ΟΙΚΟΝΟΜΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ

ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS

# ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS

**POSTGRADUATE PROSPECTUS FOR THE MASTER'S PROGRAMME IN**

**Business Economics with Analytics**

**Department of Economics**
**School of Economic Sciences**

**Director:** Professor E. Tzavalis

**ATHENS, DECEMBER 2021**

## PART I: INFORMATION ABOUT THE INSTITUTION

### CONTACT DETAILS (Name & Address)

ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS (AUEB)

Address:76, Patission Str. GR-10434, 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

**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

**School of Economic Sciences**
**Dean:** Associate Professor Anastasia Miaouli
**Department of Economics**
Chair: Professor George Alogoskoufis
**Master's Program in Business Economics with Analytics**
Director Professor Elias Tzavalis
**Contact details**
Address: 47A Evelpidon Str. & 33 Lefkados Str., Athens, GR 11362
9th floor, Office No: 909
Telephone number: (+30) 210 8203649
Email: business.econ@aueb.gr
Website: **www.dept.aueb.gr/business-economics**

**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.

## LIST OF DEGREE PROGRAMMES

Athens University of Economics and Business offers the following Degrees and streams:

| A/A | DEPARTMENTS | SPECIALIZATIONS |
|---|---|---|
| 1. | International and European Economic Studies | 1. International Economics and Finance<br>2. International and European Political Economy |
| 2. | Economics | 1. Economic Theory and Policy<br>2. Business Economics and Finance<br>3. International and European Economics |
| 3. | Management Science and Technology | 1. Operations Research and Business Analytics<br>2. Operations and Supply Chain Management<br>3. Software and Data Analysis Technologies<br>4. Information Systems and Electronic Business<br>5. Strategy, Entrepreneurship and Human Resources |
| 4. | Business Administration | 1. Business Administration<br>2. Information Systems Management<br>3. Accounting and Financial Management<br>4. Marketing |
| 5. | Accounting and Finance | 1. Accounting<br>2. Finance |
| 6. | Marketing and Communication | 1. International Management, Innovation and Entrepreneurship<br>2. Human Resource Management<br>3. Business Analytics<br>4. Digital Marketing |
| 7. | Informatics | 1. Theoretical Computer Science<br>2. Computer Systems and Networks<br>3. Information Systems and Information Security<br>4. Databases and Knowledge Management<br>5. Operational Research and Economics of Information Technology<br>6. Computational Mathematics and Scientific Calculations |
| 8. | Statistics | No specializations are offered |

Detailed information about programs and curriculum is provided in each department's study guide and website.

## ADMISSION/REGISTRATION PROCEDURE

Admission for undergraduate students to each department is accomplished through central University entrance exams (Pan-Hellenic examinations). The registration of the successful candidates of these exams, in the Schools and Departments of the University takes place in September on the platform of mandatory electronic registration, according to the guidelines of the Ministry of Education, Research and Religious Affairs.

## MAIN UNIVERSITY REGULATIONS

The regulations include:

- The Internal Regulations for the Operation of the Institution
- The Organization of Administrative Services
- The Regulations for the Operation of Postgraduate and PhD Programs
- The Internal Regulation for postdoctoral research
- The Exam Guide

## ECTS COORDINATOR OF THE UNIVERSITY

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.

# PART TWO: Information about the Master's Programme in Business Economics with Analytics

## A) General description

**CONTACT INFORMATION**

Address: Center for Postgraduate Studies and Research, 47A Evelpidon and 33 Lefkados Streets, 11362 Athens

Telephone: +30 210-8203649

Email: business.econ@aueb.gr

Webpage: https://www.dept.aueb.gr/en/business-economics

### ✓ Description of the Programme – Who is it designed for? Why choose this Programme?

***Description of the Programme – Who is it designed for?***

The Master's Programme entitled "Business Economics with Analytics" was established by the 16 June 2020 decision of the University Senate. The Programme is governed by the relevant provisions of Greek law, the Programme's Studies Regulations which were prepared pursuant to the decision of the Department's General Assembly on 3 June 2020, and relevant decisions of the University Senate.

The Master's Programme **is designed for** graduates of Greek universities or technological educational institutions or corresponding foreign institutions (which have been recognized by the Hellenic National Academic Recognition Information Center) with degrees in Economics or other related disciplines (Finance, Business Administration, Marketing, and others) as well as in disciplines such as Engineering, Mathematics, Physics, Statistics, Informatics, and others.

The objective of the Master's Programme in **Business Economics with Analytics** is to offer its students the necessary education in contemporary methods of economic science that are based on econometric and data analysis methods in business economics with analytics. This education covers the professional and research needs and the orientation of the Programme's graduates in either businesses or organizations (public or private) in Greece or abroad. In recent years, the needs have increased – especially in the Greek Economy and the labor market – for the use by economists of econometric methods based on data analysis tools and computational methods, both in the area of analysis as well as in issues of economic policy. This Programme aims to fill this need, offering the Greek economy, primarily, the above-described education, supported by the high-level academic staff of the Department of Economics.

## *Why choose this programme?*

1. The Master's Programme in Business Economics with Analytics helps its students to "build" valuable skills by teaching them how to apply basic elements of statistics to real business problems and how to turn data into a strong strategic advantage.
2. It is among the most contemporary master's programmes offered by the AUEB Department of Economics, having been established very recently, in 2020. The Programme aims to train economists in matters of business economics and business and market strategy, **based on the most up-to-date quantitative and analytical methods**, in a way that will enable them to respond to the present-day demands of businesses and the needs of the Greek economy.
3. The teaching staff of the Programme is composed of professors at Athens University of Economics and Business and other Greek and foreign educational institutions with rich teaching and research experience and publications in international scientific journals.
4. Distinguished executives from the labor market participate in lectures, sharing their experience and knowledge with the students.

## *Career options*

**Professional Horizons and Employment of Graduates**

**Economic Consultant**
Economic consultants use analytical and research skills to conduct studies of alternative economic scenarios. They analyze trends in industry, in commerce and in the markets in order to help businesses to improve their performance. They can be employed in industry and education, in businesses, in governmental and non-governmental organizations, and elsewhere.

Economic consultants may also serve as expert witnesses in legal cases to assess economic damages, to analyze intellectual property rights and antitrust violations, to address regulatory violations in the context of supervising authorities (central banks, competition commission, regulatory authorities for energy and telecommunications).

**Strategist**
Strategy is vital to the growth and success of a business. In large companies, strategic planners are involved in shaping and implementing the organization's strategy. Strategic analysts use information and data – and, depending on the circumstances, artificial intelligence – to make decisions in order to achieve the desired results. They are also in a position to create a sustainable commercial advantage, applying innovative and quantified ideas. Strategic analysts maximize the value per customer by recognizing highly relevant products and sales offers for prospective and current buyers. They approach customers through alternative channels and increase the productivity of advertising and marketing media through artificial intelligence.

**Credit Analyst**
Credit analysts conduct microeconomic analyses of prospective clients in order to assess the risks involved in lending capital to them or to businesses. They take into account economic trends and factors which affect the region, the industries and the competitors of the potential borrowers.

Credit analysts prepare reports which summarize their findings and recommend interest rates which are appropriate for the risk profile of the clients.

**Financial Analyst**
Financial analysts can be employed in the research departments of companies, in financial companies which invest in and analyze stocks, derivatives, bonds and other investment instruments. Their analyses often require advanced quantitative and econometric skills.

These analysts often use computing software and models to aid in their analyses. They write reports and prepare presentations for colleagues and clients who make the final decisions with regard to investments, stock/bond offers and mergers and acquisitions.

**Market Research Analyst**
Market research analysts study the trends in industry, in commerce and in the financial sector to assess the way in which products or services could perform under different economic conditions. They are trained in designing studies and analyzing data. They must be in a position to quantify the results and to present this information to the clients.

These analysts apply many of the skills that they develop in the core economics courses, such as the use of presentation and graphics software, as well as writing and statistics skills. They must exercise critical thinking and be proficient in problem solving.

**Management Consultant**
Management consultants analyze business problems and look for possible solutions to present to clients. Recent graduates often start out in positions such as research analyst, research assistant, or junior consultant, where they support the work of personnel who are more senior in the hierarchy. Over time they can be promoted to positions such as management consultant.

The study of economics provides an excellent foundation in the financial and quantitative modeling which is used by consultants in order to carry out their analyses. Writing and presentation skills are also essential for the preparation of reports and the submission of recommendations to clients.

**Policy Analyst**
Policy analysts research and analyze issues that affect the public. They can be employed as advisers in governmental and international organizations in areas such as healthcare, taxation, energy, the environment, and international trade policy.

Policy analysts rely on quantitative analysis and writing skills to present their findings and to convince legislators and the public of the viability of their recommendations.

**Actuary**
Actuaries use advanced mathematical and statistical/econometric methods to determine the probability of events such as fires, deaths, illnesses, and business failures. They need to take into account a large number of variables when analyzing risk profiles and possible economic losses in order to create a profitable structure for contracts.

Actuaries often use software to assist in their analyses. They devise graphs to convey their decisions to members of the management team.

### ✓ Academic degree awarded

The Master's Programme awards a **Master's Degree (MSc)** in Business Economics with Analytics.

### ✓ Entrance requirements – Selection criteria

Applications for admission to the Programme are submitted during the months of February-June, to the Programme Secretariat, which also issues announcements relevant to the Programme. The selection process runs continuously throughout the application period. In selecting candidates, the following criteria are considered:

a) The grade point average of the student's degree(s).
b) The University and Department of origin.
c) Duration of studies (in years).
d) Certification of English language proficiency, at the level of "very good" or above (that is, level C2 or C1) [Accepted certificates include the Cambridge or Michigan Proficiency, Certificate in Advanced English (CAE), TOEFL (IBT), IELTS, TOEIC, the Greek State Certificate of Language Proficiency in English, as well as any other certificates accepted by the Supreme Council for Civil Personnel Selection (ASEP)].
e) The duration and type of work experience (for the part-time programme).
f) Letters of recommendation from professors or employers.
g) Personal interview (motivation, organization skills, focus of studies, etc.).

Candidates with a degree from a foreign Institution of Higher Education must submit a certificate from the Hellenic National Academic Recognition Information Center (NARIC) recognizing the equivalency of their degree, in accordance with Greek law.

### ✓ Tuition fees

In order to participate in the Master's Programmes at the University, students pay tuition fees. The tuition fees for attending the Master's Programme "Business Economics with Analytics" are shown below.

Tuition fees for the Full-time Programme are **5,400€,** which are paid in four installments as follows:

1st installment: 900€ to reserve the position (June/July)

2nd installment: 900€ during registration (October)

3rd installment: 1,800€ at the beginning of the 2nd semester (March)

4th installment: 1,800€ at the beginning of the 3rd semester (October)

Tuition fees for the Part-time Programme are **7,000€,** which are paid in five installments as follows:
1st installment: 1,400€ (700€ to reserve the position and 700€ during registration)
2nd installment: 1,400€ (at the beginning of the 2nd semester)
3rd installment: 1,400€ (at the beginning of the 3rd semester)
4th installment: 1,400€ (at the beginning of the 4th semester)
5th installment: 1,400€ (at the beginning of the 5th semester)

The Master's Programme can award scholarships or excellence awards to postgraduate students, based on academic criteria, by decision of the Departmental General Assembly.

### ✓ Expected learning outcomes of the Master's Programme

The priority of the **Master's Programme in Business Economics with Analytics** is to offer its students the necessary education in contemporary methods of economic science that are based on econometric and data analysis methods in business economics with analytics. This education covers the professional and research needs and the orientation of the Programme's graduates in either businesses or organizations (public or private) in Greece or abroad. In recent years, the needs have increased – especially in the Greek Economy and the labor market – for the use by economists of econometric methods based on data analysis tools and computational methods, both in the area of analysis as well as in issues of economic policy. This Programme aims to fill this need, offering the Greek economy, primarily, the above-described education, supported by the high-level academic staff of the Department of Economics.

The objectives of the Programme are:

- To prepare students to be able to deal with problems in the economy, the markets and businesses, as well as in organizations, by providing them with solid foundations in the theory and application of economic analysis using analytical and computational methods, as well as with communication and collaboration skills.
- To apply the scientific knowledge provided, with special emphasis on the use of appropriate contemporary methods and analytical tools in teaching.
- To cultivate an entrepreneurial and innovative perspective through the organization of lectures by prominent business executives.
- To follow research developments in the field of economics at the international level, through the organization of lectures and presentations by distinguished scientists.
- To follow and analyze economic developments in Greece and the world through seminars and lectures provided by executives in the business world.
- To contribute to the modernization, know-how and development of the Greek economy, and to improve the competitiveness of the country, through the development of the skills

and knowledge of the Programme's students with regard to new methods and practices in economic analysis.

### ✓ Access to further studies

Graduates of the Programme have access to the third cycle of studies, according to the Studies Regulations of the Doctoral Programme of the Department. The solid foundations of knowledge acquired by the graduates of the Master's Programmes of the Department of Economics, in a wide range of theoretical and quantitative tools, enables them to be accepted into top-level study programmes in Greece and internationally, with specialization in *Economics, Econometrics, Finance, Economic Policy and Applied Economics.*

### ✓ List of courses in the curriculum, with ECTS credits (90 total)

The total number of ECTS credits for the Programme is 90. This includes:

- six compulsory courses, four of which are taken in the first semester of studies and have 7.5 ECTS credits each, and two of which are taken in the second semester and have 6 ECTS credits each;
- three elective courses taken in the second semester, which have 6 ECTS credits each; and
- the preparation of a Master's dissertation in the third semester which has 30 ECTS credits.

Before the Programme starts, two preparatory courses are offered, without ECTS credits.

The distribution of courses for the full-time programme, by semester, is shown in the table below:

| **Course** | **ECTS Credits** |
|---|---|
| **1st Semester** | |
| Industrial Organization and Strategy | 7.5 |
| Financial Market Analysis and Portfolio Management | 7.5 |
| Quantitative Methods | 7.5 |
| Analytical & Computational Data Methods for Economists | 7.5 |
| **Total 1st Semester credits** | **30** |
| **2nd Semester** | |
| Application of Econometrics in Economics and Finance | 6 |
| Applications of Analytical Methods in Business Finance & Strategy | 6 |
| Elective course 1 * | 6 |
| Elective course 2 * | 6 |
| Elective course 3 * | 6 |

| | |
|---|---|
| **Total 2nd Semester credits** | **30** |
| **3rd Semester** | |
| Master's Dissertation | 30 |
| **Total 3rd Semester credits** | **30** |
| **TOTAL ECTS CREDITS FOR THE PROGRAMME** | **90** |

* Below is an indicative list of elective courses offered:

a. Game Theory & Strategic Decisions with applications in Economics
b. Market regulation and Competition Policy
c. Corporate Government
d. Banking Administration and Risk Management
e. Financial Management
f. Behavioral Economics
g. Economics of Innovation
h. Economics of Environment
i. Business Strategy
j. Financial Derivative Products

The courses offered each year are decided upon by the Departmental General Assembly following a recommendation by the Programme's Coordinating Committee.

It is possible for students to choose courses from other Master's Programmes in the School or in the University following a decision by the Departmental General Assembly.

### ✓ Final examinations

1. The final evaluation in each course is conducted through written examinations. By decision of the Departmental General Assembly, following a recommendation by the Coordinating Committee, students' course assignments can also be counted in the final evaluation.
2. The composition of the final grade for each course is determined by the course instructor(s) and can include individual or team assignments. Participation in the examinations on the specific date announced in accordance with the Programme is mandatory.
3. The grading scale ranges from zero (0) to ten (10), in increments of half or whole units. A grade of 5 and above is a passing grade.
4. A student who fails to appear for the exam in a given course on the specified date, without excuse, loses that examination period and is considered to have failed the given course.
5. Failure in more than two courses (cumulative) in the exams of all the semesters results in the student being dropped from the Programme.
6. Students who fail in up to two courses in an examination period are entitled to enroll in the next semester but are required to be re-examined in these courses. If they do not pass all the courses in the re-take examination period, they are required to leave the Programme.

To be awarded the Master's degree, a student must have received a passing grade in all the postgraduate courses and the dissertation. If this condition is not met within the stipulated

deadline, the student is entitled only to a certificate verifying successful completion of the courses that were passed and the student's enrolment in the Programme ends.

Postgraduate students are awarded the Master's Degree when they have fulfilled the requirements below:

a) Mandatory attendance and successful examination in all the courses of the Programme, and successful examination of the master's dissertation if that is a requirement of the student's curriculum.
b) Submission of the required certificate of English as specified in the entrance requirements of the Programme.
c) Payment of all financial obligations with regard to the Programme.

B) Individual course descriptions

**1st Semester**

| | |
|---|---|
| **Course title** | **Introduction to Microeconomic Theory** |
| **Course code** | **m13202s** |
| **Type of course** | Preparatory Course |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 1st |
| **Number of credits allocated (based on the student workload required to achieve the objectives or learning outcomes)** | 0 |
| **Name of lecturer** | **Zacharias El.,** Assistant Professor |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | By the end of the course students will be able to:<br>Understand the way consumers derive the demand curve.<br>Understand the way the supply curve is derived in competitive market<br>To analyze the characteristics of the four market structures.<br>To Understand the concept of Nash equilibrium. |
| **Prerequisites** | - |
| **Course contents** | The course analyzes the basic principles of economics. In particular, we examine the way in which consumers decide how to spend their income. We also analyze how companies decide what and in what quantities they will produce. We examine the properties of the different market structures are and we compare to their characteristics. In many markets, companies take into account the strategies of their rivals and the analysis is conducted by game theory. We introduce to the |

| | |
|---|---|
| | basic principles of game theory and the concept of Nash equilibrium. Finally, we analyze the equilibrium price and quantity of markets in which companies compete either by setting quantities or by setting prices. |
| **Recommended reading** | 1. Ζαχαριάς Ε., «Εισαγωγή στην Οικονομική Επιστήμη», ΟΠΑ,<br>2. Κατσουλάκος Ι., «Θεωρία Βιομηχανικής Οργάνωσης», Gutenberg.<br>3. Nicholson W. (2005) "Microeconomic Theory", Thomson, South-Western.<br>4. Sloman J. and Wride A., «Economics», Prentice Hall. |
| **Teaching methods** | In class lectures |
| **Assessment methods** | Not required |
| **Language of instruction** | Greek/English |

| | |
|---|---|
| **Course title** | |
| **Course code** | **m13201s** Introduction to Statistic Theory |
| **Type of course** | Preparatory course |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 1st |
| **Number of credits allocated (based on the student workload required to achieve the objectives or learning outcomes)** | 0 |
| **Name of lecturer** | **Vrontos I.** Asssistant Professor |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The aim of the course is to provide students with statistical techniques and methods in order to analyze empirical problems. At the end of the course, students will be able to:<br>• Compute useful descriptive measures and construct appropriate diagrams.<br>• Understand the basic distributions and their usefulness in practice.<br>• Calculate probabilities using basic distributions.<br>• Apply parameter estimation methods such as the maximum likelihood method.<br>• Understand the sampling distribution and its usefulness.<br>• Construct confidence intervals and conduct hypothesis testing.<br>• Apply statistical techniques and methods using the R package. |
| **Prerequisites** | None. |

| | |
|---|---|
| **Course contents** | The aim of the course is to present, develop and apply basic concepts of statistics. Descriptive statistical measures and diagrams useful for data exploration are presented, and the theory of basic continuous and discrete distributions is introduced. Methods and techniques for obtaining point estimators such as the maximum likelihood method and the least squares method are developed. The properties of the estimators and the sampling distributions that are used in statistical inference are presented. The construction of confidence intervals and the implementation of hypothesis testing are introduced and presented. Statistical techniques and methods are applied using the R package. |
| **Recommended reading** | • Newbold, P., Carlson, W. and Throne, B. (2012). Statistics for Business and Economics, 8th edition, Pearson.<br>• Casella, G. and Berger R.L. (2001). Statistical Inference, 2nd edition, Duxbury Press.<br>• Barrow, M. (2006). Statistics for Economics, Accounting and Business Studies, 4th edition, Prentice Hall.<br>• Stine, R. and Foster, D. (2014). Statistics for Business Decision Making and Analysis, Pearson. |
| **Teaching methods** | One three-hour lecture per week, study exercises, and programming exercises as homework (some to be submitted). |
| **Assessment methods** | Exercise solving (there is no final examination or marking) |
| **Language of instruction** | Greek/English |

| **Course title** | **Industrial Organization and Policy** |
|---|---|
| **Course code** | **m13103f** |
| **Type of course** | Compulsory course |
| **Level of course** | postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 1st |
| **Number of credits allocated (based on the student workload required to achieve the objectives or learning outcomes)** | 7,5 |
| **Name of lecturer** | **Genakos Chr.,** Associate Professor |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | After successful completion of this course the students must have understood (a) the appropriate tools to analyze different product markets and (b) to expose students to the policy issues related to competition and regulation. |
| **Prerequisites** | …… |

| | |
|---|---|
| **Course contents** | The course deals with Industrial Organization and antitrust and regulation policy. Examines the structure and the various ways firms are competing in imperfect markets as well as the necessary policies to improve market efficiency and productivity. |
| **Recommended reading** | Bellflamme P. and M. Peitz, «Industrial Organization», εκδ. Σοφία, 2016.<br>Cabral Luis, «Industrial Organization», εκδ. Κριτική, 2018.<br>Lynne Pepall, Dan Richards, George Norman, «Industrial Organization», εκδ. Τζιόλα, 2016.. |
| **Teaching methods** | Lectures, exercises and case studies. |
| **Assessment methods** | Written exam. |
| **Language of instruction** | Greek and English |

| **Course title** | **Capital Markets & Portfolio Management** |
|---|---|
| **Course code** | **m13104s** |
| **Type of course** | Compulsory |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 1st |
| **Number of credits allocated (based on the student workload required to achieve the objectives or learning outcomes)** | 7,5 |
| **Name of lecturer** | **Tzavalis Elias**, Professor |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The aim of this course is to introduce students to the modern tools of investment analysis and appraisal, including investment decision under certainty and under uncertainty, pricing of risk, portfolio management, and asset pricing. It also covers topics on pricing fixed income securities, the term structure of interest rates and bond portfolio management. The course includes demonstrations/applications of the above techniques using computer software to see how they can be used, in practice. At the end of the course, the students would have learned the tools of the modern investment analysis and become familiar with their application, in practice. |
| **Prerequisites** | |
| **Course contents** | Investment decisions under certainty, Investment decisions under uncertainty, Mean-variance portfolio analysis, The Capital Asset Pricing Model, Factor models |

| | |
|---|---|
| | and the Arbitrage Pricing Theory, Bond Markets, The term structure of interest rates: theory and practice, Bond portfolio management and International capital markets and portfolio management. |
| **Recommended reading** | Bodie Z., A. Kane and A. Marcus (2009), Essentials of Investments<br>Copeland T. and J. Weston and K. Shastri (2005), Financial Theory and Corporate Policy<br>Danthine J. and Donaldson (2002), Intermediate Financial Theory<br>Fabozzi, F., Kolm. P., Pachamanova, D and Focardi, S. (2007), Robust Portfolio Optimization and Management, Wiley.<br>Fabozzi F. (2016), Bond Markets, Analysis and Strategies, Pearson<br>Luenberger D. (1999), Investment Science |
| **Teaching methods** | Lecturing, laboratory practicals, tutorials and external seminars |
| **Assessment methods** | Written exam and assignments |
| **Language of instruction** | Greek / English |

| **Course title** | **Quantitative Methods** |
|---|---|
| **Course code** | **m13105s** |
| **Type of course** | Compulsory |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 1st |
| **Number of credits allocated (based on the student workload required to achieve the objectives or learning outcomes)** | 7,5 |
| **Name of lecturer** | **Demos A.,** Professor |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The lectures target to familiarize the class participants with the basic theoretical principles and the understanding of financial models. The objective of the applications is to familiarize the students with the various estimation techniques, applied on real data, on the areas of Economics and Finance. |
| **Prerequisites** | At least one undergraduate course in Econometrics and/or Introduction to Statistics (m13104f). |
| **Course contents** | Random Variables. Covariance-Correlation dependence of random variables. Hypothesis Testing. Linear Regression and hypothesis testing. Economic Applications, with emphasis on CAPM. Transformations of random variables and introduction of dummy variables. Misspecification (autocorrelation, heteroskedasticity). Economic significance of heteroskedasticity with emphasis on portfolios and fund formation. GMM and Maximum Likelihood. Binary dependent |

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| | variables (Logit, Probit). Introduction to time series with emphasis on GARCH and VAR models.<br>. |
| **Recommended reading** | C. Heij, P. et al, Econometric Methods with applications in business and economics, Cambridge University Press.<br>J. Johnston and J. DiNardo, Econometric Methods, McGraw-Hill<br>E. Tzavalis Econometrics (in Greek)<br>A. Demos: Financial Econometrics (in Greek)<br>…….. |
| **Teaching methods** | Lectures, where econometric notions and models are thoroughly presented. The applications part, where various econometric packages are employed such as, R (additional seminars), Stata, Eviews, etc. with real or simulated data |
| **Assessment methods** | 20% written project 80% written exam. |
| **Language of instruction** | Greek/English |

| **Course title** | **Analytical & Computational data methods for Economists** |
|---|---|
| **Course code** | **m13106f** |
| **Type of course** | Compulsory course |
| **Level of course** | postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 1st |
| **Number of credits allocated (based on the student workload required to achieve the objectives or learning outcomes)** | 7.5 |
| **Name of lecturer** | Spiliotis E., |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | After successful completion of this course the students will have the knowledge to identify linear and non-linear patters in economic data and to choose or combine appropriate methods for its analysis and management. Moreover, students will be able to understand and explain the results of these methods and extract useful findings in order to support decisions. By applying the analytical and computational methods discussed in the course, students will have also the ability to design and implement integrated methodological approaches for the structuring, analysis, and exploration of economic data by developing their own code. Finally, students will be able to evaluate and compare the performance of the developed methods and make critical conclusions. |
| **Prerequisites** | Basic knowledge of statistics and computer programming. |
| **Course contents** | The course focuses on applied econometrics and computational methods that can be used for the effective analysis and management of economic data. The R Project for Statistical Computing is used for applying these methods and techniques in practice. The course covers the following topics: applications on |

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| | descriptive statistics, explanatory data analysis and basic diagrams, econometric methods for linear and non-linear data, categorical data, linear regression, logistic regression, decision trees, neural networks, clustering, and forecasting. The course also covers indicative methods for optimisation and sampling. |
| **Recommended reading** | • James, G., Witten, D., Hastie, T. & Tibshirani, R. (2013). An Introduction to Statistical Learning with Applications in R, Springer.<br>• Abhijit, G. (2017). Machine Learning with R, Springer.<br>• Hastie, T., Tibshirani, R. & Friedman, J. (2001). The Elements of Statistical Learning, Springer.<br>• Hyndman, R.J., & Athanasopoulos, G. (2018) Forecasting: principles and practice, 2nd edition, OTexts: Melbourne, Australia. OTexts.com/fpp2. |
| **Teaching methods** | Class lectures, laboratory exercises - assignments, literature review and analysis, project preparation, writing of reports and independent study. |
| **Assessment methods** | Written exam at the end of the semester (30%), project preparation (40%), and laboratory exercises - assignments (30%). |
| **Language of instruction** | Greek |

**2nd Semester**

| **Course title** | **Applied Econometrics in Economics and Finance** |
|---|---|
| **Course code** | **m13107s** |
| **Type of course** | Compulsory |
| **Level of course** | postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 1st |
| **Number of credits allocated (based on the student workload required to achieve the objectives or learning outcomes)** | 6 |
| **Name of lecturer** | **Dendramis I.,** Assistant Professor |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | 1. To develop your capacity to understand characteristics of time series such as stationarity, cointegration, causality, time dependence<br>2. To provide you with a stronger understanding in important topics in economics and finance such as risk and expected return.<br>3. To enlighten your insights on the benefits that modern econometrics offer on optimal decision making in economics and finance<br>4. To give you hands-on experience in applying econometric techniques on economics and financial series, with the use of computational software.<br>5. To develop your powers in forecasting economics series with large datasets |
| **Prerequisites** | Undergraduate Econometrics and Statistics |
| **Course contents** | This course is an applied, time series econometrics course, that focuses on estimation, modelling, forecasting and simulation of time series econometrics models. It will cover core of the theory concepts such as stationarity, parameter |

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| | estimation, hypothesis testing, projections, volatility models (arch, garch, egarch), and the analysis of non stationary time series models, with applications in financial and economic series. |
| **Recommended reading** | Tsay, Ruey S. Analysis of financial time series, John Wiley & Sons.<br>Tsay, Ruey S. Multivariate Time Series Analysis: With R and Financial Applications, John Wiley & Sons. |
| **Teaching methods** | In-depth case analysis, academic and practitioner article analysis and discussion, group works, case studies of real world situations. |
| **Assessment methods** | 1. Comprehensive Final Exam, Assignments |
| **Language of instruction** | Greek-English |

| **Course title** | **Applications of Analytical Methods in Business Economics & Strategy** |
|---|---|
| **Course code** | **m13108s** |
| **Type of course** | Compulsory |
| **Level of course** | postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 2nd |
| **Number of credits allocated (based on the student workload required to achieve the objectives or learning outcomes)** | 6 |
| **Name of lecturer** | **Achilleas Vassilopoulos**, University of Ioannina<br>**Fotis Papailias**, King's Business School |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | After successful completion of this course the students must have a good understanding of:<br>• Large data features (seasonalities, nonstationarities, etc.),<br>• how machine learning methods work (supervised and unsupervised machine leaning) and could be applied to macroeconomics and finance applications,<br>• various methodologies to predict financial distress,<br>• experimental design theory and applications<br>• basic preference/choice model building<br>• theory and econometric estimation of basic and advanced choice/preference models<br><br>Furthermore, students are expected to obtain the necessary skills to be able to:<br>• use scientific software and develop codes independently,<br>• collect, handle and organise large panels of data,<br>• visualise data and extract features,<br>• apply machine learning techniques in practice and interpret the output in economics and finance applications, |

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| | • build methodologies to predict financial distress,<br>• decompose and quantify the effect of attributes/characteristics on consumers' choices/preferences<br>• simulate and predict choices, demand and market shares<br>• design data collection tools for the estimation of behavioral models |
| **Prerequisites** | None formal pre-requisite, a basic level of maths/stats and econometrics is required. |
| **Course contents** | The course is divided in two parts: (i) Part I is concerned with analytical methods in economics focusing more on macroeconomics, portfolio selection and financial distress, and (ii) Part II is concerned with analytical tools for modelling individual behavior/choices and techniques to design data collection instruments (e.g. surveys) to predict choices, market shares under different market scenarios.<br><br>The first part of the course is designed to introduce students to the concepts of large data handling and analysis with machine learning techniques. We discuss large data handling techniques and discuss its features (seasonalities, nonstationarities). We discuss machine learning methodologies (k-means clustering, principal component analysis, lasso, etc.) could be applied in economics and finance and provide macroeconomic and portfolio selection applications. Finally, we extend the list of our topics and discuss how to use methodologies to predict financial distress (Z-score, O-score and top-down approaches).<br><br>The second part of the course is designed to give students a basic understanding of preference/choice models (Conjoint Analysis, Discrete Choice Analysis, Best-Worst Scaling). We discuss how to unify economic theory with practise by creating behavioral models in real context and how to apply them to understand and predict consumer choices, demand, and market shares. Finally, we introduce the theory and application of experimental design techniques aiming at generating preference/choice data collection tools to surpass the absence and/or inadequacy of observational data.<br><br>Both parts of the course have a "hands-on" approach where all methods are applied in real data using the R Project for Statistical Analysis as the main scientific software. |
| **Recommended reading** | Main reading: supplied material.<br><br>Part I, Supplementary readings include:<br>• James, G., Witten, D., Hastie, T., Tibshirani, T. (2013). An Introduction to Statistical Learning with Applications in R. Springer, New York.<br>• Hyndman, R.J., Athanasopoulos, G. (2019). Forecasting: Principles and Practice, 3rd Edition, OTexts: Melbourne, Australia.<br>• Würtz, D., Setz, T., Chalabi, Y., Chen, W., Ellis, A. (2015). Portfolio Optimization with R/Rmetrics. Rmetrics Association and Finance Online Publishing, Zurich.<br>• Xidonas, P., Mavrotas, G., Krintas, T., Psarras, J., Zopounidis, C. (2012). Multicriteria Portfolio Management, Springer, New York.<br>And various academic papers discussed throughout the module.<br><br>Part II, Supplementary readings include:<br>• Ben-Akiva M, Lerman SR (1985). Discrete Choice Analysis: Theory and Application to Travel Demand. The MIT Press, MA, USA. |

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| | • Hensher DA, Rose JM, Greene WH (2015). Applied Choice Analysis: A Primer. Second Edition, Cambridge University Press, Cambridge, UK.<br>• Train KE (2009). Discrete Choice Methods with Simulation. Second edition. Cambridge University Press, NY, USA. |
| **Teaching methods** | • Weekly lectures (theory & hands-on),<br>• Weekly tutorials (theory & hands-on),<br>• Learning-by-doing approach. |
| **Assessment methods** | The final mark will be the equally-weighted average of the marks for Part I and Part II.<br><br>The mark for Part I is obtained as (weights in squared brackets):<br>• [10%] Weekly attendance and assignments,<br>• [50%] Project (essay and code),<br>• [40%] Final Exam.<br><br>The mark for Part I is obtained as (weights in squared brackets):<br>• [10%] Weekly attendance<br>• [40%] Weekly projects (essay and code),<br>• [50%] Final project<br><br>The final mark is obtained as: (Final Mark Part I + Final Mark Part II)/2 |
| **Language of instruction** | English/Greek |

**2nd Semester (Indicative list of elective courses)**

| **Course title** | **Game Theory & Strategic Decisions: with applications in Economics** |
|---|---|
| **Course code** | **m12106f** |
| **Type of course** | Elective |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 1st |
| **Number of credits allocated (based on the student workload required to achieve the objectives or learning outcomes)** | 6 |
| **Name of lecturer** | **GATSIOS KONSTANTINOS**, Professor |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The chief purpose of this course is to enable the student to set up, study and solve games, especially games that arise in business and economics. To acquire a taste of the type of situations we would be interested in as well as the type of questions we would be asking, think of the following “real-life” situation. |

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| **Prerequisites** | It does not require knowledge of economics (or any other science), despite the fact that it is necessary for an in-depth understanding of many economic (and not only) problems. The use of mathematical tools in the course is also quite limited. |
| **Course contents** | this course is designed for people in business, for managers. It is as theoretical as necessary for providing an introduction to the science of game theory; and practical in that it offers many applications and case studies to make it attractive to managers in both the commercial and non-profit sectors, as well as to students in business. |
| **Recommended reading** | Prajit K. Dutta, *Strategies and Games, Theory and Practice*, MIT Press.<br>Osborne, M: An Introduction to Game Theory, εκδ. Κλειδάριθμος.<br>Gibbons, R: *A Primer in Game Theory*, 1992 |
| **Teaching methods** | Lectures, assignments, laboratory sessions. |
| **Assessment methods** | 75% Exams, 20% homework, 5% participation in the course |
| **Language of instruction** | Greek |

| Course title | Business Finance and Strategic Business Decisions |
|---|---|
| Course code | **m13219s** |
| Type of course | Compulsory/Elective course |
| Level of course | postgraduate |
| Year of study | 1st |
| Semester/trimester | 2st |
| Number of credits allocated (based on the student workload required to achieve the objectives or learning outcomes) | 6 |
| Name of lecturer | **Fabio Antoniou**, Assistant Professor |
| Objective of the course (preferably expressed in terms of learning outcomes and competences) | The objective of the course is to develop strategic thinking by learning the concepts, analytical models, and tools of strategic analysis and by applying them to actual competitive situations. The students must be able to combine different models and draw conclusions using critical thinking. After the completion of the course the students shall be able to analyze case studies and present them. |
| Prerequisites | Principles of microeconomic theory |
| Course contents | 1. The optimal boundaries (horizontal, vertical, corporate) that the firm should select. Technology of production, agency cost vs. transaction cost and incentives for diversification (often through merger and acquisition) are examined as major determinants. Optimal vertical hierarchies are examined and incentives in vertical markets. How to design a contract when there is asymmetric information.<br>2. The analysis of price and non-price competition in well-defined markets. Entry/exit and their effect on competition.<br>3. The value of strategic commitments. The value of commitment when consumers are also strategic. Porter's five-forces industry analysis.<br>4. The choice of strategic competitive advantage, product positioning and dynamic adjustments. Internal organization and moral hazard.<br>5. An introduction to behavioral industrial organization, which studies how business decisions regarding pricing etc. change when agents such as consumers have several biases. |
| Recommended reading | 1. Besanko, D. et al. (2017), Economics of Strategy (7th edition), John Wiley and Sons, N.Y (February 2017).<br>2. Baye, M. & Prince, J. (2013), Managerial Economics and Business Strategy, (2nd edition), McGraw Hill, N.Y.<br>3. Porter, M. (2004), Competitive Advantage, Free Press.<br>4. Laffont, J.J & Martimort, D. (2002), The Theory of Incentives: The Principal-Agent Model, Princeton University Press.<br>5. Heidheus, P. & Koszegi B. (2018), Behavioral Industrial Organization, from Handbook of Behavioral Economics. |
| Teaching methods | Powerpoint slides, use of blackboard. Group student essays and presentations. |

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| **Assessment methods** | Final exams, student essays and presentations. |
| **Language of instruction** | Greek/English |

| **Course title** | **Behavioral Economics** |
|---|---|
| **Course code** | **m13214s** |
| **Type of course** | Elective |
| **Level of course** | postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 2nd |
| **Number of credits allocated (based on the student workload required to achieve the objectives or learning outcomes)** | 6 |
| **Name of lecturer** | **Dioikitopoulos E**, Assistant Professor in Economics |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | After successful completion of this course the students must have understood behavioural game theory, design of economic experiments, analysis of consumer behavior at the micro and macro level and analytical methods for understanding and predicting individual and social behavior. Also, studentσ will get the analytical tools of applying the aforementioned learning outcomes on economics, business, finance and marketing. |
| **Prerequisites** | …… |
| **Course contents** | This course examines the role of systematic bias in the financial decisions of businesses and individuals, such as pricing and consumption decisions. The analysis is done first on a theoretical level through the construction of models and then through the construction of experiments and econometric analyzes. More specifically, the course focuses on biases such as overconfidence, naivety, aversion to loss, aversion to uncertainty, the Placebo phenomenon, reciprocity, the architecture of choices, the attachment to reference points, reputation mechanisms, the pursuit of social status and the cultural dimensions of human behaviour. Finally, we will develop analytical and quantitative behavioural tools to explain the behaviour of microeconomic and macroeconomic variables and we will extend the analysis to different subfields such as behavioral industrial organization, marketing, economic policy, finance and business. |
| **Recommended reading** | 1. C. F. Camerer. 2003. Behavioral game theory: Experiments in strategic interaction. Russell Sage Foundation.<br>2. D. Kahneman 2011. Thinking, Fast and Slow. Farrar, Straus and Giroux.<br>3. O. Galor, 2011. Unified Growth Theory. Princeton University Press<br>4. C. Gaganis, I. Hasan, and F. Pasiouras 2017 The effect of board directors from countries with different genetic diversity levels on corporate performance (with ). \textit{Management Science} 63 231-249. |

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| | 5. E. Dioikitopoulos, S. Turnovsky and R. Wendner 2020 Dynamic Status Effects, Savings and Income Inequality“, International Economic Review.<br>6. S. Jaikumar and A. Sarin 2020 Conspicuous consumption and income inequality in an emerging economy: evidence from India, Marketing Letters.<br>8. B. Enke, A. Falk, A. Becker, T. Dohmen, D. Huffman, and U. Sunde, 2018 Global Evidence on Economic Preferences. Quarterly Journal of Economics, vol. 133(4), pp. 1645-1692.<br>9. B. Enke, 2019, Kinship, Cooperation, and the Evolution of Moral Systems,Quarterly Journal of Economics} , vol. 134(2), pp. 953-1019.<br>10. S. Georganas, M. Sutter and T. Alysandratos, 2020. Driving to the Beat: Reputation vs Selection in the Taxi Market. Disentangling reputational from self-selection effects in credence goods markets. A field experiment in Athens, working paper. |
| **Teaching methods** | Lectures and Labs. |
| **Assessment methods** | Individual Essays and a Final Exam. |
| **Language of instruction** | Greek/English |

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|---|---|
| **Course title** | **Banking and Risk Management** |
| **Course code** | **m13212s** |
| **Type of course** | Elective |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 2nd |
| **Number of credits allocated (based on the student workload required to achieve the objectives or learning outcomes)** | 6 |
| **Name of lecturer** | **Sakellaris Plutarchos**, Professor |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | By the course end, the students should be able to:<br>• master the fundamentals of risk management (except for credit risk management) as well of compliance to bank regulatory procedures.<br>• Identify and measure risk exposure for a FI, applying methods such as Value-at-Risk (VaR) and Expected Shortfall.<br>• Understand and implement hedging strategies to offset portfolio and asset risk positions using derivative instruments such as futures, forwards, options, and swaps. |
| **Prerequisites** | |

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| **Course contents** | The financial crisis that erupted in 2007 has demonstrated the importance of recognizing and managing the multiple risks with which Financial Institutions (FI) are faced. This course provides an integrated approach to managing risks faced by FIs: their recognition, measurement and mitigation. We place emphasis on the role that derivative products play in mitigating risk. We cover both internal systems as well as external rules of prudential supervision. We examine solutions to the deficiencies that led to failures in both self-regulation of FIs as well in their official supervision. |
| **Recommended reading** | J. C. Hull, Risk Management and Financial Institutions, (Wiley Finance), 5th edition, 2018<br>A. Saunders and M. M. Cornett, Financial Institutions Management: A Risk Management Approach, McGraw Hill, 8th edition, 2014.<br>G. Sapountzoglou and C. N. Pentotis, Banking Economics, (vols A and B), G. Benou Editions, 2009 (In Greek)<br>Nikolaos Th. Mylonas, Derivative Products and Markets, Hellenic Banks Association and Dardanos, 2005 (In Greek)<br>Steve Allen, Financial Risk Management: A Practitioner's Guide to Managing Market and Credit Risk (Wiley Finance), 2nd edition, 2013. |
| **Teaching methods** | Lectures, assignments, guest lectures by industry practitioners, laboratory sessions. |
| **Assessment methods** | Problem sets, assignments, exams. |
| **Language of instruction** | Greek |

| **Course title** | **Economics of Innovation** |
|---|---|
| **Course code** | **m13215s** |
| **Type of course** | Elective |
| **Level of course** | postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 2st |
| **Number of credits allocated (based on the student workload required to achieve the objectives or learning outcomes)** | 6 |
| **Name of lecturer** | **Genakos Chr.,** Associate Professor |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | Equip students with the main methodological tools and knowledge in order to be able to understand:<br>- the main aspects of innovation (micro, macro, production of knowledge)<br>- how firms achieve innovation (entrepreneurship, organisation, clusters, networks)<br>-the effects of innovation (diffusion, trade, competitiveness, sustainability) |

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| | Critically evaluate the role of policy in fostering innovation and technological change. |
| **Prerequisites** | …… |
| **Course contents** | 1.The microeconomic and macroeconomic view of innovation and technology<br>2.The market failure arguments for innovation policy and the Production of Knowledge<br>3.The relationship between innovation, technology and market structure<br>4.Cumulative Innovations, Licencing, Joint Ventures and Industrial Dynamics<br>5.Innovation and entrepreneurship<br>6.Technology Diffusion and Knowledge Spillovers<br>7.The Economics of Technical Standards and Network Effects<br>8.The Financing of Research and Development<br>9.Investment in Infrastructures<br>10.4th Industrial Revolution and the role of innovation<br>11.European and Greek innovation policy |
| **Recommended reading** | Hall, B. and Nathan Rosenberg (Eds.) (2010), *Handbook of the Economics of Innovation*, Volumes I and II, Elsevier.<br>Scotchmer, S. (2006) *Innovation and Incentives*. London: MIT Press |
| **Teaching methods** | Lectures, exercises and case studies. |
| **Assessment methods** | Written exam. |
| **Language of instruction** | English |

| **Course title** | **Market Regulation and Competition Policy** |
|---|---|
| **Course code** | **m13210s** |
| **Type of course** | Elective |
| **Level of course** | postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 2st |
| **Number of credits allocated (based on the student workload required to achieve the objectives or learning outcomes)** | 6 |
| **Name of lecturer** | **Katsoulakos** Y., Professor |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | After successful completion of this course the students must have understood and be able to analyse firm strategies and practices that can lead to a reduction on long-run consumer welfare and to understand how these practices can be confronted by regulation and competition policy. |
| **Prerequisites** | Micro economics and Industrial Organisation |

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| **Course contents** | The course examines firm strategies the objective of which is the creation or enhancement of their market power. It also examines how these strategies are dealt with by Competition Policy the main form of regulation of oligopolistic markets. The course combines the application of economic models to the analysis of firm strategies in oligopopolistic markets with the use of practical examples and real world case-studies for a better appreciation of the results.<br><br>First, unilateral exclusionary practices by dominant firms are examined. Then strategies that are based on agreements between firms (like the cartels) are examined. Finally, there is an extensive examination of horizontal mergers. |
| **Recommended reading** | 1. Katsoulacos Y (2014) «Theory of Industrial Organisation – Markets, Firm Strategies and Competition Policy», Part 4, Dardanos – Athens 2014.<br>2. Katsoulacos Y and N. Vettas (2004) «Competition Policy and Regulation», Dardanos – Athens, 2004. Chapters 11, 12, 13.<br>3. Massimo Motta (2004) "Competition Policy", Cambridge University Press, Chapters 4 – 7. |
| **Teaching methods** | Application of economic models to the analysis of firm strategies in oligopopolistic markets using examples and real world case-studies for a better appreciation of the results. |
| **Assessment methods** | Examination at end of course |
| **Language of instruction** | Greek/English |

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| **Course title** | **Corporate Finance** |
| **Course code** | **m44110f** |
| **Type of course** | Elective |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 2nd |
| **Number of credits allocated (based on the student workload required to achieve the objectives or learning outcomes)** | 6 |
| **Name of lecturer** | Pagratis Spyros, Assistant Professor |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | Corporate Finance is one of the seven core courses of the program. Students taking this course should be able to:<br>1. Identify turning points in economic policy that could have a material impact on funding conditions and corporate decisions to access external financing.<br>2. Navigate in the new era of extraordinary policy interventions by central banks that have a profound impact on asset valuations and the cost of corporate financing.<br>3. Value investment projects, conduct capital budgeting exercises, and identify factors that affect corporate decisions to access different forms of financing.<br>4. Assess alternative ways of accessing capital markets.<br>5. Identify issues of first-order importance that are relevant to corporate financing, combine them to make informed decisions and negotiate funding terms with financiers. |
| **Prerequisites** | The course *Capital Markets and Portfolio Management* is prerequisite. |
| **Course contents** | **Session 1. A primer on money creation in a modern economy**<br>• Quantitative Easing (QE) and asset valuations.<br>• Quantitative Tightening (QT) and capital market turbulence. A view to the future.<br>• Long-term refinancing operations, targeted operations, credit easing, outright monetary operations (OMT) and the Covid-19 pandemic emergency programs.<br>**Session 2. Capital Structure: Optimal debt-equity choice.**<br>• Empirical patterns of corporate financing and possible explanations.<br>• Types of financial instruments and markets.<br>• Modigliani-Miller irrelevance proposition. An options-based approach to debt and equity valuations. The weighted average cost of capital (WACC) and WACC fallacies.<br>• Capital structure under financial frictions. Taxes, financial distress costs and the static trade off (STO) in practice.<br>• Debt-overhang: The underinvestment problem and the role of financial restructuring.<br>• Equity capital raising and the mechanics of rights issues. |

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| | • Incentives, asymmetric information and the pecking-order of financing choices.<br>**Session 3. Business plans: Risk, return, and free cash flow analysis**<br>• WACC and the internal rate of return (IRR) in practice.<br>• Data sources: Equity risk premium (ERP), marginal tax rates, sectoral betas and growth rates on operating income (EBIT).<br>• Free cash flow analysis: Working capital, sunk costs, tax shields (amortization-depreciation and interest costs). |
| **Recommended reading** | *The course packet* contains an extensive set of self-contained slides (approx. 170 slides) that are structured in three main sections, following the section list above. It also incudes articles from business press (that students need to follow closely). These are optional but recommended to those students without prior exposure to finance.<br><br>Auxiliary textbooks:<br>1. Brealey, Myers, and Allen. "Principles of Corporate Finance", McGraw-Hill, New York, NY.<br>2. Jean Tirole. "The Theory of Corporate Finance", Princeton University Press.<br>3. Financial Times (November 26, 2019), "Repo: How the financial markets' plumbing got blocked. Available at https://ig.ft.com/repo-rate/<br>4. Norelli A. and B. Merrill, "Quantitative Tightening: Many Moving Parts," J.P. Morgan Asset Management (Nov 2, 2017). Available at: https://blog.jpmorganinstitutional.com/2017/11/quantitative-tightening-many-moving-parts/<br>5. McLeay M, Radia A., and R. Thomas, "Money creation in the modern economy," Bank of England Quarterly Bulletin (2014 Q1). Available at: https://www.bankofengland.co.uk/quarterly-bulletin/2014/q1/money-creation-in-the-modern-economy |
| **Teaching methods** | Lecturing will be supported by video presentations, in-class case analyses, and occasional invited lectures by market experts. Students are expected to be prepared for class at all times and to contribute to class discussions. |
| **Assessment methods** | The course is evaluated through one final exam that counts for 100% of the course grade. The final exam is closed books and closed notes and lasts for 2 hours. It covers material from the entire course, including occasional invited lectures. Students are encouraged to use a calculator for the exam. This element is geared towards assessing students' ability to present concisely and quantitatively credible solutions to explicit corporate finance problems. |
| **Language of instruction** | English/Greek |

| | |
|---|---|
| **Course title** | **Financial Derivatives** |
| **Course code** | **m13220s** |

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|---|---|
| **Type of course** | Elective |
| **Level of course** | Postgraduate |
| **Year of study** | 1st |
| **Semester/trimester** | 2nd |
| **Number of credits allocated (based on the student workload required to achieve the objectives or learning outcomes)** | 6 |
| **Name of lecturer** | **Topaloglou** Nikolaos, Professor |
| **Objective of the course (preferably expressed in terms of learning outcomes and competences)** | The aim of this course is to introduce students to the theoretical and practical aspects of financial derivatives.<br>• Specifically, the course examines the pricing and use of financial derivatives including options, forward contracts, futures contracts, swaps and credit derivatives.<br>• The course will extensively focus on the theory and applications of derivatives in speculation and risk management.<br>• Moreover, the course includes a computational demonstration of the pricing models with excel. |
| **Prerequisites** | |
| **Course contents** | The course covers the main financial derivatives: futures and futures on various underlying values. Options on shares, indices, currencies and futures. Interest rate swaps and foreign exchange. The focus of the analysis are pricing and hedging derivatives or derivatives positions by financial institutions. Special topics covered include, inter alia, the Black - Scholes model, binomial trees, hedging deltas, as well as various applications such as real rights in finance. |
| **Recommended reading** | John C. Hull "Options, Futures, & Other Derivatives" Prentice Hall.<br>Jarrow & Turnbull "Derivative Securities," South Western.<br>Robert Whaley, "Derivatives: Markets, Valuation, and Risk Management", Wiley.<br>Robert L. McDonald "Derivative Markets," Addison-Wesley Series in Finance.<br>Don M. Chance & Robert Brooks, "An Introduction To Derivatives And Risk Management" Thomson Southwest Learning.<br>Salih N. Neftci "An Introduction to the Mathematics of Financial Derivatives," Academic Press.<br>Paul Wilmott "Derivatives: The Theory and Practice of Financial Engineering," Wiley. |
| **Teaching methods** | Lectures, assignments |
| **Assessment methods** | Problem sets, assignments, exams. |
| **Language of instruction** | Greek/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 of 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 crucial social issues. More information can be found 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