

**ΟΙΚΟΝΟΜΙΚΟ  
ΠΑΝΕΠΙΣΤΗΜΙΟ  
ΑΘΗΝΩΝ**



ATHENS UNIVERSITY  
OF ECONOMICS  
AND BUSINESS

**SCHOOL OF ECONOMIC SCIENCES**

Department of Economics

Department of International & European Economic Studies

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

**Academic year 2023-24**

**ΣΧΟΛΗ  
ΟΙΚΟΝΟΜΙΚΩΝ  
ΕΠΙΣΤΗΜΩΝ**  
SCHOOL OF  
ECONOMIC  
SCIENCES

ΔΙΑΤΜΗΜΑΤΙΚΟ ΜΕΤΑΠΤΥΧΙΑΚΟ  
ΟΙΚΟΝΟΜΙΚΗ ΕΠΙΣΤΗΜΗ

MSc IN  
ECONOMICS

# 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@aub.gr](mailto:webmaster@aub.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:

#### **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

### **AUEB's OPERATIONAL 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 and Religious Affairs. Its governing bodies include:

The Governing Council

The Senate

The Rector

The Vice-Rectors  
The Executive Director

Until the Governing Council assumes its duties, administration is exercised by the University's Rector's Council.

## **AUEB's ACADEMIC STRUCTURE**

The Athens University of Economics and Business is structured by academic units of two (2) levels: a) the Schools, and b) the Departments

Each School is structured by at least two (2) Departments, covers a domain of related scientific areas, and ensures the interdisciplinary approach to teaching and research between its departments. The School is responsible for supervising and coordinating the operation of the Departments and the educational and research work produced, in accordance with the Internal Operating Regulations. Bodies of the School, according to Law 4957/2022 (A 141) as applicable, are: a) the Dean and b) the Dean's Council

The Department is the University's fundamental academic unit and aims to advance a specific field of science, technology, letters and arts through education and research. The Department consists of all the members of the Teaching & Research Staff (DEP), the members of the Special Education Staff (EEP), the members of the Laboratory Teaching Staff (EDIP) and the members of the Special Technical Laboratory Staff (ETEP).

Bodies of the Department, according to Law 4957/2022 (A 141) as applicable, are: a) the Assembly, b) the Board of Directors, c) the Head/Chair and d) the Deputy Head/Chair.

The Athens University of Economics and Business consists of three Schools & eight Departments:

### **1. SCHOOL OF ECONOMIC SCIENCES**

Department of International and European Economic Studies

Department of Economics.

### **2. SCHOOL OF BUSINESS**

Department of Management Science and Technology

Department of Business Administration

Department of Accounting and Finance

Department of Marketing and Communication.

### **3. SCHOOL OF INFORMATION SCIENCE AND TECHNOLOGY**

Department of Informatics

Department of Statistics

## **ADMINISTRATIVE BODIES OF POSTGRADUATE STUDY PROGRAMS**

Competent bodies for the organization and operation of the Postgraduate Study Programs are:

- a) the Senate,
- b) the Assembly of the Department,
- c) the Coordinating Committee (CC), and
- d) the Director of the Postgraduate Program.

Especially for inter-departmental, inter-institutional and joint programs, the responsibilities of the Department's Assembly are exercised by the Curriculum Committee.

## **UNIVERSITY STAFF**

The University staff consists of the following categories:

### **- TEACHING STAFF:**

- Teaching & Research Staff (DEP)
- Emeritus Professors
- Visiting Professors
- Special Education Staff (E.E.P.)
- Laboratory Teaching Staff (E.DI.P.)
- Special Technical Laboratory Staff (E.T.E.P.)
- Auxiliary Teaching Staff
- Teaching Fellows
- Scientific Faculty Members
- Adjunct Instructors
- Secondet Teachers

### **- ADMINISTRATIVE STAFF**

## **SERVICES**

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**

The 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 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 staff, the quality in teaching and research, the modern curriculum/courses, but also the high demand of its graduates significantly enhance the University's brand name and reputation, in Greece and abroad.

Detailed information on the study programs is provided in the study guides and departmental websites.

### **CHIEF REGULATIONS OF THE UNIVERSITY** **(INCLUDING ACADEMIC RECOGNITION PROCEDURES)**

The regulations include, for example:

- The University's Internal Operating Regulations
- The Organization of Administrative Services
- The Regulations for the Operation of Postgraduate and Doctoral Study Programs
- The Internal Regulation for conducting postdoctoral research

### **AUEB'S ECTS COORDINATOR**

The University's ECTS Coordinator is the Quality Assurance Chairperson, who ensures the University's compliance with the principles and rules of the European credit accumulation and transfer systems, supervises compliance and implementation and is responsible for the full recognition and transfer of credit units.

More information can be found on the University's website ( <a href="http://www.aueb.gr">http://www.aueb.gr</a> ).
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# PART II: INFORMATION ABOUT THE MASTER OF SCIENCE (MSc) IN ECONOMICS

## **SCHOOL OF ECONOMIC SCIENCES**

Dean: Professor Thomas Moutos

## **DEPARTMENT OF ECONOMICS**

Chair: Professor Evangelos Vasilatos

## **DEPARTMENT OF INTERNATIONAL & EUROPEAN ECONOMIC STUDIES**

Chair: Professor George Economides

## **MASTER'S PROGRAM IN ECONOMICS**

Director: Associate Professor Elias Tzavalis

### **Contact details**

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

Telephone number: +30 210 8203617

Email: [post.econ@aueb.gr](mailto:post.econ@aueb.gr)

Website: <https://www.dept.aueb.gr/en/gradecon>

## **ACADEMIC CALENDAR**

**Fall semester teaching:** 2 October 2023 - 12 January 2024

**Christmas holidays:** 23 December 2023 - 6 January 2024

**Fall semester exams:** 22 January 2023 -2 February 2024

**Spring semester teaching:** 5 February 2024 - 17 May 2024

**Easter holidays:** 27 April 2024 -10 May 2024

**Spring semester exams:** 27 May 2024 - 14 June 2024

## **NATIONAL/UNIVERSITY HOLIDAYS**

Saturday, October 28, 2023, The Anniversary of the "No"

Friday, November 17, 2023, The Anniversary of Polytechnio

Saturday, January 6, 2024, Epiphany

Monday, March 18, 2024, Clean Monday

Monday, March 25, 2024, Greek Independence Day

Wednesday, May 1, 2024, Labour's Day

Monday, June 24, 2024, 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 evolution 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, as well as Econometrics.

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)

The call for applications is announced on the Program's website in February each year. Applications are submitted online from February 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, Mannheim, Stockholm etc.

## LANGUAGE OF INSTRUCTION/EXAMINATION

The language of instruction and exams is English.

## TUITION FEES / SCHOLARSHIPS

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.

The Program, in collaboration with Eurobank, grants **3 scholarships** of a total amount of €5,000, per admission series, to an equal number of students of the MSc program, who cumulatively meet the following conditions:

- a)** have succeeded in all first and second semester courses in the regular exam period
- b)** have an average score, in total in the first and second semester courses, greater than or equal to 7.5 (seven and a half)
- c)** have paid all the tuition fees of the program

The amount of the scholarship will be distributed as follows:

€2,500 to the first ranked student.

€1,600 to the second ranked student.

€900 to the third ranked student.

In the event of two or more students have the same average score or in the event that the beneficiary



students are less than three, the scholarship amount will be redistributed to the beneficiary(ies) in a proportional manner.

In addition, according to law 4957/21-7-2022, students who are Greek citizens and meet specific conditions (first degree grade equal or higher than 7,5 and also specific financial criteria) are entitled to request an exemption from tuition fees.

### **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 3<sup>rd</sup> semester or to attend 6 advanced courses during 3<sup>rd</sup> and 4<sup>th</sup> semester.

### **FINAL EXAMINATION**

Fall semester final exams occur in late January until early February and spring semester final exams occur in late May until mid June. Resit exams take place in the first half of September.

### **EXAMINATION AND ASSESSMENT REGULATIONS**

Assessment of students is done by exams, assignments or a combination of these. The determination of the way and the process of students' assessment in a course is the sole responsibility of the instructor of the course.

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. If a student skips an exam, he/she fails the exam. In case of non-participation in an exam due to illness, the student should inform the secretariat as soon as possible. If he/she presents, within two (2) days from the date of the exam, a medical certificate, he/she may be examined at a later date within the current examination period, provided that the professor of the course agrees.

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. The grading scale for the exams in the resit exam period (in September) is set from zero (0) to five (5).

Retaking a course that has already been successfully graded is not permitted in order for the student to improve his grade. Correction of a grade, after it has been announced by the Secretariat, is allowed, if there has been a justified detour or a cumulative error, following a written request of the teacher and a decision of the Programme's Committee.

Each student may fail up to two (2) courses throughout their studies at the programme. He/she has the right to be re-examined in these courses only once and the re-examination takes place in the repeat examination period of September of the academic year in which the said courses are taught. Failure in more than two (2) courses cumulatively (in all semesters) or failure in the repeat examination period means failure to complete the Program and results in the end of studies.

## **INTERNSHIP**

The Programme does not provide the possibility of internship.

## **PERSONAL TUTOR (STUDIES ADVISOR)**

The Personal Tutor is the point of contact for students in matters related to their academic progress, their participation in the academic community and their professional development and has the following responsibilities:

- Provides consultation and clarifications regarding the programme, the courses offered, their content and requirements.
- Provides counseling and guidance in choosing a thesis topic.
- Provides counseling and suggests solutions, where possible, in case of learning and course attendance difficulties.
- Encourages students to make use of the infrastructure and services offered, such as the Laboratories, the Library, etc.
- Provides advice and guidance on the possibility of doing internships and mobility through the Erasmus+ Program and other programs.
- Advises and directs in matters of studies and professional development possibilities after the end of the programme.
- Encourages students to participate in the academic community and the activities organized within it (e.g. attending conferences and workshops, volunteering, etc.)
- Provides support in case that problems (e.g. personal, academic, learning difficulties) create obstacles and difficulties in students' studies and performance by giving advice on how to deal with them and/or by referring them to the appropriate services of AUEB (e.g. mental health service, doctor's office).

The Programme's Committee assigns a Personal Tutor to each student at the beginning of their studies for the whole duration of their studies in the programme.

## **STUDENTS MOBILITY**

Students of the Program have the possibility to seek mobility opportunities within the Erasmus and Erasmus+ programs in which the university participates (<https://www.aueb.gr/el/erasmus>).

## COURSE STRUCTURE DIAGRAM WITH CREDITS

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

**\*2<sup>nd</sup> 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  
 Large data and Statistical Learning

**\*\* 3<sup>rd</sup> and 4<sup>th</sup> 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

## B) DESCRIPTION OF INDIVIDUAL COURSE UNITS

Course title	<b>PREPARATORY IN STATISTICS FOR ECONOMISTS</b>
Course code	m11201f
Type of course	Non compulsory
Level of course	Master's
Year of study	1st
Semester	1 <sup>st</sup> (preparatory stage)
Number of credits allocated	0
Instructor	<b>Angelos Alexopoulos</b> , Assistant Professor, Department of Economics, AUEB
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. Matrices and operations, determinants, kronecker product, trace and rank, diagonalisation, quadratic forms, calculus and matrix algebra. 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.
Recommended reading	M.H. DeGroot (1986): Probability and Statistics, 2nd ed., Addison Wesley (ch1-8) Johnston, J. and J. DiNardo (1997): Econometric Methods, 4th ed, McGraw-Hill. (app A, B) W.H. Greene (2012): Econometric Analysis, 7th ed, Prentice Hall. (app A, B, C, D) S. Gilbert, Linear algebra and its applications. J. H. Stock and M. W. Watson, Introduction to Econometrics, Part One.
Teaching methods	Lectures and exercises
Assessment methods	Without grading
Language of instruction	English

Course title	<b>PREPARATORY IN MATHEMATICS FOR ECONOMISTS</b>
Course code	m11202f
Type of course	Non compulsory
Level of course	Master's
Year of study	1st
Semester	1 <sup>st</sup> (preparatory stage)
Number of credits allocated	0
Instructor	<b>Efthymios Athanasiou</b> , Assistant Professor, Department of Economics, AUEB
Objective of the course (preferably expressed in terms of learning outcomes and competences)	The goal 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 quasi-concave 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 $R^n$ , 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. Michael Carter : Foundations of Mathematical Economics, MIT Press 2. Simon and Blume : Mathematics for Economists 3. Takayama: Sanalytical Methods in Economics 4. de la Fuente: Mathematical Methods and Models for Economists
Teaching methods	Lectures/exercises
Assessment methods	exercises
Language of instruction	English

Course title	<b>MICROECONOMIC THEORY</b>
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
Instructor	<b>Efthymios Athanasiou</b> , Assistant Professor, Department of Economics, AUEB
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<i>knowledge</i> Upon completion of the course, students will know some of the basic concepts of scalar and vector optimization, competitive equilibrium, and welfare economics, and their importance for economics. <i>Skills</i> 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. <i>Abilities</i> 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	<u>Producer Theory:</u> Production Sets, production functions, profit maximization Testable implications of producer theory (WARP) Properties of indirect profit/net supply functions 2 Representative producers. <u>Consumer theory:</u> Preferences, utility functions, utility maximization. Testable implications of consumer theory (WARP) Properties of indirect utility functions Properties of individual excess demand functions (H-W) Positive and normative representative consumers. <u>Competitive equilibrium:</u> Definition: computational examples, competitive equilibrium with taxes and lump-sum transfers Special cases: (1x1x2 economy, 2x2x2 economy, exchange economy, small open

	<p>economy, economies of Leontief and von Neumann).  Existence: large non-convexities relative to market size, non-interior endowments.  <u>Welfare analysis:</u>  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.  <u>Social Choice Theory</u>  The social welfare function, Arrow Impossibility Theorem</p>
Recommended reading	<ol style="list-style-type: none"> <li>1. Andreu Mas-Colell, Michael D. Whinston and Jerry R. Green: Microeconomic Theory</li> <li>2. Hal R. Varian: Microeconomic Analysis.</li> <li>3. David M. Kreps: Microeconomic Foundations I. Choice and Competitive Markets</li> <li>4. Geoffrey A. Jehle and Philip J. Reny: Advanced Microeconomic Theory</li> </ol>
Teaching methods	Lectures/exercises
Assessment methods	Written examinations
Language of instruction	English

Course title	<b>MACROECONOMIC THEORY</b>
Course code	m11105f
Type of course	compulsory
Level of course	Master's
Year of study	1st
Semester	1 <sup>st</sup> (fall)
Number of credits allocated	7,5
Instructor	<b>Ioannis Kospentaris</b> , Assistant Professor, Department of Economics, AUEB
Objective of the course (preferably expressed in terms of learning outcomes and competences)	The main goal of the class is to introduce you to modern macroeconomics: the study of macroeconomic phenomena with aggregate <u>microfounded</u> equilibrium models that are often dynamic. The focus of the course is on models and techniques necessary to understand the modern macroeconomic literature.
Prerequisites	It assumes some familiarity with undergraduate macroeconomics and basic techniques of mathematics for economists.
Course contents	<p>We focus on models of economic growth, aggregate fluctuations, and unemployment.</p> <p>The course covers the following topics:</p> <ol style="list-style-type: none"> <li>1. Models of exogenous and endogenous growth.</li> <li>2. Stochastic Growth and Applications.</li> <li>3. Search Models of Unemployment.</li> </ol>
Recommended reading	Lars <u>Ljungqvist</u> and Thomas Sargent, "Recursive Macroeconomic Theory" (3rd edition, MIT Press).
Teaching methods	Lectures and exercises
Assessment methods	Midterm and final exams and class assignments.
Language of instruction	English

Course title	<b>ECONOMETRICS</b>
Course code	m11106f
Type of course	Compulsory
Level of course	Master's
Year of study	1st
Semester	1 <sup>st</sup> (fall)
Number of credits allocated	7,5
Instructors	<b>Ioannis Biliadis</b> , Professor, Department of International & European Economic Studies, AUEB <b>Angelos Alexopoulos</b> , Assistant Professor, Department of Economics, AUEB
Objective of the course (preferably expressed in terms of learning outcomes and competences)	The goal of this course is to equip students with rigorous econometric background that will allow the attendance of econometric topics in subsequent courses, the study of empirical papers from various fields in economics, and the use of computing.
Prerequisites	Knowledge of statistics and linear algebra at undergraduate level
Course contents	<b>Part A:</b> The course is a coverage of the linear regression model at an advanced level. It covers properties of OLS estimation and hypothesis testing at small and large samples by relaxing the normality assumption. The course proceeds with Generalized Least Squares to deal with cases of violation of classical assumptions. To deal with issues of endogeneity, instrumental variables (IV) and generalized method of moments (GMM) estimation methodologies are studied thoroughly. A brief mention of nonlinear regression model and their estimation via Maximum Likelihood concludes this part.  <b>Part B:</b> In the second part of the course, we make an introduction to Bayesian econometrics. We start by discussing Bayesian estimation, we present the Bayes theorem as well as the notions of the prior, posterior distribution and marginal likelihood. Then, we present Bayesian estimation of the Gaussian model and of the linear regression model. Finally, we make an introduction to the theory of Markov chains and we present Markov chain Monte Carlo methods.
Recommended reading	1. W.H. Greene (2012): Econometric Analysis, 7th ed, Prentice Hall. 2. F. Hayashi (2000): Econometrics, Princeton UP 3. Davidson J., Econometric Theory, Blackwell, 2000. 4. J. Johnston and J. DiNardo (1997): Econometric Methods, 4th ed, McGraw-Hill. 5. Gourieroux C., Monfort A., Statistics and Econometric Models, CUP, 1995. 6. Gary Koop (2003) Bayesian Econometrics, Wiley 7. Gelman et al. (2013), Bayesian Data Analysis, Chapman and Hall/CRC
Teaching methods	Lectures and labs in R
Assessment methods	Midterm exam, Homeworks, Final exam, project.
Language of instruction	English

Course title	<b>MATHEMATICS FOR ECONOMISTS</b>
Course code	m11107f
Type of course	compulsory
Level of course	Master's
Year of study	1st
Semester	1 <sup>st</sup> (fall)
Number of credits allocated	7,5
Instructor	<b>Vangelis Vassilatou</b> , Professor, Department of Economics, AUEB

Objective of the course (preferably expressed in terms of learning outcomes and competences)	This course is an introduction to commonly used dynamic optimization methods in economics. The emphasis is on solution methods rather than rigorous proofs. After completing the course, students will be able to compile the knowledge they 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.
Teaching methods	Lectures and tutorials
Assessment methods	Final exam / Assignments (10% bonus on the final exam grade if all submitted)
Language of instruction	English

Course title	<b>MICROECONOMIC THEORY &amp; POLICY</b>
Course code	m11108f
Type of course	compulsory
Level of course	Master's
Year of study	1st
Semester	2 <sup>nd</sup> (spring)
Number of credits allocated	6
Instructor	<b>Nikolaos Vettas</b> , Professor, Department of Economics, AUEB
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	1. Market structure and welfare. From perfect competition to monopoly and between. Optimal pricing, elasticity, and monopoly distortion.



	<ol style="list-style-type: none"> <li>2. Basic concepts in game theory. Introduction to the economics of strategic behavior. Static games of complete information and the strategic (normal) form representation.</li> <li>3. Dynamic games of complete information and the extensive form representation Subgame Perfection.</li> <li>4. Leading applications of game theory: Oligopoly theory and Bargaining</li> <li>5. Repeated games and the folk theorem; trigger strategies and collusion.</li> <li>6. Introduction to the economics of information. Risk, uncertainty and von Neumann-Morgenstern expected utility. Adverse selection and moral hazard.</li> <li>7. Static games of incomplete information. Bayes-Nash equilibrium. Revelation principle. Screening and Hidden Information. Auctions</li> <li>8. Dynamic games of incomplete information. Sequential, Perfect Bayesian equilibrium Signaling</li> <li>9. Moral Hazard. Hidden Action and Principal-agent models Managerial Incentives</li> </ol>
Recommended reading	<p><u>Main texts:</u>  A.Mas-Colell, M.Whinston and J.Green, <i>Microeconomic Theory</i>, Oxford, 1995  R.Gibbons, <i>A Primer in Game Theory</i>, Harvester Wheatsheaf, 1992  S. Bikhchandani, J. Hirshleifer and J. G. Riley, <i>The Analytics of Uncertainty and Information</i>, Cambridge, 2013</p> <p><u>Additional:</u>  D.Kreps: <i>A Course in Microeconomic Theory</i>, Princeton, 1990  D.Fudenberg, and J.Tirole, <i>Game Theory</i>, MIT Press, 1991</p>
Teaching methods	Lectures and problem sets
Assessment methods	Problem sets, midterm and final exam
Language of instruction	English

Course title	<b>MACROECONOMIC THEORY &amp; POLICY</b>
Course code	m11109f
Type of course	compulsory
Level of course	Master's
Year of study	1st
Semester	2 <sup>nd</sup> (spring)
Number of credits allocated	6
Instructors	<p><b>Sarantis Kalyvitis</b>, Professor, Department of International &amp; European Economic Studies, AUEB</p> <p><b>George Economides</b>, Professor, Department of International &amp; European Economic Studies, AUEB</p> <p><b>Evangelos Vassilatos</b>, Professor, Department of Economics, AUEB</p>
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 modern macroeconomic policy with emphasis on 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: macroeconomic models of closed and open economies, implications for the conduct of monetary and fiscal policy in models with market and policy failures.
Recommended reading	<p>Acemoglu (2009): <i>Introduction to Modern Economic Growth</i>. Princeton.</p> <p>Aghion P. and P. Howitt (2009): <i>The Economics of Growth</i>. MIT Press.</p> <p>Alogoskoufis G. (2019): <i>Dynamic Macroeconomics</i>. MIT Press.</p>

	Barro R. and X. Sala-i-Martin (2003): <i>Economic Growth</i> . 2 <sup>nd</sup> edition. McGraw Hill. Blanchard O. and S. Fischer (1989): <i>Lectures on Macroeconomics</i> . MIT Press. Drazen A. (2000): <i>Political Economy in Macroeconomics</i> . Princeton University Press. Sargent T. (1987a): <i>Macroeconomic Theory</i> . Academic Press. Sargent T. (1987b): <i>Dynamic Macroeconomic Theory</i> . Harvard University Press. Turnovsky S. (2000): <i>Methods of Macroeconomic Dynamics</i> . 2 <sup>nd</sup> edition. MIT Press. Végh C.A. (2013): <i>Open Economy Macroeconomics in Developing Countries</i> . MIT Press. Wickens M. (2008): <i>Macroeconomic Theory</i> . Princeton.
Teaching methods	Lectures and tutorials
Assessment methods	Final exam (80%) and a project (20%).
Language of instruction	English

Course title	<b>DATA ANALYSIS, APPLIED ECONOMETRICS AND COMPUTATIONAL METHODS</b>
Course code	m11110f
Type of course	compulsory
Level of course	Master's
Year of study	1st
Semester	2 <sup>nd</sup> (spring)
Number of credits allocated	6
Instructors	<b>Elias Tzavalis</b> , Professor, Department of Economics, AUEB <b>Ioannis Dendramis</b> , Associate Professor, Department of Economics, AUEB
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 <u>Part B</u> : 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, <a href="#">Econometrics.pdf (wisc.edu)</a> 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	<b>INDUSTRIAL ORGANIZATION</b>
Course code	m11211f
Type of course	Elective
Level of course	Master's
Year of study	1st
Semester	2 <sup>nd</sup> (spring)

Number of credits allocated	6
Name of lecturer	<b>Eleftherios Zacharias</b> , Assistant Professor, Department of Economics, AUEB <b>Fabio Antoniou</b> , Assistant Professor, Department of Economics, AUEB
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	1. Tirole, J. (1988) The Theory of Industrial Organization, MIT press 2. Laffont, J.J & Martimort, D. (2002), The Theory of Incentives: The Principal-Agent Model, Princeton University Press. 3. Vives, Xavier, Oligopoly Pricing: Old Ideas and New Tools, MIT Press, 1999. 4. 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	<b>PUBLIC FINANCE</b>
Course code	m11214f
Type of course	elective
Level of course	Master's
Year of study	1st
Semester	2 <sup>nd</sup> (spring)
Number of credits allocated	6
Instructor	<b>Pantelis Kammis</b> , Assistant Professor, Department of International & European Economic Studies, AUEB
Objective of the course (preferably expressed in terms of learning outcomes and competences)	By the end of the course, students will be able to: (1) answer what determines the size of government redistributive programs (2) analyze the relationship between economic theory (theoretical models) and empirical findings and (3) 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	<ul style="list-style-type: none"> <li>• Acemoglu, A. Political Economy Lectures Notes <a href="https://economics.mit.edu/files/8753">https://economics.mit.edu/files/8753</a></li> <li>• Atkinson, A. and Stiglitz, J. (2015). Lectures in Public Economics New York, NY: McGraw Hill.</li> <li>• Hindriks, J. and Myles, G. (2013). Intermediate Public Economics. The MIT Press.</li> <li>• McCarty N., Meirowitz, A. (2007). Political Game Theory: An Introduction. Cambridge University Press.</li> <li>• Persson, T. and Tabellini, G. (2002) Political Economics: Explaining Economic Policy. The MIT Press.</li> </ul>
Teaching methods	Lectures
Assessment methods	Final Exams 50% and Written assignments/ Oral Presentations 50% of the final score.
Language of instruction	English

Course title	<b>MATHEMATICAL ECONOMICS</b>
Course code	m11216f
Type of course	elective
Level of course	Master's
Year of study	1st
Semester	2 <sup>nd</sup> (spring)
Number of credits allocated	6
Name of lecturer	<b>Stylianos Arvanitis</b> , Professor, Department of Economics, AUEB <b>Spyridon Vasilakis</b> , Professor, Department of International & European Economic Studies, AUEB
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	<p>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.</p> <ol style="list-style-type: none"> <li>1. Aliprantis Ch., and K.C. Border. Infinite Dimensional Analysis. Springer, 2005.</li> <li>2. Ok Efe. Real Analysis with Economic Applications. Princeton University Press, 2007.</li> <li>3. Corbae D., Stinchcombe M, and J. Zeman. An Introduction to Mathematical Analysis for Economic Theory and Econometrics. Princeton U.P., 2009.</li> <li>4. O'Searcoid, M. Metric Spaces. Springer Science &amp; Business Media, 2006.</li> <li>5. Sutherland, Wilson Alexander. Introduction to metric and topological spaces. Oxford University Press, 1975.</li> <li>6. Border, K. C. Fixed Point Theorems with Applications to Economics and Game Theory. Cambridge Books, 1990.</li> <li>7. Ambrosio, Luigi, and Paolo Tilli. Topics on analysis in metric spaces. Vol. 25. Oxford</li> </ol>

	University Press on Demand, 2004. 8. Subrahmanyam, P. V. Elementary Fixed Point Theorems. Springer, 2018.
Teaching methods	Lectures, Tutorials, Exercises
Assessment methods	Final Exam, Optional Exercises
Language of instruction	English

Course title	<b>QUANTITATIVE METHODS IN FINANCE</b>
Course code	m11213f
Type of course	elective
Level of course	Master's
Year of study	1st
Semester	2 <sup>nd</sup> (spring)
Number of credits allocated	6
Name of lecturer	<b>Panagiotis Konstantinou</b> , Assistant Professor, Department of International & European Economic Studies, AUEB <b>Antonios Demos</b> , Professor, Department of International & European Economic Studies, AUEB
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 • apply basic programming skills to analyze the data and arrive at conclusions.
Prerequisites	Econometrics
Course contents	<ul style="list-style-type: none"> <li>• Time Series Concepts <ul style="list-style-type: none"> <li>○ Stationarity and Ergodicity and Applications</li> <li>○ Estimation of Long-Run Variances</li> </ul> </li> <li>• AR, MA, ARMA Models <ul style="list-style-type: none"> <li>○ Efficient Market Hypothesis and Random Walks</li> <li>○ Stationarity and Invertibility</li> <li>○ Forecasting and Forecast Evaluation</li> </ul> </li> <li>• Modelling Uncertainty: ARCH/GARCH and Stochastic Volatility Models</li> <li>• Stationary and Non-Stationary Time Series: Trend-Cycle Decomposition</li> <li>• VAR Models</li> <li>• Cointegration</li> <li>• Structural VAR Models and Causal Inference</li> </ul>
Recommended reading	Demow, A. (2019) <i>Financial Econometrics</i> , AUEB Publications (in Greek) Angrist, J. D. and J.-S. Pischke (2009) <i>Mostly Harmless Econometrics: An Empiricist's Companion</i> , Princeton University Press 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
Teaching methods	<ul style="list-style-type: none"> <li>• Face to face Lectures</li> <li>• Seminar: Case-Study Analysis</li> <li>• Empirical Analyses using R</li> </ul>
Assessment methods	<ul style="list-style-type: none"> <li>• Assignments (50%)</li> <li>• Written Examination (50%)</li> </ul>
Language of instruction	English

Course title	<b>LARGE DATA AND STATISTICAL LEARNING</b>
Course code	m11219f
Type of course	elective
Level of course	Master's
Year of study	1st
Semester	2 <sup>nd</sup> (spring)
Number of credits allocated	6
Instructor	<b>Fotis Papailias</b> , Senior Lecturer, King's Business School
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<p>After successful completion of this course the students must have a good understanding of:</p> <ul style="list-style-type: none"> <li>• computational inference,</li> <li>• time series forecasting,</li> <li>• data features (seasonalities, nonstationarities, etc.),</li> <li>• how machine learning methods work (supervised and unsupervised machine learning).</li> </ul> <p>Furthermore, students are expected to obtain the necessary skills to be able to:</p> <ul style="list-style-type: none"> <li>• use scientific software and develop codes independently,</li> <li>• collect, handle and organise large panels of data,</li> <li>• visualise data and extract features,</li> <li>• apply machine learning techniques in practice and interpret the output in economic and finance applications.</li> </ul>
Prerequisites	None formal pre-requisite, a basic level of maths/stats and econometrics is required.
Course contents	<p>This course is designed to introduce students to the concepts of large data handling and analysis with machine learning techniques. We start with computational analysis and inference and discuss the Monte Carlo, Bootstrap, k-fold cross-validation and recursive and rolling estimation methodologies. We provide a solid basis for time-series forecasting based on predictive linear regressions as well as using the Kalman Smoother. Next, we discuss large data handling techniques and discuss its features (seasonalities, nonstationarities). We discuss how unsupervised machine learning methodologies (k-means clustering, principal component analysis and dynamic factor analysis) could be applied in economics and finance forecasting applications (including the construction of Financial Conditions Indexes and Uncertainty Indicators). Next, we introduce the penalised regression methodologies of ridge, lasso and elastic net. We extend our discussion to unbalanced datasets and use bridge equations, MIDAS and U-MIDAS models as suggested remedies. Finally, our special topics include adaptive learning and modelling and applications of machine learning in portfolio selection.</p> <p>On top of our theory discussions, the course has a "hands-on" approach where all these methods applied in real data using the R Project for Statistical Analysis as the main scientific software.</p>
Recommended reading	<p>Main reading: supplied material.</p> <p>Supplementary readings include:</p> <ul style="list-style-type: none"> <li>• James, G., Witten, D., Hastie, T., Tibshirani, T. (2013). An Introduction to Statistical Learning with Applications in R. Springer, New York.</li> </ul>

	<ul style="list-style-type: none"> <li>Hyndman, R.J., Athanasopoulos, G. (2019). Forecasting: Principles and Practice, 3rd Edition, OTexts: Melbourne, Australia.</li> <li>Sheppard, K. (2020). Financial Econometrics Notes. University of Oxford.</li> </ul> <p>And various academic papers discussed throughout the module.</p>
Teaching methods	<ul style="list-style-type: none"> <li>Weekly lectures (theory &amp; hands-on),</li> <li>Weekly tutorials (theory &amp; hands-on)</li> <li>Learning-by-doing approach.</li> </ul>
Assessment methods	<p>Weights in squared brackets.</p> <ul style="list-style-type: none"> <li>[10%] Weekly Assignments,</li> <li>[30%] Project 1 (essay and code),</li> <li>[30%] Project 2 (essay and code),</li> <li>[30%] Final Exam.</li> </ul>
Language of instruction	English



## PART III: INFORMATION FOR STUDENTS

### General Information for students

The 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.

Detailed information on meals, housing, fitness, foreign languages, cultural activities, scholarships, financial aid, is provided on the website of AUEB's Student Club at <https://lesxi.aueb.gr/>

## **Electronic Services**

A significant number of procedures related to both attendance and student care are carried out electronically through applications of the University or the Ministry of Education and Religious Affairs. All applications are accessible with the same codes (username & password).

### **• E-mail account:**

Detailed instructions for using the Webmail Service are provided at <https://www.aueb.gr/el/content/webmail-manual>

### **• Electronic Secretariat (Student Register)**

The [Electronic Secretariat](#) application is the information system through which students can be served by the Department's Secretariat via the web.

### **• Wireless network**

Using their personal codes, students have access to a wireless network in all areas of the Athens University of Economics and Business buildings/campus. <https://www.aueb.gr/en/content/wi-fi-connection>

### **• E-Learning Platform – ECLASS**

The Open eClass platform is an integrated Electronic Course Management System and is the proposal of the Academic Internet (GUnet) to support Asynchronous Distance Education Services. Instructions are provided at <https://eclass.aueb.gr/info/manual.php>

## **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 at <https://www.aueb.gr/en/content/health-care>.

## **Services/Facilities to Students with Special Needs**

The Athens University of Economics and Business ensures the facilitation of students with special needs, through the design, implementation, and environmental adaptations, for access to the university building facilities. In the main building there are specially configured lifting machines, ramps, and elevators. There are also special regulations for conducting exams for students with special needs.

The Athens University of Economics and Business has established a Committee for Equal Access for people with disabilities and people with special educational needs. The Commission is an advisory body and submits recommendations to the competent bodies for the formulation and implementation of the policy of equal access for persons with disabilities and persons with special educational needs.

Through the Library services, students with physical disabilities are granted electronic access to the recommended Greek bibliography of the courses taught at the University. In this context, the



Association of Greek Academic Libraries (SEAB) has developed a multimodal electronic library called AMELib.

More information is available at <https://www.aueb.gr/en/lib/content/users-additional-needs>.

### **Library and Study Rooms**

The Library & Information Center of the University operates at 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 (DIOBI).

Three Documentation Centers operate within the library:

- The European Documentation Center
- The Organization for Economic Cooperation and Development (OECD) Documentation Center
- The Delegation Center of the World Tourism Organization (WHO)

The library contributes substantially both to meeting the needs for scientific information of the academic community and to supporting studying and research. The library provides access to:

- printed collection of books and scientific journals,
- course books used in modules,
- collection of electronic scientific journals& 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)
- databases on the topics used 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 at <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 since 1987 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.

In addition, strengthening its internationalization objectives, it creates new opportunities through the Erasmus+ International Mobility Program. Within this framework, mobility scholarships are granted through the State Scholarships Foundation (SSF) to incoming and outgoing students of the three study cycles, according to the funding approved each year by the State Scholarship Foundation for the University. Outgoing students have the possibility to spend a period of study at a

Partner Institution outside the EU with full academic recognition through the application of the ECTS credits system. More information can be found at <https://www.aueb.gr/en/erasmus>

### **Connections with the Job Market and Entrepreneurship**

DASTA AUEB (<https://www.aueb.gr/en/dasta>) is the administrative unit of the University that plans, coordinates and implements the actions of the Athens University of Economics and Business in the following areas:

- a) development of entrepreneurship and innovation
- b) connecting students and graduates with the labor market
- c) connecting the academic community with businesses
- d) student internship programs and,
- e) supporting research utilization actions

### **Student Associations**

Various student clubs and associations are active within the community of the Athens University of Economics and Business (<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 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 <https://alumni.aueb.gr> where all graduates of the University can register. The main objectives 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 at <https://alumni.aueb.gr/en>

### **Volunteer Program**

Within the framework of its strategies, the "AUEB Volunteers" Volunteering Program was launched in September 2017. The aim of the Program is to highlight important social issues and the value of participation and practical contribution, but also to raise community awareness regarding the 17 UN Sustainable Development Goals. Actions are developed around two pillars: (a) actions addressed to AUEB's Community, which have as their main objective the maintenance of the quality of the University's infrastructure based on their aesthetics and functionality, and (b) actions addressed to Greek society. More information can be found at <https://auebvolunteers.gr/english-intro/>

### **Quality Assurance**

The Athens University of Economics & Business implements a quality assurance policy to continuously improve the quality of its study programs, research activities and administrative

services, and upgrade the academic and administrative processes and the University's operations. The Quality Assurance Unit (MODIP) operating at AUEB coordinates and supports evaluation processes. Particularly the quality assurance of the educational process is achieved using the module/teaching evaluation questionnaire completed by AUEB students. More information can be found at <https://aueb.gr/modip>.

### **Training and Lifelong Learning Center**

The Center for Training and Lifelong Learning (**KEDIVIM**) is an AUEB unit which ensures the coordination and interdisciplinary cooperation in the development of training programs, continuing education, training and in general lifelong learning, which complement, modernize and/or upgrade knowledge, competences, and skills, acquired from formal education, vocational education and initial vocational training systems or from work experience, facilitating integration or reintegration in the labor market, job security and professional and personal development. More information can be found at <https://www.aueb.gr/en/content/kedivim-opa>.