and other equipment. There are also specific exam regulations for students with special needs.

In addition, the Library provides students with visual impairment with aids to access online the proposed reading lists of the courses taught at the University. In this context, the Association of Greek Academic Libraries has developed a multimodal electronic library called AMELIB. Entry to this service requires user authentication as well as username and password. More information can be found on the Library website https://www.aueb.gr/en/lib/content/users-additional-needs.

Student Financial Aid - Scholarships and Awards

Athens University of Economics and Business offers scholarships to undergraduate and graduate students in order to support them and to award and encourage excellence. The resources for these scholarships come from the Institution itself or from partnering organizations. More information about scholarships, according to the level of studies, can be found here https://www.aueb.gr/en/content/scholarships.

Library and Study Rooms

The Library & Information Center of the University was established in 1920 and operates on the first and second floor of the University's main building. The AUEB Library is a member of the Hellenic Academic Libraries Association (Heal-LINK), the European Documentation Centers Europe Direct and the Economic Libraries Cooperation Network (DIOB).

Three Documentation Centers operate within the Library:

- The European Documentation Center (KET) since 1992,
- The Organization for Economic Cooperation and Development (OECD) Documentation Center since 1997,
- The Delegation Center of the World Tourism Organization (WHO) hosting publications since 2004.

The Library contributes substantially both to meeting the needs for scientific information of the academic community and to supporting studying and research of students. This objective is achieved through the unified organization of collections and the coordination of the services provided. The Library provides access to:

- · Its printed collection of books and scientific journals,
- Course books used in classes,
- Its collection of electronic scientific journals
- Its collection of e-books
- Postgraduate theses and doctoral theses that are produced in Athens University of Economics and Business and deposited in digital form at the PYXIDA institutional repository
- Sectoral studies
- Statistical series by national and international organizations
- Audiovisual material
- Information material (encyclopedias, dictionaries)

- Collection of official government publications of the European Union, the OECD and the WCO
- Databases on the issues adopted by the University
- Printed collections of other academic libraries

The Library lends all its printed collections, except for magazines and statistical series, in accordance with its internal rules of operation. The Library and Information Center offers reading rooms, computer workstations for visitors, photocopiers and printing machines, and interlibrary loan of books and journal articles from other academic libraries that are members of its network. More information can be found here https://www.aueb.gr/en/library.

International Programmes and Information on International Student Mobility

Athens University of Economics and Business is actively involved in the Erasmus+ Program by promoting cooperation with universities, businesses and international organizations of the European Union (EU) as well as in the mobility of students, teaching and administrative staff. Within the framework of this Program, the University collaborates with more than 220 European Institutions on the subjects that its Departments encompass. It is worth mentioning that more than 7,000 students have participated in the "Erasmus" Program to date. Of these, approximately 4,000 AUEB students have attended courses at Associate Universities in Europe and about 3,000 foreign students who have completed a period of study at AUEB ensure accreditation through the Credit Transfer and Accumulation System (ECTS).

Finally, AUEB, adopting the internationalization and extroversion strategy, has been successfully participating in the International Credit Mobility Program with the aim of developing international collaborations in education and research with Partner Universities in countries outside the EU via: a) student mobility b) short-term teaching staff mobility and c) teaching / administrative staff training mobility. The Program was first implemented in the academic year 2015-2016, and since then a total of 52 students and staff members moved from and to 8 Partner Institutions in countries outside the EU (USA, Canada, Singapore, Russia, South Korea, Armenia). More information can be found in the here https://www.aueb.gr/en/content/erasmus-programme

Foreign Language Courses

Knowledge of foreign languages is a necessity in today's educational and professional context. The Student Club offers opportunities of attending foreign language classes. Classes are held in English, French, German, Spanish, Italian and Russian, and new language seminars are available upon request. More information can be found here https://www.aueb.gr/en/content/foreign-languages-university-student-club.

Connections with the Job Market and Entrepreneurship

DASTA AUEB is the University's Employment and Career Unit that plans, coordinates and implements actions related to:

- a) Entrepreneurship and innovation
- b) Connecting students and graduates with the labor market
- c) Connecting the academic community with businesses
- d) Offering internships, and
- e) Supporting dissemination of research output.

DASTA is structured in three units:

- a) the Internship and Career Unit, that focuses on supporting our students and graduates in their professional development. The Unit also offers consulting services to students and graduates regarding work and educational future.
- b) the ACEin Unit (Athens Center for Entrepreneurship and Innovation). Its goal is to support business ventures focused on implementing an innovative idea, develop a sustainable business effort or exploit the results of their research. At the same time, the Unit organizes actions that are part of a wider network between the Unit and the market in specific productive sectors.

More information can be found here https://www.aueb.gr/en/dasta

Athletic Activities

Students can participate in individual and team sports activities through the Department of Physical Education, which is staffed by University personnel, as well as a number of part-time instructors specialized in various sports. The University cooperates with the City of Athens Culture, Sports and Youth Organization and uses public and private sports facilities. More information can be found here https://www.aueb.gr/en/content/athletic-activities

Cultural Activities

To fulfill its purpose of providing a multidimensional study experience at AUEB, the Student Club organizes various cultural activities, such as theater, traditional dance, choir, photography, cinema, rhetorical club and Model Of United Nations (MUN). More information can be found here https://www.aueb.gr/en/content/cultural-activities

Student Organizations and Clubs

Various student organizations and clubs are active within the AUEB community, including AIESEC, Erasmus Club, Investment Club, Entrepreneurship Club ThinkBiz, and other. More information can be found here https://www.aueb.gr/en/content/student-clubs

Alumni Network

Adhering to a long tradition of educating future top executives in the economic, social and political life of the country, AUEB is proud of the fact that thousands of its graduates hold leading positions in companies, organizations, research institutes and universities in Greece and abroad. Understanding the importance of developing and strengthening the bond with its graduates, AUEB created its Alumni Network including a platform where all graduates of the University can register. The main goals of the Network are the connection of the graduates with their colleagues and former fellow students, and diffusion of information about activities, services and events in and around the University that concern them. More information can be found here https://alumni.aueb.gr/en

Volunteer Program

AUEB's Volunteer Program was launched in September 2017 and since then has brought more than 450 volunteers to for-impact organizations around Athens, implementing more than 50 volunteer activities. The aim of "AUEB Volunteers" is to give the chance to the members of university's community, i.e. students, faculty and administrative staff, to experience volunteering so as to highlight the value of participation and contribution to society and the university, as well as to sensitize more citizens about found crucial social issues. More information can here https://auebvolunteers.gr/english-intro/

Quality Assurance

Athens University of Economics & Business implements a quality assurance policy in order to continuously improve the quality of its educational programs, research activities and administrative services, and upgrade the academic and administrative processes and the University's overall operations. The Quality Assurance Unit (MODIP) coordinates and supports all related activities including the administration of the University-wide teaching and course evaluation process by students across all programs. More information can be found here https://aueb.gr/modip.

Education and Lifelong Learning Center

The Center for Education and Lifelong Learning (KEDIVIM / AUEB) ensures the coordination and interdisciplinary cooperation among all University entities in the development of continuous education programs, which complement and upgrade the skills and competences of the program participants. These programs build on participants earlier formal education, vocational training and professional experience. The aim is to facilitate job market integration, career and personal development. More information can be found here https://www.aueb.gr/en/content/kedivim-opa