UNIVERISTY OF THESSALY

DEPARTMENT OF ECONOMICS

MSc APPLIED ECONOMICS GUIDE

VOLOS 2023-24

PREFACE

On behalf of the teaching and administrative staff of the Department of Economics at the University of Thessaly, we welcome you to the 16th series of postgraduate students in the "Applied Economics" Master's Program.

The aim of this program is to equip you with the knowledge which is necessary for applying economic principles across various sectors of the economy. Our goal is to provide you with the essential tools to tackle scientific and professional challenges in today's globalized economy from a competitive standpoint.

The curriculum of the program is continuously adapted to the contemporary developments in the field of economics internationally. It relies not only on the expertise of our Department members but also on the participation of colleagues from other universities and distinguished speakers who will enrich your learning experience.

We assure you that we will take maximum care to ensure that your period of study becomes highly beneficial and filled with positive experiences.

Professor Michail Zouboulakis
Director of Master's Program

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INTRODUCTION

The present Postgraduate Program (Master's) is titled "Applied Economics" and awards a Master's Degree in Specialization in five fields that cover a wide range of knowledge areas, including banks and various financial advisory firms, private enterprises, as well as National Defense and Security and the operation of Public Administration at all levels.

The aim of the program is to equip graduates with the necessary knowledge required to engage in policy-making in various sectors of the economy.

Specifically, the program aims to achieve the following:

- Enhance knowledge of economic theory and policy.
- Provide an in-depth understanding of modern scientific methods and techniques necessary for making economic decisions for professionals in both the public and private sectors.
- Prepare students for postgraduate doctoral studies.

Below, we provide a brief overview of the University of Thessaly, the Department of Economics, and, more specifically, the revised Postgraduate Program and its courses. The guide includes the new Study Regulation as well as the regulations for exams, computer labs, and the library.

I. UNIVERSITY OF THESSALY

Establishment and Administration

The University of Thessaly was founded in 1984 (along with the University of the Aegean and the Ionian University) under Law 83/1984 (FEK 31/tch.1o/20-3-1984) and admitted its first students in the academic year 1988-89. The city of Volos was designated as the headquarters of the University.

As a Higher Education Institution, the University is a Legal Entity of Public Law with full self-administration. It is supervised and funded by the State through the Ministry of Education and Religious Affairs. According to the new institutional framework for Higher Education, the governing bodies of the University are the Rector, the University Council, and the Senate.

The University Council consists of:

- The Rector and five Professors of the University of Thessaly, as internal members.
- Five external members elected by the internal members. External members may be Professors from foreign universities, individuals with wide recognition or contribution to culture, arts, letters, sciences, the economy, or society, as well as representatives of international organizations or social partners.

The Senate of the University of Thessaly consists of:

- The Rector, the Deans of the 8 Schools, and the Heads of the 35 Departments of the University of Thessaly.
- A representative of the Special Teaching Staff (STS).
- A representative of the Special Teaching and Research Staff (STRS).
- A representative of the Special Technical Laboratory Staff (STLS).
- A representative of the Administrative Staff.
- A representative of students, postgraduates, and doctoral candidates.

ORGANIZATION OF UTH SCHOOLS

School of Humanities and Social Sciences (Volos)

- Department of Primary Education
- Department of Special Education
- Department of Preschool Education
- Department of History, Archaeology, and Social Anthropology
- Department of Linguistics and Intercultural Studies
- Department of Culture and Creative Media Industries

School of Agricultural Sciences (Volos-Larissa-Karditsa)

- Department of Ichthyology and Aquatic Environment
- Department of Plant Agricultural Production and Rural Environment
- Department of Agricultural Technology

Polytechnic School (Volos)

- Department of Architecture
- Department of Electrical and Computer Engineering
- Department of Urban and Regional Planning
- Department of Mechanical Engineering
- Department of Civil Engineering

School of Health Sciences (Larissa-Karditsa-Lamia)

- Department of Medicine
- Department of Biochemistry and Biotechnology
- Department of Nursing
- Department of Veterinary Medicine
- Department of Public and One Health
- Department of Physiotherapy

School of Physical Education and Sport Science (Trikala)

- Department of Dietetics and Nutrition
- Department of Sport Science

School of Sciences (Lamia)

- Department of Mathematics
- Department of Informatics and Telecommunications
- Department of Computer Science with Applications in Biomedicine
- Department of Physics

School of Technology (Larissa-Karditsa)

- Department of Forestry, Wood Science and Design
- Department of Environmental Studies
- Department of Energy Systems
- Department of Digital Systems

School of Economics and Business (Volos-Larissa)

- Department of Economics
- Department of Business Administration
- Department of Accounting and Finance

The University of Thessaly offers a total of 94 Postgraduate Programs. For detailed information, please visit: University of Thessaly Postgraduate Programs

Field Code Changed

Master Programs School of Economics and Business Administration

- Department of Economics (Volos)
    - Applied Economics
    - Accounting and Auditing
    - Econophysics- Financial Forecasting (interinstitutional Master's program with the International University of Greece)
    - Entrepreneurship (interdepartmental Master's program with the Department of Business Administration)
    - M.Sc. in International Economics and Security (transnational program with East London University, **In English**)
- Department of Accounting and Finance (Larissa)
- Department of Business Administration (Larissa)
    - Business Administration - MBA
    - Agile Management

Field Code Changed

Field Code Changed

Services and Offices of the University of Thessaly

Administrative Services The Administrative Services of the University of Thessaly are located in Volos and handle budget, payroll, seniority, procurement, and related matters. Administrative Director: Kostas Kafetzopoulos Financial Management Director: Vasiliki Frangou Academic Affairs Director: Maria Anastasiou

Departments

- Student Affairs Department
- Student Welfare Department
- Cultural Exchanges and Public Relations Department

Technical Services The Technical Services are responsible for preparing and assigning studies, construction, supervision, and maintenance of the university's buildings and other technical projects.

Special Research and Funding Account (ELKE) ELKE manages research programs conducted by the departments of the University of Thessaly. It handles funds from various sources to cover expenses related to research, education, training, and development projects undertaken by the university's academic staff.

Library The University of Thessaly Library, established in 1988, operates as a unified service with its central branch in Volos and branches in the four cities where the university's departments and schools are located. The library manages book orders, scientific journals, and databases. Users can access catalogs and databases via the internet.

Organizational Supervisor: Dr. Giannis Klapsopoulos

For more information about the library's services and operation, you can visit their website: http://www.lib.uth.gr/

Field Code Changed

Contact Information Address: Metamorfoseos 2, 383 33 Volos Telephone:

- Address: +30 24210 06338

- Secretariat: +30 24210 06335
- Borrowing-Renewals: +30 24210 06300-1 Fax: +30 24210 74851 Email:
- Address: clib@uth.gr
- Information: libinfo@lib.uth.gr
- Secretariat: secr@lib.uth.gr
- Monographs Ordering Service: ordm@lib.uth.gr
- Interlibrary Loan Service: ill@lib.uth.gr

Field Code Changed

Field Code Changed

University Press

The University of Thessaly Press was founded in 1998 in Volos with the aim of promoting and disseminating scientific knowledge and enhancing educational teaching. They:

- Encourage the writing of contemporary academic publications in fields where the small size of the domestic market does not attract the interest of commercial publishing houses.
- Offer the opportunity for the academic staff of the University of Thessaly, as well as other educational institutions, to contribute by writing studies, monographs, or creating scientific journals on topics and areas of social, economic, and technological interest.
- Produce teaching and educational materials in print and electronic formats, such as notes, exercises, articles, and research papers primarily distributed to students.

Email: press@uth.gr

Field Code Changed

Bookstore The bookstore of the University Press, along with the gift and souvenir shop of the University of Thessaly, is located on the ground floor of the Tsikrikis Building, Iasonos 145, Volos. Phone: +30 24210-74118.

Mediation Office The Mediation Office has been operating since the academic year 1996-97, funded by the General Secretariat for Research and Technology (GGRT). Its main purpose is to take the necessary initiatives and actions to promote and enhance the cooperation between the University of Thessaly and productive entities (small and medium-sized enterprises,

production and development organizations, and individuals). It also provides timely, accurate, and reliable information, in both print and electronic formats, about the activities and research opportunities of the University of Thessaly, as well as the services it offers. The Mediation Office is supervised by the Research Committee and is located in the Tsalapata Complex, Giannitson & Lachana, Volos. Email: liaison@uth.gr

Field Code Changed

Career Office The Career Office of the University of Thessaly was established in October 1996 and is funded by the European Union and the Greek State. This office provides information to graduating students about potential job opportunities in the labor market, as well as prospects for further education and specialization. It assists in finding postgraduate studies, scholarships, internships, and other opportunities for practical training, among other services. The Career Office is located in the Tsakalpata Complex, Giannitswn & Lachana, Volos. Phone: +30 24210 06473 Email: career@uth.gr Website: http://www.career.uth.gr

Field Code Changed

Field Code Changed

Office of European Educational Programs

The Office of European Educational Programs was established in 1995, initiated by the Continuous Assembly of Rectors of Greek Universities, with the aim of providing administrative support for educational programs of the European Union in which Greek Universities participate. The ERASMUS program offers mobility scholarships: a) for students, allowing them to study part of their curriculum in another country, and b) for teachers to promote the European dimension in education. As part of the ERASMUS program, the University of Thessaly has signed 314 bilateral agreements for the academic years 2015-2016 with European Universities. The office is located on the 1st floor of the University's Administration Building, Argonauton & Filellinon, Volos.

ERASMUS Program Coordinator: Vice-Rector for International Relations Program Coordinator: Penelope Dalli Phone: +30 24210-74566 Fax: +30 24210-74603 Email: irep@uth.gr

Field Code Changed

Internship Office

The Internship Office is responsible for liaising with industry and selecting students who participate in internships. Within the framework of the program, internships are mandatory for the Departments of Agriculture, Mechanical Engineering, Civil Engineering, Spatial Planning, Urban Planning, Regional Development, Biochemistry, and Biotechnology, while they remain optional for other Departments. The office is located in the Tsakalpata Complex, Giannitswn & Lachana, Volos.

Office Coordinator: Deputy Rector for Academic Affairs Phone: +30 24210 06475 and +30 24210 06477 Email: gpa@uth.gr

Field Code Changed

Office of Public and International Relations

The Office of Public and International Relations is responsible for promoting the institution at national and international levels. This office organizes events, conferences, visits, ceremonies, and other activities for the University of Thessaly as a whole.

Office Manager: Maria Anastasiou Phone: +30 24210-74602

UTH Telecommunications Network (UTHnet)

The UTH Telecommunications Network provides essential telephone services (unified internal telephone network with call transfer/forwarding/call recognition, call answering from another device) and internet services such as email, web pages (www.uth.gr), Usenet discussion groups, electronic catalog services, file transfer (ftp.uth.gr), remote network access via telephone call, and training in network service usage through seminars and informational materials.

Field Code Changed

The UTH Telecommunications Network is managed by the Telecommunications Network Management Center, which is based in Volos and operates along with its five branches from Monday to Friday from 09:00 to 17:00.

- Manager: Serafeim Tsamasiotis
- Central Office: Argonauton and Filellinon, Volos

II. DEPARTMENT OF ECONOMICS

The Department of Economics was established by Presidential Decree 211/3-9-99 (Government Gazette 179A'/06-09-1999) and has been in operation since September 1999, based in Volos. According to the founding Presidential Decree, the mission of the Department is "to educate scientists capable of contributing to the further advancement of Economic Theory and its applications in the economic policy of the state, in the prediction of economic phenomena, and in the development of productive activities." Today, it is housed in the renovated building of the former Matsaggos tobacco factory on 28th October Street. The Department of Economics offers specialization, as per its Study Program, in knowledge areas that meet the needs of both the National Economy and the contemporary developments in Economic Science. Therefore, it is oriented towards the prospect of immediate connection of its graduates to the labor market.

Library and Reading Room of the Department

The library needs of the Department's students are covered by the Central Library of the University of Thessaly, which is one of the first automated libraries in Greece. All processes, such as borrowing, reservations, orders, are carried out through the automated system of the Central Library in Volos and its branches in Fytoko, Larisa, Karditsa, Trikala, and Lamia. The library is open to students, faculty members, and any interested researcher and scholar in the wider area. At the same time, there is a reading room for the Department's students in the Postgraduate Program (MSc), where some of the recommended textbooks and the theses of graduates are kept.

II.2 Regulation of the Operation of the Postgraduate Program

Article 1. Subject and Purpose of the Postgraduate Program

1.1 Purpose of the Postgraduate Program The program aims to:

• Enchance knowledge in the fields of economic analysis and related economic and business policies.

• Provide comprehensive knowledge of contemporary analytical/quantitative methods and qualitative approaches necessary for taking economic and business decisions by professionals in the public and private sectors.
• Prepare students for studies at the doctoral level.

1.2 Subjects of the Postgraduate Program The Postgraduate Program of the Department of Economic Sciences at the University of Thessaly in "Applied Economics" is designed for graduates of Economics Departments and other specialties in the fields of (a) Business Analytics, (b) Financial Technology and Investments, (c) Private Organizations Management, (d) Public Organizations, and (e) Defense Economics and International Relations. The Postgraduate Degree (MSc) leads, according to the procedures defined by the law, to the recognition of professional rights beyond those provided by the undergraduate degree.

1.3 Title of Studies The Postgraduate Program awards a Postgraduate Degree (MSc) with the title "Applied Economics" (MSc in Applied Economics) in the following specializations: A) Applied Economics in Business Analytics B) Applied Economics in Financial Technology and Investments C) Applied Economics in the Management of Public Organizations and Local Government D) Applied Economics in AdministrationPrivate Organizations Management E) Applied Economics in Defense Economics and International Relations

Article 2. Master of Science Degree (MSc)

2.1 Duration

The duration of the MSc program leading to a Master of Science Degree (MSc) is three semesters, with the last semester devoted to the completion of the thesis. Alternatively, students can choose to attend and successfully complete four (4) courses during the third semester (Winter Semester), including an additional course in Research Methods, instead of the thesis. The four courses (4) chosen by the student vary depending on the specialization selected, unlike the Research Methods course, which is common to all five specializations.

The duration of studies for each student cannot exceed the time period stipulated by the provisions of the law, as they have been formulated and are in force. In very special cases, the Department may grant a one-year suspension of studies. The semesters of suspension of student status are not counted towards the maximum duration of regular enrollment.

2.2 Requirements for Obtaining the Master of Science Degree

To obtain the MSc degree, a student must accumulate 90 ECTS credits, which must be acquired over a minimum of three semesters. Teaching and examinations in the MSc program are conducted in Greek, while the bibliography and literature cover both Greek and international sources. In special cases, such as the invitation of a foreign lecturer from a foreign university, instruction may be conducted in English.

2.1 Administrative Bodies of the MSc Program

The competent bodies for the organization and overall operation of the MSc program are as follows:

1. The Senate of the University of Thessaly, which is responsible for all administrative or organizational matters related to postgraduate studies that are not specifically assigned to other bodies by law.
2. The Department Assembly of the Department of Economics, which is responsible for the organization, administration, and management of the MSc program, including:
    - Proposing to the Senate the establishment or modification of the decision to establish the MSc program, as well as the extension of its duration.
    - Constituting Committees for the evaluation of applications from prospective postgraduate students and approving their enrollment in the MSc program.
    - Assigning teaching duties to the instructors of the MSc program.
    - Appointing the Director of the MSc program.
    - Appointing members of the Study Committees.
    - Proposing to the Senate the members of the Interdepartmental MSc Program Study Program Committee.

- Establishing examination committees for the evaluation of postgraduate students' theses and appointing supervisors for each thesis.
- Certifying the successful completion of the program in order to award the MSc degree.
- Approving the budget of the MSc program following the recommendation of the Coordinating Committee (CC).
- Exercising any other authority specified by individual provisions.

3. The Coordinating Committee (CC) of the MSc program, composed of the Director of the MSc program and four (4) members of the teaching staff of the Department of Animal Production Science with relevant expertise, appointed by the Department Assembly. The term of office for CC members is two years and can be renewed without limitation. The CC is responsible for monitoring and coordinating the program's operation, including:
    - Drafting the initial annual budget of the MSc program and any amendments, provided the program has resources, in accordance with Article 84.
    - Preparing the program's financial report and recommending its approval to the Department Assembly.
    - Approving the program's expenditures.
    - Approving scholarships, whether remunerative or not, as stipulated in the decision establishing the MSc program and the Regulations for Postgraduate and Doctoral Studies.
    - Recommending to the Department Assembly the allocation of teaching duties and the assignment of teaching duties to categories of MSc instructors.
    - Recommending to the Department Assembly the invitation of Visiting Professors to cover teaching needs of the MSc program.
    - Drafting a plan for modifying the curriculum, which is submitted to the Department Assembly.
    - Recommending to the Department Assembly the redistribution of courses among academic semesters and issues related to the program's qualitative improvement.

4. The Director of the Postgraduate Studies Program (MSc) is selected from the faculty members of the Department, with preference given to the rank of Professor or Associate Professor, and is appointed by a decision of the Department Assembly for a two-year term, which can be renewed without limitation. The Director chairs the CC, submits program organization and operation matters to the Department Assembly, and is also the Scientific Supervisor of the program in accordance with the of Law . The Director exercises corresponding responsibilities, monitors the implementation of decisions made by the program's bodies and the Internal Regulations for Postgraduate and Doctoral Programs of Study, as well as the execution of the MSc program's budget.

Members of the above-mentioned Committees are not entitled to additional compensation or remuneration for their participation.

Committees

For the operation of the MSc program, the Department Assembly may establish the following Committees, each with a two-year term:

A. Postgraduate Student Selection Committee B. Financial Management Committee

The Department Assembly may establish additional Committees as deemed necessary. All proposals or decisions of the Committees are approved by the Department Assembly.

The duties of the Postgraduate Student Selection Committee include:

- Verification and evaluation of all submitted documents.
- Ensuring the relevance of the bachelor's degree to the subject matter of the MSc program.
- Assessing English language proficiency, demonstrated by the candidate holding a language proficiency certificate of at least level B1, according to the Common European Framework of Reference for Languages. This requirement is waived for candidates who hold a

bachelor's or master's degree from an English-speaking university or come from a country with English as an official language.

The Financial Management Committee's responsibilities include:

- Making recommendations to the Program Study Committee for setting the tuition fees, where applicable, with documentation.
- Monitoring, examining, and continuously updating the finances of the MSc program.
- Preparing and presenting the financial plan and report of the MSc program to the Department Assembly and posting it on the MSc program's website.

Article 3 - Admission to the Postgraduate Program - Selection Procedures - Free Tuition:

3.1 Applications

The evaluation of candidates for the Postgraduate Program is based on the overall score (on a scale of 1-100) in the following criteria: Selection Criteria Points

	Selection Criteria Points	
1	Undergraduate degree grade	20
2	Proficiency in foreign language(s)	10
3	Computer literacy	5
4	Relevance of undergraduate studies to the MSc program	25
5	Relevant professional experience	20
6	Interview	20
	Total	100

All candidates must submit two recommendation letters along with their application. For international applicants, a sufficient command of the Greek language is required.

3.2 Selection Procedure

The call for applications to the Postgraduate Program is published at the beginning of the spring semester and includes all information regarding the application process, required qualifications, necessary documents, and selection criteria. Applications are considered valid if submitted in full and within the specified deadline, as outlined in the program's website. Applicants should indicate the specific direction they wish to pursue within their applications. The submission deadline, required documents, and other relevant details are announced at the Postgraduate Program's offices and on its website. Within the application deadline, interested candidates electronically submit the required documents to the Postgraduate Program's Secretariat as detailed on the program's website. The maximum number of admitted students is set at ninety (90) for the total of five program directions and may change following a decision by the Specialization Committee and the Senate. The minimum number of students per direction is six (6), while the maximum is thirty (30). The responsibility for admitting students to the Postgraduate Program lies with the Assembly of the Department following the recommendation of the Coordination Committee. The evaluation of candidates who have timely submitted all required documents within the specified deadlines is conducted in two phases:

• The first phase involves the formal examination by the Coordination Committee of the qualifications of candidates who have submitted all required documents on time.

• In the second phase, candidates successful in the first phase participate in the interview process.

Based on the examination of formal and substantive qualifications, as well as the results of the interviews, the Committee makes a list of successful and alternate candidates for the Postgraduate Program. The student registration process for the Postgraduate Program is completed within ten (10) days after the start of the first (winter) semester. During their registration, students who had not completed their undergraduate studies at the time of application must provide a copy of their degree certificate or a certificate of

completion of studies from the Secretariat of their undergraduate department.

3.3 Tuition Fees

The annual operating cost of the Postgraduate Program is covered by research programs, funding from ELKE, and tuition fees, the amount of which may be adjusted following a decision by the Specialization Committee as specified by law. For the participation in the Postgraduate Program, those obligated to pay tuition fees deposit them into a program bank account as follows: • 33% of the amount upon completing their registration in the Program. • 33% of the amount by the end of the winter semester. • 33% of the amount by the end of the spring semester. Late payment of the fee installment, beyond 30 days, will result in a restriction on students' participation in exams. In the case of discontinuation of studies, fees that have already been paid will not be refunded.

3.4 Free Tuition

Enrolled students of the Postgraduate Program may be eligible for free tuition, in accordance with the current legislation. The application for free tuition is submitted after the completion of the admission process to the Program, within a timeframe determined by the Coordination Committee of the Postgraduate Program.

Article 4. Program

4.1 Master's Degree Program Curriculum

The curriculum for each semester is structured as follows (see Appendix):

A' Semester 30 Credit Units (ECTS) Four compulsory courses per specialization and a common mandatory seminar "Research Methodology I" for all specializations.

B' Semester 30 Credit Units (ECTS) Three compulsory courses per specialization, one elective course, and the common mandatory seminar "Research Methodology II" for all specializations.

C' Semester 30 Credit Units (ECTS) Master's Thesis

Alternatively, instead of completing a master's thesis:

C' Semester 30 Credit Units (ECTS) Four compulsory courses per specialization and the common mandatory seminar "Research Methodology III" for all specializations.

4.2 Instructors and Assignment of Teaching in the Master's Degree Program

Teaching in the Master's Degree Program (MSc) will be undertaken by instructors who are members of the Teaching and Research Staff (D.E.P.), the Special Teaching and Research Staff (E.E.P.), the Special Scientific Teaching and Research Staff (E.D.I.P.), and the Special Technical Laboratory Teaching and Research Staff (E.T.E.P.) of the Department of Economic Sciences, as well as retired members of the D.E.P. of the Department of Economic Sciences, in accordance with the current provisions of the Law

All instructors must hold a doctoral degree, unless their subject matter expertise is exceptional and undisputed, for which the completion of a doctoral dissertation is not feasible or customary.

By reasoned decision of the Department of Economic Sciences Assembly, in cases where the teaching staff of the categories mentioned above is insufficient, teaching work may be assigned to members of the D.E.P. of other departments of the same institution or to invite members of the D.E.P. of other higher education institutions or researchers from research centers under Article 13A of Law 4310/2014 (Government Gazette 258/A).

Furthermore, the Department of Economic Sciences Assembly, by its decision, taking into account the recommendation of the MSc Director, may invite distinguished scientists holding the position or qualifications of a

professor or researcher in a research center, scientists of recognized prestige with specialized knowledge or relevant experience in the subject matter of the MSc, either from Greece or abroad, in accordance with the provisions of of the Law.

By decision of the Department's Assembly, supplementary teaching work may be assigned to doctoral candidates of the Department or the School, under the supervision of an MSc instructor.

In any case, the assignment of teaching for courses, seminars, and exercises of the MSc is decided by the Department of Economic Sciences Assembly, following a recommendation from the Coordination Committee.

The obligations of the instructors include:

- Adhering to the course schedule.
- Writing a detailed course description, including objectives, weekly class schedule, recommended bibliography/articles, and course requirements (practical exercises, presentations, etc.).
- Providing lecture notes and/or maintaining a folder with the recommended bibliography.
- Keeping a student attendance record.
- Holding weekly office hours for meetings with MSc students.
- Conducting examinations and selecting topics.
- Grading written examinations and submitting grades within 20 days of the examination date.
- Supervising up to 6 master's theses annually.

4.3 Compensation for Teaching

All categories of instructors may be remunerated from the resources of the MSc program. Payment of remuneration or any other compensation from the state budget or the public investment program is not allowed. The amount of remuneration for each instructor is determined by the competent body of the MSc program upon assignment of the teaching work. Specifically, instructors who hold the status of D.E.P. members may receive additional compensation for work offered to the MSc, provided they fulfill

their minimum legal obligations, as specified in the Law. The last paragraph applies proportionally to members of E.E.P., E.D.I.P., and E.T.E.P., provided they fulfill their minimum legal obligations. Details on the conclusion of relevant remuneration contracts for D.E.P. members are determined by the Research Committee.

4.4 Supervision

For each postgraduate student, the Program Committee appoints a Faculty Member of the MSc program as an Advisor, who is responsible for monitoring and overseeing the overall progress of the postgraduate student.

4.5 Assessment

The assessment and grading of each course are the sole responsibility of the instructor and are conducted independently of other courses. Assessment criteria are clearly defined and are provided in the course information document.

To be eligible to participate in the examinations, students must have paid the tuition fees (unless exempted). Part or all of the student assessment may involve assignments related to the respective course. Successful completion of each course requires a final grade equal to or greater than five (5).

Students who fail in a course during the regular academic year are entitled to re-take the examination in September for up to 4 courses in total. Students who fail more than 4 courses are subject to academic suspension without a refund of the tuition fees paid.

Students who fail in the September examination for 3 or fewer of their re-examination courses have the option to re-attend these courses in the following academic year. In case of a repeated failure in at least one of the re-attended courses in the following academic year, the matter will be examined on a case-by-case basis by the Program Committee, which will assess both the substantial and formal aspects of the problem. The Committee may decide to allow the student to re-attend the course(s) in the

next academic year or even expel the student from the Program without a refund of the tuition fees paid.

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4.6 Master's Thesis

Within the framework of the requirements for obtaining the Master's Degree, every postgraduate student has the option, during the third semester of study, to undertake a master's thesis on a topic related to one of the program's courses. The thesis should have a clearly defined research character, and its commencement cannot take place before the end of the second semester of study. For each postgraduate student who chooses to undertake a master's thesis, a Supervisor is appointed by the Program's Steering Committee upon the recommendation of the Program's Committee.

The right to supervise master's theses is granted to the instructors of paragraphs (a) to (d) of article 4 par. 2 of law 4957/2022, provided that they hold a doctoral degree. The TOE Assembly may decide to assign the supervision of master's theses to members of the Department's Academic Faculty, Special Teaching Staff, or Research Fellows who have not been involved in teaching in the MSc Program.

The instructors who have the right to supervise master's theses, in accordance with the current legislation, inform the Program Office in writing about the topics of the theses they propose. The number of master's theses that these instructors can supervise should not exceed six (6).

The supervisor has the scientific responsibility for the completion of the Master's Thesis and is appointed by the Steering Committee upon the request of the candidate. The proposal should include the suggested title of the thesis, the proposed supervisor, and a summary of the proposed work. The language of the thesis can be either Greek or English.

The guidelines for writing the master's thesis are posted on the MSc program's website.

The procedure for submitting the thesis for examination is as follows: After completion and written approval by the supervisor, the master's thesis is submitted in four copies to the Program Office by January 10th of the third semester of study or alternatively by May 31st of the same year.

For the examination of the Master's Thesis, a three-member examination committee is formed by the MSc Program's Steering Committee. The committee includes the supervisor and at least two (2) other members of the Academic Faculty or researchers with a PhD, who are involved in the MSc Program and have expertise in the same or related scientific field as the thesis topic. The Program Office is responsible for distributing three copies to the examining committee.

The presentation of the Master's Thesis is publicly defendedbefore the three-member examination committee, instructors, and students of the MSc Program. The date and place are determined by the Department's Assembly, following a proposal by the MSc Program Director. After approval by the committee, the thesis, in its final form, is submitted to the Program Office in both printed and electronic format, stored in the MSc Program's library, and is uploaded to the Institutional Repository of the University of Thessaly at http://ir.lib.uth.gr and the MSc Program's website.

In exceptional cases, if there is an objective impossibility or a compelling reason (such as illness, absence abroad, etc.), the supervisor or a member of the examination committee may be replaced, following a decision by the MSc Program Director and the consent of the Program's Steering Committee.

To successfully complete the requirements of the postgraduate student leading to the acquisition of the Master's Degree, they must have received a grade equal to or greater than FIVE (5) in all eight (8) courses from the first two semesters of study, including the two (2) research methodology seminars, as well as in the master's thesis, or, if selected, in the four (4) compulsory courses, including the "Research Methodology III" seminar. The Master's Degree grade is calculated as the weighted average of the grades of all required courses and the master's thesis, with the weighting factor for each grade being determined by the ECTS credits of the corresponding

course, i.e., seven (7) ECTS for each course and two (2) ECTS for each compulsory research methodology seminar, and thirty (30) ECTS for the master's thesis.

Article 5. Financial Management and Revenue Allocation

5.1 Resources The resources of the Postgraduate Program (PMS) will come from:

- Grants, resources from research programs, income from the Research Fund, and tuition fees, the amount of which is adjusted after a decision by the Board of Trustees (ΣΤ) as required by law. The PMS will only accept grants with the unanimous consent of the Assembly of the Department.

5.2 Management

The Coordinating Committee prepares the initial annual budget of the PMS and any modifications to it, recommending its approval to the Research Committee of the Special Research Fund (Ε.Λ.Κ.Ε.) of the University of Thessaloniki (Π.Θ.). The Department Assembly or the Curriculum Committee approves the PMS financial report upon recommendation by the Coordinating Committee. The Director of the PMS is the Scientific Head of the program and carries out the corresponding responsibilities according to the Law . Specifically, the Director of the PMS is responsible for monitoring the execution of the budget, issuing payment orders for related expenses, ensuring the appropriateness and eligibility of expenses, and submitting the required expense documentation to Ε.Λ.Κ.Ε. for auditing, clearance, and payment. If an expense is not provided for in the project's budget, a budget revision is required, along with a decision by the Research Committee following a documented request from the Director and approval by the Department Assembly. The remuneration of a teacher in a PMS is made after the submission of relevant certification to Ε.Λ.Κ.Ε. by the department's president at the end of each semester, and any other provisions are determined by the Research Committee. For all financial management processes of funded PMS programs, the provisions of Law 4957/2022 are uniformly applied from the academic year 2023-2024.

5.3 Expenses

Expenses cover the Operating Costs of the Program related to:

1. Equipment and software expenses.
2. Scholarships for postgraduate students.
3. Consumables.
4. Travel expenses for PMS instructors.
5. Travel expenses for PMS students for educational purposes.
6. Compensation for regular teaching staff of higher education institutions and research centers and institutes participating in the organization of the PMS.
7. Compensation for adjunct teaching staff of higher education institutions participating in the organization of the PMS.
8. Administrative and technical support fees.
9. Other expenses, such as publicity-promotion expenses, purchase of educational material, conference organization expenses, fieldwork expenses.
10. Operating Expenses of the Institution (excluding Donations, Endowments, or Grants for specific purposes, as well as government subsidies).

Article 6. Enrollment

6.1 Course Attendance

Each cycle (duration) of the PMS leading to a Master's Degree (ΔΜΣ) lasts for three semesters for full-time enrollment, with the last semester dedicated to the completion of the thesis. Attendance of courses is mandatory. The upper limit for allowable absences for each course is set at 30%. Course enrollment must be declared for each semester and violation of the registration deadline results in the loss of the opportunity to attend the current semester. In such cases, continuing enrollment requires a decision by the Department Assembly following a proposal by the Coordinating Committee. In exceptional cases, an extension of studies for up to three semesters can be granted upon a reasoned decision by the Department Assembly.

6.2 Suspension of Studies

Graduate students can be granted temporary suspension of studies, not exceeding two (2) consecutive semesters, upon submission of a relevant application. During the suspension, graduate students lose their student status, and the time of suspension is not counted towards the maximum duration of regular enrollment.

6.3 Part-time Studies

Part-time enrollment in the Program for six (6) semesters without additional financial burden is possible. Part-time students choose two of the recommended courses to attend per semester before the start of classes. Part-time students must declare their preference at the beginning of their application to the PMS, provided that they are unable to meet the minimum requirements of the "full" enrollment program for reasons such as illness, work commitments (over 20 hours per week), serious family issues, military service, force majeure, etc., as determined and decided by the Department Assembly. The duration of part-time enrollment cannot exceed twice the duration of regular enrollment.

6.4 Technical Infrastructure

The Program will operate at the facilities of the Department of Economics of the University of Thessaly. The Department of Economics has its own facilities with a total area of 4800 square meters. Specifically, it includes two lecture theatres with a total capacity of 190 and 132 people, 7 classrooms, 3 research laboratories, and a library-reading room for the students of the MSc program. Some of the lectures can be conducted remotely and/or in a hybrid format, in accordance with the law. The Department of Economics has the necessary equipment for remote education.

The classrooms used for MSc program courses are: A1, A2, B1, B20.

6.5 Completion of Studies

A graduate student is considered a holder of a Master's degree from the moment they have fully completed their obligations. To participate in the graduation ceremony, the student must have:

- Successfully completed the study program as outlined in the Curriculum.
- Submitted their Academic ID.
- No outstanding issues with the library.
- Settled any financial obligations.

The graduation ceremony for MSc students is conducted by the Academic Authorities, in the presence of the Director of the MSc Program and the Department Chair.

6.6 Institutional Repository

Approved Master's theses, after any necessary corrections proposed by the examination committees, are submitted by the candidates in two copies: one bound copy and one electronic copy. The Department's Secretariat does not complete the stages of awarding the corresponding academic title until it receives a certification of thesis submission from the University library. All these works are published in the institutional repository of the University: http://ir.lib.uth.gr/handle/11615/1.

6.7 Certificates

The format of the Master's Degree and the ceremony details are determined by the institution's regulations. For the format of the Diploma Supplement, the decision of the Senate of the University dated October 17, 2008, and the provisions of Ministerial Decision Φ5/89656/Β3/13-8-2007 apply.

6.8 Secretarial Support, Technical, and Financial Assistance

Administrative staff can be hired at the expense of the MSc program for secretarial support if the existing administrative staff is insufficient. The MSc program uses the facilities of the Department of Economics and other

University facilities if necessary for the smooth conduct of classes and other activities.

6.9 Scholarships In addition to the exemptions from tuition fees provided by law, the Master's Program offers scholarships to graduate students based on the program's financial capabilities, for each academic year. Scholarships are not granted if the graduate student is already receiving a scholarship from another source. Scholarships are not granted to students who have been admitted to the MSc program without the obligation to pay tuition fees or are on educational leave with pay.

6.10 MSc Program Website The official website of the MSc program - https://applied.econ.uth.gr/ is constantly updated and contains all the information and announcements of the program. It serves as the official information space for students.

Article 7. Quality Assurance

7.1 Intellectual Property and Plagiarism

The intellectual property rights of Master's Theses, patents, or commercial exploitation rights of the works are determined by relevant decisions of the Ethics Committee of the University of Thessaly. Any form of plagiarism in coursework, publications, or the writing of Master's Theses, as well as the invention of research data and any unscientific behavior in general, is prohibited. The Ethics Committee is responsible for informing students of the MSc program about these issues and imposing penalties when necessary. Detailed guidelines on this matter will be issued by the University's Ethics Committee. No Master's thesis is submitted for support unless it has been checked by the Central Library's plagiarism prevention service of the institution.

7.2 Research Ethics and Ethics Committee – Three-Member Internal Research Ethics and Ethics Committee

According to Law 4957/2022 Article 279, the Research Ethics and Ethics Committee may provide opinions on ethical and moral matters concerning

articles for publication in scientific journals or in-progress Master's Theses or doctoral dissertations. However, in matters related to confidentiality, respect for personal data, and other ethical and moral rules governing undergraduate dissertations, Master's Theses, and doctoral dissertations, each Department establishes a three-member Internal Research Ethics and Ethics Committee. Regarding the process, interested parties submit: 1) a request for the examination of the proposal, 2) a description of the research proposal, 3) research protocols, consent forms, and other necessary documents deemed necessary based on scientific fields. Templates for the relevant forms can be found on the University of Thessaly's website at: [link to templates]. After the proposal is reviewed, the Department Committee issues a Certificate of Approval for the undergraduate dissertation proposal, Master's thesis, or doctoral dissertation. In case of rejection of the application or disagreements among the Committee members, the matter is referred to the University of Thessaly's Research Ethics and Ethics Committee. The Certificates of Approval will be posted in the MOU.

7.3 Program Evaluation / Quality Assurance

The MSc program as a whole, as well as its individual courses, will be systematically evaluated according to the recommended procedures and criteria established by the Internal Quality Assurance System of the University of Thessaly, contributing to its continuous improvement.

Article 8. Transitional Provisions

Any issues arising in the future that are not covered by relevant legislation or the specific Regulation of Postgraduate Studies will be addressed through decisions of the TOE Assembly, following recommendations from the Program Director and the Coordinating Committee of the Program, and approval by the Senate of the University, with amendments to the Regulation and publication in the Government Gazette. Regular revision of this Internal Regulation of Postgraduate Studies may take place every two years.

II.3 Program and Detailed Course Descriptions

To obtain the MSc, students must accumulate 90 ECTS credits. The duration of the study program is three semesters for full-time enrollment or six semesters for part-time enrollment. The course program per semester is as follows:

1st Semester (30 ECTS Credits)

Four mandatory courses per specialization and the common mandatory seminar "Research Methodology I." Each course corresponds to 7 ECTS credits, while the two common mandatory ones correspond to 2 ECTS credits each.

2nd Semester (30 ECTS Credits)

Three mandatory courses per specialization, one elective course, and the common mandatory seminar “Research Methodology II.” Each course corresponds to 7 ECTS credits, while the two common mandatory ones correspond to 2 ECTS credits each.

3rd Semester (30 ECTS Credits)

Dissertation **or**, alternatively, the completion of four mandatory courses per specialization and the common mandatory seminar "Research Methodology III." Each course corresponds to 7 ECTS credits, while the two common mandatory ones correspond to 2 ECTS credits each.

Attendance of courses is mandatory.

MSC APPLIED ECONOMICS

Business Analytics	Financial Technology & Investments	Private organizations Management	Public and Local Government Organizations Management	Defence Economics and International Relations
1st Semester				
Data Analytics	Data Analytics	Business Strategy	Public Organizations Management	Public Organizations Management
Business Strategy	Financial Management	Financial Management	Public Economics	Public Economics
Quantitative Methods for making Business Decisions	Quantitative Methods for making Business Decisions	Technology Strategy	Spatial Development and Strategic Planning	Defence Economics
Forecasting Methods	Economics of Money and Banking	Applied Economics Analysis	Applied Economics Analysis	International Relations and Strategy
Research Methodology Seminar I				
2nd Semester				
Supply Chain and Inventories	Financial Technology and Transactions	Total Quality Management	Total Quality Management	Topics in the Economics and Management of Defence and Security
Money and Capital Markets	Money and Capital Markets	Marketing Management	Administrative Law	Iternational Political Economy
Modelling in Business Analytics	Financial Forecasts	Organizational Behaviour and human Resource Management	European Institutions	Space Economics
Selective Module	Selective Module	Selective Module	Selective Module	Selective Module
Research Methods Seminar II				

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Selective Modules – one (1) from the following				
Financial Accounting	Financial Accounting	Labour Relations	Labour Relations	Labour Relations
Measurement of Productivity and Efficiency	Measurement of Productivity and Efficiency	Measurement of Productivity and Efficiency	Measurement of Productivity and Efficiency	Measurement of Productivity and Efficiency
System Dynamics	Project Management	System Dynamics	Real Estate Market	Project Management
3rd Semester				
Dissertation	Dissertation	Dissertation	Dissertation	Dissertation
Alternative, instead dissertation the following four (4) modules and the Seminar				
Financial Management	Business Strategy	Forecasting Methods	Financial Management	Financial Management
Technology strategy	Technology Strategy	Quantitative Methods for Decision Making	International relations and Strategy	Technology Strategy
Economics of Money and Banking	Spatial Development and Strategic Planning	Spatial Development and Strategic Planning	Technology Strategy	Data Analytics
Applied Economics Analysis	Applied Economics Analysis	Economics of Money and Banking	Business Strategy	Applied Economics Analysis
Research Methodology Seminar III				

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The MSc in Applied Economics with Specializations has multiple objectives, as presented and analyzed in detail below. As a result of successfully completing the MSc, graduates will be able to:

Learning outcomes related to "Financial Technology and Investments" according to the National Qualifications Framework for Higher Education:

- Deepen theoretical and technical knowledge in the banking and financial sector.
- Provide specialized knowledge about the operations of banks and capital markets.
- Understand modern banking services, financial intermediation, the role of derivatives markets in managing banking risks, modern accounting standards, and the conduct of monetary policy by central banks.
- Familiarize students with modern technologies and available tools resulting from the digitization of the economy for efficient data processing and analysis, and the derivation of secure conclusions regarding the sustainability and financial health of businesses.

Learning outcomes related to "Business Analytics" according to the National Qualifications Framework for Higher Education:

- Apply techniques for acquiring and analyzing information to support decision-making, problem-solving, and policy formulation in organizations and businesses.
- Analyze and evaluate information for making operational decisions.
- Analyze statistical data.
- Ability to define problems, identify alternatives, and establish criteria for evaluating solutions.
- Familiarity with modern technologies and available tools for data management, processing, and analysis.
- In-depth understanding of financial markets and capital markets to provide a more comprehensive understanding of how markets operate and how investment strategies are developed.

Learning outcomes related to "Private Organizations Management " according to the National Qualifications Framework for Higher Education:

- Acquire knowledge and skills required by modern organizations, private companies, public sector entities, and non-profit organizations for effective and efficient operation.
- Provide specialized knowledge in scientific management, allowing students to focus on various specific subjects according to their interests or employment prospects.
- Accurate assessment of problems that arise in the contemporary business and economic environment and their effective resolution.
- Application of quality control tools and techniques, as well as quality protocol organization, design, and management.
- Acquisition of specialized knowledge to secure a satisfactory position in the job market.
- Improved ability to work effectively in teams.

Learning outcomes related to "Public Administration and Local Government" according to the National Qualifications Framework for Higher Education:

- Accurate assessment of problems that arise in the contemporary business and economic environment and their effective resolution.
- Acquisition of knowledge and skills required by modern organizations, private companies, public sector entities, central and local government, and self-government entities for their effective and efficient operation.
- In-depth understanding of the operation of organizations in the modern dynamic environment.
- Provision of specialized knowledge in scientific management, allowing students to focus on various specific subjects according to their interests or employment prospects.
- Optimization of individual performance and career in organizations where students work or intend to join.
- Enhanced ability to work effectively in teams.
- Familiarity with the use of modern technologies.
- Adherence to specifications through total quality management techniques.
- Application of development policies and actions focusing on local specificity, and strategy.
- Understanding of spatial configuration and economic development at various spatial scales.

Learning outcomes related to "Economics of Defense and International Relations" according to the National Qualifications Framework for Higher Education:

- Specialization in the tools of economic science in the field of national defense.
- In-depth understanding of the reciprocal relationship between the national economy and national defense.
- Knowledge of the use of applied tools that can be utilized either in their professional career or as a background for further scientific specialization in the field of national defense and security.
- Deeper understanding of the relationship between the soft and hard dimensions of state power in the context of international competition.

II.3.1 BUSINESS ANALYTICS

1st Semester

MSc Applied Economics Specialization : Business Analytics		
MODULES	**TYPE OF MODULE**	**ECTS**
Data Analytics	COMPULSORY	7
Business Strategy	COMPULSORY	7
Quantitative Methods for taking Business Decisions	COMPULSORY	7
Forecasting Methods	COMPULSORY	7
Research Methodology Seminar I	COMPULSORY	2

DATA ANALYTICS

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	Data Analytics		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
Lectures - exercises - practices		3 HOURS	7
TYPE OF MODULE	COMPULSORY		
PREREQUISITE MODULES:	COMPUTER SCIENCE II		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		
MODULE'S URL	eclass.uth.gr		
2. LEARNING OUTCOMES			
Learning Outcomes			
After the successful completion of the course, the student should be able to:			

• Understand the basic algorithms used in Data Analytics. • Utilize the features of the Python programming language and the packages of the R statistical programming language for data analysis. • Business analytics applications. • Comprehend the fundamental methods of handling Big Data.
General Competencies
The course "Data Analytics" aims to familiarize students with modern technologies and available tools for data management, processing, and analysis. Emphasis is placed on business applications of Data Analytics. The focus of the course is twofold. Students are taught on a theoretical level the basic algorithms of Data Analytics, while simultaneously using them in various examples, developing applications in Python and R.
3.MODULE CONTENT
Introduction to Data Analytics Applications of Data Analytics in Economics and Finance Predictive Modeling: Correlation and Segmentation. Correlation Analysis and Regression Analysis (predictive analytics) Model Adaptation to Data. The problem of Overfitting and techniques to address it. Similarity, Neighbors, and Clusters. Visualization of Results. Artificial Intelligence and Machine Learning. Big Data and their handling tools. Practical Examples in Python and R.
4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Onsite / Remote / Hybrid
USE OF INFORMATION AND COMMUNICATION	Support of the learning process through the eClass platform the unified e-learning system of the University of Thessaly which is supported by

<table>
<tr><td>TECHNOLOGIES</td><td>the Library and Information Centre and MSTEAMS platform for education.</td></tr>
<tr><td>ORGANISATION OF TEACHING</td><td>More specifically, the workload of the module is analyzed as follows:
<table>
<tr><th>Type~~Είδος~~</th><th>Description~~Περιγραφή~~</th><th>WORKLOAD (HOURS)</th></tr>
<tr><td></td><td>Lectures</td><td>39</td></tr>
<tr><td></td><td>Study at home</td><td>80</td></tr>
<tr><td></td><td>Completion of assignments</td><td>50</td></tr>
<tr><td></td><td>Preparation for the final exam</td><td>39</td></tr>
<tr><td></td><td>Final Examination</td><td>2</td></tr>
<tr><td></td><td>Total</td><td>210</td></tr>
</table></td></tr>
<tr><td>MODULE ASSESSMENT</td><td>Evaluation Method:
- Individual Programming Exercises: 30%
- Written Examination: 70%</td></tr>
<tr><td colspan="2">5. RECOMMENDED BIBLIOGRAGHY</td></tr>
<tr><td>Suggested Bibliography:</td><td>

Foster Provost and Tom Fawcett, "Data Science for Business", Edited by Vasilis Verykios, Klidarithmos Publications.
Paul Deitel and Harvey Deitel, "Introduction to Python for Computer Science and Data", M. Gyuras Publishing.
Dimitrios Karolidis, "Learn Python Easily", Avakas Publishing.
Gareth James, Daniela Witten, Trevor Hastie, Robert Tibshirani (2021). "An Introduction to Statistical Learning with Applications in R". ISBN: 978-1-0716-1417-4 Springer. (Free e-book, Access provided by HEAL-Link Greece - University of Thessaly)
Karagrigoriou, A., & Kalligeris, E. (2023). Linear Models and

</td></tr>
</table>

	Design & Analysis of Experiments with applications in R and Minitab. Kallipos, Open Academic Editions. https://dx.doi.org/10.57713/kallipos-70

BUSINESS STRATEGY

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	BUSINESS STRATEGY		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
		3 HOURS	7
TYPE OF MODULE	COMPULSORY		
PROREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		
MODULE'S URL	https://eclass.uth.gr/courses/ECON_P_147/		

2. LEARNING OUTCOMES

Learning Outcomes

Upon completion of the module, students should be able to:

- Understand the basic principles of Strategic Business Management and their impact on business operations
- Plan and evaluate the operational, competitive and corporate strategy of a firm
- Recognize and evaluate the strategic movements of modern businesses, proposing possible improvements.
- Interpret the effect of external factors on business operations
- Investigate and plan the internationalization of a firm

General Competencies

Upon successful completion of the module, students will develop and cultivate basic professional and social skills, namely:

- Search, analysis and synthesis of data and information, using necessary technologies
- Adaptation to new situations
- Decision making
- Autonomous work
- Teamwork
- Work in an international environment Respect for diversity and multiculturalism
- Exercise criticism and self-criticism
- Promotion of free, creative and inductive thinking

3.MODULE CONTENT

• Strategic analysis of the external environment: analysis of the macro (PEST-DG) and micro environment (Porter's 5 forces) of the business.

• Corporate mission, vision, strategic goals, strategic considerations.

• Business strategy direction: stability, growth, rescue-turnaround.

• Strategies for achieving competitive advantage: cost leadership, differentiation, focus.

• Internationalization strategies of the company: alliances, joint ventures, acquisitions, exports,

oligopolistic reaction theories, selective paradigm theory (Dunning).

• Ways to implement strategy: Acquisitions, Mergers and Strategic Alliances: Analyzing, deciding and ensuring the success of strategic development through acquisitions, mergers and strategic alliances.

• The technological strategy, internally and externally.

• Strategy evaluation and selection: Rumlet's model, acceptability analysis, feasibility analysis, balanced scorecards analysis. Strategy implementation.

• Portfolio techniques for making strategic decisions: experience curve, BCG matrix, GE matrix, Hofer's product/market evolution matrix, life cycle matrix, portfolio cube, risk cube.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Mixed
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Learning process support through the e-class online platform. Use email, MS TEAMS
ORGANISATION OF TEACHING	More specifically, the workload of the module is analyzed as follows:

Type ~~Είδος~~	Description ~~Περιγραφή~~	WORKLOAD ~~Φ~~ (HOURS)
	Lectures	39
	Study at home	90
	Completion of assignments	49
	Preparation for the final exam	30
	Final Examination	2
	Total	210

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MODULE ASSESSMENT	Written exam and group assignments
5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	Textbooks in Greek • Παπαδάκης Β. (2016), *Στρατηγική των Επιχειρήσεων: Ελληνική και Διεθνής Εμπειρία*, Τόμος Α, 7η εκδ., Εκδόσεις Μπένου: Αθήνα • Senior B., 2017. Οργανωσιακή Αλλαγή. Εκδόσεις Broken Hill, Αθήνα. Academic journals (in alphabetical order) • Academy of Management Executive • Harvard Business Review • Journal of Business Research • Journal of International Business Studies (AIBA) • Long Range Planning (EIBA) • Strategic Management Journal (SMS)

QUANTITATIVE METHODS FOR MAKING BUSINESS DECISIONS

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	Quantitative Methods for Making Business Decisions		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
Lectures – Solutions of Examples and Problems – Use of EXCEL and MINITAB (Statistical Package)	3 HOURS	7

TYPE OF MODULE	COMPULSORY
PREREQUISITE MODULES:	NO
LANGUAGE OF TEACHING AND TESTING:	GREEK
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO
MODULE'S URL	https://eclass.uth.gr/modules/document/?course=ECON_P_143
2. LEARNING OUTCOMES	
Learning Outcomes	

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

(a) Integrate additional information collected from sampling surveys into the decision-making processes, thus proposing improved decisions regarding the operational problem under consideration and determining at the same time the monetary value of the additional information.

(b) Distinguish between nominal and effective interest rates in compounding, determine the future and present value of an annuity, and construct tables showing (a) Schedule of sinking funds and (b) loans amortization schedule.

(c) Construct linear programming models for problems referring to product selection, identification of transport/transhipment networks, investment portfolio planning and selection, and financial planning, solve these models using SOLVER of EXCEL, and perform the necessary analysis for writing the appropriate management report at a consulting level.
(d) Construct and solve discrete event simulation models for service systems by defining the logical/physical conditions which determine the time evolution of the system, identifying category "B" and "C" activities, and generating artificial observations of activities duration by generating random numbers from statistical probability distributions.

General Competencies

Postgraduate students will acquire the following general competencies:

(a) Understand the necessity of using quantitative methods for decision-making processes in businesses and organizations.

(b) Understand the concepts of time value of money and the effective management of funds.

(c) Understand the processes of constructing, solving, and analyzing mathematical models describing quasi-real operational and financial decision-making problems.

(d) Understand capabilities, comparative advantages, and conditions/limitations of using the proper quantitative method according to the nature of the operational/financial problem and the decision to be taken.

3.MODULE CONTENT

PRIOR – POSTERIOR ANALYSIS IN DECISION MAKING
Payoff tables, Decision making criteria under risk conditions, Applications of the maximum expected payoff and the minimum expected opportunity losses criteria, Prior analysis and expected value of perfect information, Law of total probability and the Bayes theorem, Types of additional information collected from sampling surveys, Posterior analysis using the Binomial distribution, the Poisson

distribution, and the Normal distribution, Posterior expected value of perfect information, Expected value of sample information.

FINANCIAL MATHEMATICS

Time value of money and the interest rate, Compound interest, Equivalence of amounts, Future (Maturity) value of an amount, Present value of a future amount and the discount factor, Determination of time and interest rate in compounding, Nominal and Effective interest rates, Ordinary annuities and Annuities due, Term of an annuity, Payment period, Future value of an annuity and determination of the payment amount, Schedule of sinking funds, Present value of an annuity and determination of the annuity term, Lump sum payment of loans, Amortizing loans and loans amortization schedule.

LINEAR PROGRAMMING

The concepts of activity, limited resources, and objective function in operational/financial linear programming problems, Process of formulating a linear programming model – determination of decision variables – construction of the objective function and constraints of the problem, Entering the linear programming model into EXCEL, Solve the problem using SOLVER, Optimal solution and sensitivity analysis regarding changes (a) in the coefficients of variables in the objective function and (b) in the quantities on the right hand-side of constraints, Applications to problems referring to product selection, identification of transport/transhipment networks, investment portfolio design and selection, and financial planning.

DISCRETE EVENT COMPUTER SIMULATION IN SERVICE SYSTEMS

Forms and examples of service systems – general notation, Arrival/service distributions and the Poisson law, Operational factors for service systems, Fitting the Poisson distribution to empirical arrival/service distributions, Discrete event simulation principles, Simulation of the M/M/1:GD/∞/∞ system, Generation of random numbers from probability distributions using EXCEL and MINITAB, Table of the system time evolution, Estimation of average waiting times in the queue and in the system.

4. TEACHING AND LEARNING METHODS EVALUATION	
TEACHING METHOD	Post graduate students will attend lectures either by face-to-face meetings or by using synchronous distance education methods
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	The learning process is supported through the use of (a) the electronic platform e-class, the institutional email, and the online classroom of the course on the MS-TEAMS platform, and (b) Microsoft EXCEL and MINITAB (statistical package).
ORGANISATION OF	The lectures are delivered in the classrooms of the Department of Economics through the use of Microsoft Office 365 tools (Word, EXCEL,

TEACHING

Power-Point). Before each lecture, slides and supporting material have already been posted on the course electronic platform "e-class", so that students can have access to them during the lecture. The existing technological equipment of the above rooms also enables the use of an electronic whiteboard through a WACOM device, which allows writing in presentations and texts with storage capabilities of rich texts and presentations. The enriched texts containing comments on the lectures and solutions to exercises and problems are also posted in the e-class after the end of each lecture. This uploaded material on e-class includes also files containing additional problems and exercises that students are invited to solve in order to practice and understand the taught material. Solutions and comments on these problems are given either during lectures or during office hours announced by the teacher responsible (in special cases even via e-mail using students' institutional accounts)

More specifically, the workload of the module is analyzed as follows:

Type~~Είδος~~	Description~~Περιγραφή~~	WORKLOAD (HOURS)
	Lectures	39
	Study at home	110
	Completion of assignments	35
	Preparation for the final exam	24
	Final Examination	2
	Total	210

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MODULE ASSESSMENT

FIRST SEMESTER EXAMINATION PERIOD

Individual/group work: 30%

Written exam: 70%

REPEAT EXAMINATION

Written exam: 100%

5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	– Anderson, D.R., Sweeney, D.J., Williams, T.A., Martin, K., (2014), "*Management Science – Quantitative methods for Making Business Decisions*", *KRITIKI Publication.* – Efthymoglou, P., Eleftheriadis, I., (2017), "*Financial Mathematics and elements of Insurance Mathematics*", 4th Edition, BROKEN HILL PUBLISHERS LTD. – Prastakos, G., (2006), "*Management Science, Business Decision Making in the Information Society*", B΄ Edition, STAMOULIS Publication. – Taylor, B.W. (2018), "*Introduction to Management Science*", BROKEN HILL PUBLISHERS LTD.

FORECASTING METHODS

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		SEMESTER OF STUDY	A
MODULE TITLE	Forecasting Methods		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	ECTS
		3 HOURS	7
TYPE OF MODULE	COMPULSORY		
PROREQUISITE MODULES:	NO		

LANGUAGE OF TEACHING AND TESTING:	GREEK
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO
MODULE'S URL	eclass.uth.gr

2. LEARNING OUTCOMES

By attending and successfully completing the course, students will ideally be able to:

- understand and apply forecasting models as appropriate.
- The modelling of forecasting models and models of forecasting models, through which to aim to reproduce the mechanism by which the forecasting mechanism is reproduced.
- the mechanism by which observations of the data are generated.
- specify models.
- assess, test and evaluate forecasting models.
- analyse case studies and provide solutions to data problems.

General Competencies

- Search, analysis and synthesis of data and information, using the necessary technologies.
- Decision-making
- Autonomous work
- Group work
- Working in an interdisciplinary environment
- Project planning and management

3.MODULE CONTENT

1. Basic Concepts and Forecasting Models

- Introductory concepts in econometrics
- Importance of forecasting, forecasting categories, introduction to time series analysis
- Basic characteristics of time series (Trend, Seasonality, Series decomposition into components, Determinant and Stochastic Trend subtraction, Hodrick-Prescott (HP) filter)
- Two Basic Concepts: Stochastic Processes & Stationary Stochastic Processes
- Univariate Models (Long-term Persistence, Monadic Roots, ARMA(p,q) and ARIMA(p,d,q) models, Box Jenkins Methodology, Basic Control Framework, Spectral Density Function, Conditional Heteroscedasticity, Predictions with ARMA(p,q) and ARIMA(p,d,q) models

2. Advanced Forecasting Methods: Non-Random Models

- Non-Linear Time Series Models (ARCH-GARCH Type Models, Bi-linear Models, Auto-parallel Threshold Models, Smooth State Transition Models, Multiple State Models, Technical Neural Network Models)
- Non-Randomness Check of Time Series
- Evaluation of Non-Random Models
- Forecasting with Non-Random Models
- Non-linearity and Chaos
- Multivariate Models

2. Multivariate Models

- Vector Autoregressive Models (VAR), Estimation of VAR Models and Causality Tests, Forecasting with Vector Autoregressive Models (VAR), Cointegration between Two or Multiple Variables, Testing for Cointegration with Engle Granger and Residual Method, Checking Degree of Integration with Johansen's Method,
- Error Correction Models, Estimation of Error Correction Models (ECM), Cointegration in Multivariate Systems - VECM Models)
- Panel Time Series Models (Panel Data Modelling - Fixed Effects and Random Effects Models, Hausan Test, Unit Root Tests on Panel data, Cointegration on Panel data, Dynamic Cointegration Models on Panel Data, Estimation of Models on Panel Data, Heterogeneity of Slope Coefficients on Panel Data,
- Panel Vector Autoregressive Models (VAR))

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	In class
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Support of the learning process through the e-class platform. Use of email, MSTEAMS
ORGANISATION OF TEACHING	The delivery of the course takes place in the classrooms of the Department of Economics. Information material is distributed through the course page on the e-class. More specifically, the workload of the module is analyzed as follows:

Type~~Είδος~~	Description~~Περιγραφή~~	WORKLOAD (HOURS)
	Lectures	39
	Study at home	80
	Completion of assignments	50
	Preperation for the final exam	39

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	Final Examination 2 Total 210
MODULE ASSESSMENT	Students are assessed through a written examination which includes short answer questions and a set of three group projects. The final grade is determined as follows: Assignments (3 Group Assignments) 60% Final Examination 40% (3 groups of group work (3 groups)) 40% (3 groups) Total 100%
5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	Anagnostou, A. (2022). Classical & Modern Models of Time Series, Kallipos, Volume A. Open Academic Publications. Anagnostou, A. (2023). Classical & Modern Models of Chronological Series Volume B. Kallipos, Open Academic Publications. ¬ Demeli Sophia (2012), Modern Methods of Chronological Series Analysis, Kritiki Publications. Katos A. V. (2004). Econometrics: theory and applications. Theory, Theory, Theory and Methodology. Siriopoulos, K., (1998), Analysis and tests of univariate financial time series, Typothito Publications, Athens, Greece.

REASEARCH METHODOLOGY SEMINAR I

1.GENERAL	
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS
DEPARTMENT	DEPARTMENT OF ECONOMICS
LEVEL OF STUDIES	POSTGRADUATE LEVEL

MODULE CODE		SEMESTER OF STUDY	A
MODULE TITLE	Research Methodology seminar I		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	ECTS
			2
TYPE OF MODULE	COMPULSORY		
PREREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		
MODULE'S URL	eclass.uth.gr		

2. LEARNING OUTCOMES

Students will be able to do the following:

- To plan a proper design of a research as well as the identification of the central question and the relative assumptions is a necessary precondition for the scientific analysis of any social and economic phenomenon.
- To implement several research methods that based on (i) specific principles and concepts, (ii) selection of appropriate research tools concerning the preparation and implementation of the research (collection and organization of information in databases, sample, sampling procedures, questionnaires, and interviews) and finally (iii) tools and methods for evaluation and analysis of the collected data / information.
- To understand the practice of empirical scientific research which, under an appropriate methodological design, ensures objective measurements and estimations of the examined phenomena and allows the systematic verification of the research's hypotheses.

General Competencies

- Research and analysis of complicate data with the use of the appropriate methods and tools
- Capacity to develop autonomous work
- Capacity to develop team work
- Working in a multidisciplinary environment
- Production of new innovative research ideas

3.MODULE CONTENT

The primary objective of this course is to provide students with adequate knowledge on the logical path of scientific research and the choice of appropriate methods – tools for the analysis of the potential development issues. This specialized knowledge gives to students the opportunity both to design and implement a research and to acquire critical thinking necessary to solve complex issue and problems.

Consequently, the course includes the following:
1. Concepts, principles, importance and purposes of scientific research
2. Identification and formulation of the central problem (research question) and of the assumptions
3. Investigation of the field, literature research
4. Structuring the analysis concerning, investigation of data resources: central assumptions, main themes for investigation, identification of quantitative and / or qualitative variables in the model, selection of appropriate research method
5. Specificities of primary and secondary research, search and selection of data sources
6. Implementation of tools for primary research: sample, sample size, sampling methods, alternative forms of questionnaires, coding questions..
7. Data entry technics and reliability tests
8. Statistical analysis of data: (a) simple exploratory statistical analysis, (b) advanced exploratory analysis: Exploratory Factor Analysis (EFA) and Principal Component Analysis (PCA), (c) Confirmatory Factor Analysis (CFA), (d) regression and projections
9.Verification of the main assumptions of the model, discussion on the findings as regards existing theories and approaches, drawing conclusions.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES

Mixed (face to face and hybrid)
- Use of e-platform, e-class
- Use of Ms-Teams programme

ORGANISATION OF TEACHING

More specifically, the workload of the module is analyzed as follows:

Type	Description	WORKLOAD (HOURS)
	Lectures	20
	Study at home	15
	Completion of assignments	15
	Total	50

MODULE ASSESSMENT

Final grade is derives from:

Writing a scientific assignment (100%) 4.000-6.000 words based on Scientifics articles

5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	- Brotherton, B. (2008) Researching Hospitality and Tourism: A Student Guide, London και Thousand Oaks: Sage. - Δαφέρμος, Β. (2013), Παραγοντική ανάλυση: Διερευνητική με SPSS και επιβεβαιωτική με το LISREL και το AMOS, Θεσσαλονίκη: Ζήτη. - Ζαφειροπούλος, Κ. (2005), Πως γίνεται μια επιστημονική εργασία; Αθήνα: Κριτική. - Finn, M., Elliott-White, M., Walton. M. (2000) Research Methods for Leisure and Tourism, Harlow: Pearson Education. - Grawitz, M. (2006), Μέθοδοι των κοινωνικών επιστημών, Τόμος Α' και Β', Αθήνα: Οδυσσέας

2nd Semester

BUSINESS ANALYTICS		
ΜΑΘΗΜΑΤΑ	**ΕΙΔΟΣ ΜΑΘΗΜΑΤΟΣ**	**ECTS**
Supply Chain and Inventories	COMPULSORY	7
Money and Capital Markets	COMPULSORY	7
Modelling in Business Analytics	COMPULSORY	7
Selective Module *	SELECTIVE	7
Research Methodology Seminar II	COMPULSORY	2

***Selective Modules- One of the following~~SELECTIVE MODULES 2ND SEMESTER IN BUSINESS ANALYTICS~~**		
MODULES	**TYPE OF MODULE**	**ECTS**
Financial Accounting	SELECTIVE	7
Measurement of Productivity and Efficiency	SELECTIVE	7
System Dynamics	SELECTIVE	7

SUPPLY CHAIN AND INVENTORIES

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**B**
MODULE TITLE	Supply Chain and Inventories		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
Lectures – Solutions of Examples and Problems – Use of EXCEL and MINITAB (Statistical Package)	3 HOURS	7

TYPE OF MODULE	COMPULSORY
PROREQUISITE MODULES:	NO
LANGUAGE OF TEACHING AND TESTING:	GREEK
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO
MODULE'S URL	https://eclass.uth.gr/courses/ECON_P_129/
2. LEARNING OUTCOMES	
Learning Outcomes	

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

(a) Optimal ordering policies between retailer and supplier in the case of constant (or approximately constant) demand from end-consumers under alternative combined transport scenarios and different price discounts policies.

(b) Optimal ordering programs between successive stages of supply chains with known time-varying demand by applying the Wagner-Whitin method in the planning horizon.

(c) Optimal ordering policies for A-class products by applying continuous review inventory models with discrete demand and computing the expected fixed, holding and shortage costs in the reference period under either complete backordering or complete lost sales conditions.

(d) The time evolution and evaluation of a two stage supply chain when (i) demand from end-consumers is generated by $ARMA(p,q)$ models, (ii) the order up to level (OUT) policy is adopted for stock replenishment, and (iii) alternative information sharing programs are applied between the stages of supply chains.

General Competencies

Postgraduate students will acquire the following general competencies:

(a) To understand the processes of developing inventory systems in supply chains.

(b) To become familiar with the use of optimal methods for determining the order quantity and the reorder point under different demand patterns from end consumers.

(c) To implement and evaluate information sharing programs between stages of a supply chain.

3.MODULE CONTENT

INVENTORY MANAGEMENT IN SUPPLY CHAINS

Importance of stocks in supply chains, Demand patterns (known and deterministic, known but time varying, random), Process of developing an inventory system, Stock Keeping Unit (SKU), Inventory cycle, Lead time, Fundamental categories of costs – Set-up and variable cost of replenishing stocks – inventory and shortage cost per item unit per time period, Lost sales environment, Backorders, the Bullwhip Effect and its impact on supply chain performance, Coordination in supply chains, Managerial mechanisms to improve coordination, Classifications of products to Class A – Class B – Class C items (A–B –C analysis).

MANAGING ECONOMIES OF SCALE IN SUPPLY CHAINS

Average flow time of products in a supply chain, Quantity in a lot or batch size, Cycle inventory, Little's Law, Economic Order Quantity model (EOQ), Deliveries with zero lead time and reorder point, Optimal inventory policies when (a) multiple products are ordered and delivered either independently or jointly, and (b) Lots are ordered and delivered jointly for a selected subset of products, Placing orders under quantity discounts – discounts offered on the quantity ordered in a single lot – marginal unit discount pricing schedules (multi-block tariffs), Optimal order quantities in a two stage supply chain minimizing (a) Retailer cost, and (b) supply chain total cost, Lot sizing for individual items with known but time-varying demand, Planning horizon, Exact solutions using the Wagner-Whitin method, Applications in EXCEL.

CONTINUOUS REVIEW WITH DISCRETE RANDOM DEMAND

The concept of discrete random variable, Probability distribution, Cumulative distribution function, Expected value of discrete random variable, Poisson distribution, Continuous review with discrete demand, On-hand and net stock, Replenishment policies under (a) Complete backordering and (b) Complete lost sales, (R,Q) continuous review inventory system, Safety Stock, Cycle service level, Alternative methods of determining the order quantity, Q, and the reorder point, R, Computation of expected costs in the reference period concerning (a) stock replenishment, (b) inventory carrying, and (c) shortage of stocks, Optimal inventory policies, Applications in EXCEL.

TIME EVOLUTION OF SUPPLY CHAINS UNDER NORMAL DEMAND AT THE RETAILER

$ARMA(p,q)$ demand models at the retailer, Minimum Mean Square error (MMSE) forecasts for demand, Order up to level (OUT) policies for stock replenishment, Forecast errors for demand, Target inventory level, Time evolution of retailer's orders – quantification of Bullwhip effect, time evolution of supplier's order to the manufacturer – the scenarios of full information sharing (FIS) and No information sharing (NIS), Average on hand inventory per time period, Benefits of retailers and suppliers in information sharing programs, Applications in EXCEL.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Post graduate students will attend lectures either by face-to-face meetings or by using synchronous distance education methods.
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	The learning process is supported through the use of (a) the electronic platform e-class, the institutional email, and the online classroom of the course on the MS-TEAMS platform, and (b) Microsoft EXCEL.
ORGANISATION OF TEACHING	The lectures are delivered in the classrooms of the Department of Economics through the use of Microsoft Office 365 tools (Word, EXCEL, Power-Point). Before each lecture, slides and supporting material have

already been posted on the course electronic platform “e-class”, so that students can have access to them during the lecture. The existing technological equipment of the above rooms also enables the use of an electronic whiteboard through a WACOM device, which allows writing in presentations and texts with storage capabilities of rich texts and presentations. The enriched texts containing comments on the lectures and solutions to exercises and problems are also posted in the e-class after the end of each lecture. This uploaded material on e-class includes also files containing additional problems and exercises that students are invited to solve in order to practice and understand the taught material. Solutions and comments on these problems are given either during lectures or during office hours announced by the teacher responsible (in special cases even via e-mail using students’ institutional accounts)

More specifically, the workload of the module is analyzed as follows:

Type~~Είδος~~	Description~~Περιγραφή~~	WORKLOAD (HOURS)
	Lectures	39
	Study at home	110
	Completion of assignments	35
	Preperation for the final exam	24
	Final Examination	2
	Total	210

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MODULE ASSESSMENT

FIRST SEMESTER EXAMINATION PERIOD

Individual/group work: 30%

Written exam: 70%

REPEAT EXAMINATION

Written exam: 100%

5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	– Chopra, S., (2021), "*Supply Chain Management*", TZIOLA, A., *PUBLICATIONS, & SONS S.A.* – Cristofer, M., (2017), "*Logistics and Supply Chain Management*", KRITIKI Publication. – Silver, E.A., Pyke, D.F., Thomas, D.T., (2021), "*Inventory and Production Management in Supply Chains*", 4th Edition, CRC Press. – Thomopoulos, N.T., (2015), "*Demand Forecasting for Inventory Control*", Springer.

MONEY AND CAPITAL MARKETS

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	MONEY AND CAPITAL MARKETS		
INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**	
Lectures – Exercises - Case Studies	3 HOURS	7	
TYPE OF MODULE	ELECTIVE		
PROREQUISITE MODULES:	NO		

LANGUAGE OF TEACHING AND TESTING:	GREEK
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO
MODULE'S URL	eclass.uth.gr

2. LEARNING OUTCOMES

Learning Outcomes

The aim of the course is to delve into the issues of the money and capital markets in order to provide the possibility of a more complete understanding of the ways in which capital markets work and how investment strategies are developed. Upon successful completion of the course requirements, students are expected to:

- understand the distinction between real and financial assets
- understand how the money and the capital markets work
- understand how investment companies and mutual funds work
- analyze portfolios of securities and measure their performance and risk
- understand capital markets products and their valuation methods
- develop investment strategies
- apply computer aided methods of market reflection, such as technical analysis.
- formulate original ideas and express them in the form of research papers.

General Competencies

The course presents specialized topics in the field of money and capital markets. Basic financial instruments and investment strategies that can be developed in the modern financial environment are studied. Topics related to securities valuation and portfolio structuring are analyzed. Special emphasis is also placed on investment companies, behavioral finance, and technical analysis. Students acquiring this knowledge will have the necessary skills to work in financial institutions and international organizations, as well as in investment companies.

3.MODULE CONTENT

The course will cover the following subjects:

Introduction to the Financial Environment - Asset classes and financial instruments

• The concept of investment.

• Distinguish between real and financial assets

• Risk-return trade-off and efficient valuation

• Financial crisis of 2008 - Relationships between the financial system and the "real" side of the economy

• Investing in securities: Money market vs capital market. Equity securities, debt securities, derivative products.

Investment Decision Process and Investment Strategies – Return / Risk – Investment Companies and Mutual Funds

• The fundamentals of risk and return. Degree of risk aversion.

• Open-end and closed-end funds, ETFs

Principles of Portfolio Management.

• Markowitz's Portfolio Theory.

• The concept of diversification.

Capital Markets and Asset Pricing

• Capital market theory (CAPM, APT, Fama-French models)

• The hypothesis of the efficient Market (Market Efficiency)

Gold as an investment product

• Gold derivatives

• The main characteristics and factors affecting the demand and supply of gold are presented.

•Special reference is made to the role of gold in an investment portfolio as a hedger or diversifier of risk.

Behavioral Finance & Technical Analysis

• Presentation of the basic principles of behavioral finance

• Development of technical systems to produce buy and sell signals for securities trading.

Bond Valuation and Bond Portfolio Management

• Types of bond securities.

• Valuation of Bonds

• Bond Portfolios

<table>
<tr><th colspan="2">4. TEACHING AND LEARNING METHODS EVALUATION</th></tr>
<tr><td>TEACHING METHOD</td><td>Mixed</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES</td><td>Learning process support through the e-class online platform. Email usage, MSTEAMS.</td></tr>
<tr><td>ORGANISATION OF TEACHING</td><td>The lectures of the course take place in the halls of the Department of Economic Sciences. Informational material is distributed through the course page in the e-class, case studies are discussed, exercises are solved, and various videos are analyzed related to applications of theory in practice.

More specifically, the workload of the course is broken down as follows: (indicative)

<table>
<tr><th>Types</th><th>Description</th><th>WORKLOAD (HOURS)</th></tr>
<tr><td></td><td>Lectures</td><td>39</td></tr>
<tr><td></td><td>Study at home</td><td>80</td></tr>
<tr><td></td><td>Completion of assignments</td><td>50</td></tr>
<tr><td></td><td>Preparation for the final exam</td><td>39</td></tr>
<tr><td></td><td>Final Examination</td><td>2</td></tr>
<tr><td></td><td>Total</td><td>210</td></tr>
</table>
</td></tr>
<tr><td>MODULE ASSESSMENT</td><td>Assignment 40%

Final Exams 60%</td></tr>
<tr><th colspan="2">5. RECOMMENDED BIBLIOGRAGHY</th></tr>
</table>

Suggested Bibliography:	• Bodie Zvi, Kane Alex, Marcus Alan J. (2014) Investments, Edition Utopia • Lim Mark Andrew (2023) A Complete Guide for Technical Analysis BROKEN HILL PUBLISHERS LTD. Editing In Greek Papadamou, S. and Fassas, A. • Laopodis, N. (2012). Understanding investments: theories and strategies. Routledge. • Papadamou, S. (2009), Portfolio Management: A modern guide Edition Gutenberg - Rajib, P. (2014). Commodity derivatives and risk management. PHI Learning Pvt. Ltd..

MODELLING IN BUSINESS ANALYTICS

1.GENERAL			
FACULTY	FACULTY OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER**	**A**
MODULE TITLE	Modelling in Business Analytics		
INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**	
Lectures - Exercises - Workshops	3 HOURS	7	
TYPE OF MODULE	COMPULSORY		
PROREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND	GREEK		

TESTING:	
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO
MODULE'S URL	eclass.uth.gr

2. LEARNING OUTCOMES

Learning Outcomes

Upon completing the course, participants are expected to:

1. Understand advanced mathematical methods.
2. Grasp the complexity of an economic model.
3. Utilize various tools of contemporary techniques.
4. Distinguish the similarities and/or differences between models in Physics and Economics.

General Competencies

The purpose of this course is to introduce students to Dynamical Systems and the new techniques used in the study of economic models. Having considered a substantial number of economic dynamic models, we will attempt to answer the question: "What mathematical concepts are needed to understand these models?" For this reason, we have emphasized concepts primarily used in modern Dynamical Systems research, such as phase space, stability, bifurcations, attractors, and chaos. The study of dynamic economic models underwent slow development due to significant mathematical and computational requirements. The advancement of computers and suitable software packages have made it easier for economists to explore dynamic systems. In the course, we will make use of some of the contemporary and powerful tools of quantitative research, such as Excel and Maxima.

3.MODULE CONTENT

Continuous Dynamical Systems, Discrete Dynamical Systems, First-order Differential Equation Systems, Discrete Equation Systems, Optimal Control Theory, Chaos Theory, Applications of the above in Supply and Demand Models, Closed Economy Dynamics, and the Dynamics of Inflation and Unemployment.

<table>
<tr><th colspan="2">4. TEACHING AND LEARNING METHODS EVALUATION</th></tr>
<tr><td>TEACHING METHOD</td><td>Mixed</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES</td><td>Support for the learning process will be provided through the e-class electronic platform. Communication will take place via email and Microsoft Teams. Additionally, the computational mathematics program "Maxima" will be used as part of the course.</td></tr>
<tr><td>ORGANISATION OF TEACHING</td><td>More specifically, the workload of the module is analyzed as follows:
<table>
<tr><th>~~Kind~~Type</th><th>Description</th><th>WORKLOAD (HOURS)</th></tr>
<tr><td></td><td>Lectures</td><td>39</td></tr>
<tr><td></td><td>Study at home</td><td>80</td></tr>
<tr><td></td><td>Completion of assignments</td><td>50</td></tr>
<tr><td></td><td>Preparation for the final exam</td><td>39</td></tr>
<tr><td></td><td>Final Examination</td><td>2</td></tr>
<tr><td></td><td>Total</td><td>210</td></tr>
</table></td></tr>
<tr><td>MODULE ASSESSMENT</td><td>The grading for the course will be based on either two practical assignments, with a weight of 40% for the first and 60% for the second, or a single final project worth 100%.</td></tr>
<tr><th colspan="2">5. RECOMMENDED BIBLIOGRAGHY</th></tr>
<tr><td>Suggested Bibliography:</td><td>Ζαχείλας Λουκάς: «Υπολογιστικές Μέθοδοι με τη χρήση του Maxima», (Σημειώσεις), 2011
Λουκάκης Μανώλης: «Μαθηματικά Οικονομικών Επιστημών», Τόμος Β' (Κεφ. 18 – 24), εκδόσεις ΣΟΦΙΑ</td></tr>
</table>

	Σαραφόπουλος Γ. & Μυλωνάς Ν.: «Γραμμική Άλγεβρα, Βελτιστοποίηση και Δυναμική Ανάλυση στις Οικονομικές Επιστήμες», εκδ. Α. Τζιόλα Bertuglia, Cristoforo and Vaio, Franco (2005): «Nonlinearity, Chaos & Complexity», εκδόσεις Oxford University Press Gandolfo, Giancarlo (2005): «Economic Dynamics: Study edition», εκδόσεις Springer-Verlag Kaplan, Daniel and Glass, Leon (1995): «Understanding Nonlinear Dynamics», εκδόσεις Springer-Verlag Puu, Tönu (2003): «Attractors, Bifurcations and Chaos. Nonlinear Phenomena in Economics», εκδόσεις Springer-Verlag. Shone, Ronald (2002): «Economic Dynamics. Phase diagrams and their Economic application», εκδόσεις Cambridge University Press.

RESEARCH METHODS SEMINAR II

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	Research Methods Seminar II		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
Lectures and hands-on training	3 HOURS	2

TYPE OF MODULE	COMPULSORY
PREREQUISITE	Research Methods Seminar I

MODULES:	
LANGUAGE OF TEACHING AND TESTING:	GREEK
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO
MODULE'S URL	https://eclass.uth.gr/courses/ECON_P_190/

2. LEARNING OUTCOMES

Learning Outcomes

This seminar provides a comprehensive introduction of statistics for business and economics and an intensive, hands-on introduction to the principles and practice of data visualization. As a result of taking this course, the students should be able to: 1. Apply and interpret descriptive statistics. 2. Formulate, identify and apply inferential statistics. 3. Analyse the association of variables using regression and ANOVA analyses. 4. Conduct empirical work using statistical software and interpret results 5. Take their data from Excel into visualization software, transform it to easy-to-understand dynamic graphics and interactively explore what-if scenarios.

General Competencies

This course provides the elementary foundations in statistics as well as the prerequisites for understanding the trends and challenges in data analysis and visualization.
The students will find the resources to learn the science behind data analysis, how businesses use data to their advantage. Utilizing the tools that support Business Intelligence can give organizations an edge, letting them make better, data-driven decisions.

3.MODULE CONTENT

Learning module 1: Statistical analyses using statistical package IBM SPSS Statistics

- Data import, data management
- Quantitative and qualitative variables, attributes, scales of measurement (nominal, ordinal, interval and ratio).
- Importing a survey questionnaire to SPSS

- Data Presentation: tabular and graphical. Statistical charts, crosstabulation and independence of data with special reference to attributes. Coding, missing values, conditional and arithmetic operations.
- Descriptive statistics: measures of central tendency, measures of dispersion.
- Inferential statistics. Basic statistical tests in SPSS. T-tests, analysis of variance (ANOVA), Chi-square test and contingency tables.
- Bivariate data: Definition, scatter diagram, simple, partial and multiple correlation, determine the strength of the correlation via the correlation coefficient. Simple and multiple linear regression. Multiple linear regression assumptions and diagnostics.

Learning module 2: Visual analytics

- Basic plotting and visualization. Statistical and specialty plots in Business Intelligence and Analytics Software Tableau.
- Best practices for creating different plot types, motion charts, interactive visualizations.
- Building, sharing and customizing automated reports including data, text and graphics.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	In situ and online lectures with hands-on computer training classes.
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Teaching and learning process will be enhanced by eclass, email and MSTEAMS. Software licenses (IBM SPSS Statistics and Tableau latest versions) are offered to students at the beginning of the course. After completing the course, students have free one-year Tableau licenses through "Tableau for Students software licensing program".
ORGANISATION OF TEACHING	The hands-on training is conducted in the Computer Lab. Hands-on exercises and relevant materials (software user manuals, e-books, dictionary of statistical terms, white papers) will be provided for students to try out the applications, and to experiment with data analysis and interpretation and analytical reasoning in reports. More specifically, the workload of the module is analyzed as follows:

Type~~Είδος~~	Description~~Περιγραφή~~	WORKLOAD~~Φ~~ (HOURS)

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	Lectures	39
	Study at home	10
	Completion of assignments	-
	Preparation for the final exam	9
	Final Examination	2
	Total	60
MODULE ASSESSMENT	Online exam in the classroom	

5. RECOMMENDED BIBLIOGRAGHY

Suggested Bibliography:

- Aljandali A. (2016). Quantitative Analysis and IBM® SPSS® Statistics. A Guide for Business and Finance. Springer Cham. Hardcover ISBN 978-3-319-45527-3 (e-book)
- Cleophas, Ton J., Zwinderman, Aeilko H. (2015). SPSS for Starters and 2nd Levelers. Springer International Publishing, ISBNs 978-3-31-920599-1, 978-3-31-920600-4. (e-book)
- Martin Lee Abbott (2016). Using Statistics in the Social and Health Sciences with SPSS® and Excel®. John Wiley & Sons, Inc. Print ISBN: 9781119121046 Online ISBN: 9781119121077
- Lind D. and Marchal W. and Wathen S. (2018). Statistical Techniques in Business and Economics, 17th Edition, McGraw Hill Education.

Selective Modules

FINANCIAL ACCOUNTING

1. GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**B**
MODULE TITLE	FINANCIAL ACCOUNTING		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
Lectures – problems - calculations		3 hours	7
TYPE OF MODULE	COMPULSORY		
PREREQUISITE MODULES:	No		
LANGUAGE OF TEACHING AND TESTING:	Greek		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	No		
MODULE'S URL	eclass.uth.gr/		
2. LEARNING OUTCOMES			

Learning Outcomes

After successfully completing the lessons, students should be able to:

- Compose the financial accounts (balance sheet, income statement, and cash flow statement)
- Analyze and register accounting events and transactions
- Be accustomed with evaluating inventories
- Be accustomed with financial reporting of tangible and intangible fixed assets
- Conduct consolidation of financial statements

General Competencies

The course of 'Financial Accounting' aims to familiarize the students with accounting tasks, registration of transactions in accounts, and the overall accounting system. The main purpose of this course is to learn to the students the procedure of composing the main financial accounts, I.e. the balance sheet, the income statement, and the cash flow statement. Finally, this course presents the procedure of consolidation of financial statements.

3. MODULE CONTENT

Analysis and accounting entry of transactions in book accounts

Composing balance sheets and Income Statements

Composing Cash Flow Statements

Inventories valuation

Tangible fixed assets

Intangible fixed assets

Consolidation of financial statements

Valuation of financial statements

4. TEACHING AND LEARNING METHODS EVALUATION

<table>
<tr><td>TEACHING METHOD</td><td>In person and online</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES</td><td>Teaching is supported by the e-class platform. Use of email, MSTEAMS</td></tr>
<tr><td>ORGANISATION OF TEACHING</td><td>Teaching takes place in the classes of the Department of Economics. Informative material is distributed through the course’s e-class webpage.

More specifically, the workload can be divided as indicated below::

<table>
<tr><th>Type</th><th>Description</th><th>WORKLOAD (HOURS)</th></tr>
<tr><td></td><td>Lectures</td><td>39</td></tr>
<tr><td></td><td>Study at home</td><td>80</td></tr>
<tr><td></td><td>Completion of assignments</td><td>50</td></tr>
<tr><td></td><td>Preparation for the final exam</td><td>39</td></tr>
<tr><td></td><td>Final Examination</td><td>2</td></tr>
<tr><td></td><td>Total</td><td>210</td></tr>
</table>
</td></tr>
<tr><td>MODULE ASSESSMENT</td><td>Assessment by:

- group assignment: 30%

- exam: 70%</td></tr>
<tr><td colspan="2">5. RECOMMENDED BIBLIOGRAGHY</td></tr>
</table>

Suggested Bibliography:	- Gikas Dimitrios and Afroditi Papadaki, «Financial Accounting», Benos editions. - Hevas Dimosthenis and Apostolos Ballas, «Financial Accounting», Benos editions. - Elliott, B. and J. Elliott, «Financial Accounting and Reporting», Pearson Education. - Harrison W., C. Horngren and W. Thomas, «Financial Accounting», Broken Hill Publishers.

MEASUREMENT OF PRODUCTIVITY AND EFFICIENCY

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**B**
MODULE TITLE	MEASUREMENT OF PRODUCTIVITY AND EFFICIENCY		
INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**	
Lectures - Exercises - Actions	3 HOURS	7	
TYPE OF MODULE	COMPULSORY		
PROREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		

THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO
MODULE'S URL	eclass.uth.gr

2. LEARNING OUTCOMES

Learning Outcomes

The course aims to provide students with the tools of applied economic analysis to be able to answer the following questions:

• How can I determine the production function of an economic unit?

• How can I measure the technical efficiency of organizations and other economic units?

• How can I measure the productivity of organizations and other economic units?

• How can I identify and propose optimization goals for the production process of organizations and other economic units?

This course is designed to equip students with the knowledge and analytical skills necessary to address these questions in the context of economic analysis and optimization.

General Competencies

The student will have the ability to measure productivity and efficiency using the Data Envelopment Analysis (DEA) method. They will also be able to recognize, understand, and create Malmquist productivity indices and apply the measurement of technical efficiency to organizations and economic units such as banks, hotels, hospitals, and others.

This indicates that the student will acquire skills related to advanced economic analysis techniques, particularly in the context of productivity and efficiency measurement in various types of organizations and economic entities.

3.MODULE CONTENT

The course consists of lectures with a particular emphasis on applied specialized topics in the economics of production. The central aim of the course is to understand fundamental concepts of economic production, with an emphasis on learning and applying methodologies for measuring productivity and efficiency in economic units and organizations.

• Basic introductory concepts related to technology and scale efficiency.

• Profit maximization theory and scale efficiency.

• Production theory and production frontier analysis.

• Parametric and non-parametric approaches to measuring production efficiency.

• Measurement of productivity using the Malmquist index.

This course covers a range of topics related to the economics of production, focusing on practical applications and measurement methodologies for productivity and efficiency in various economic units and organizations.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	in-person and remote activities or learning (hybrid)
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	"Supporting the learning process through the e-class electronic platform. Using email and Microsoft Teams." This statement indicates the use of electronic platforms and communication tools like email and Microsoft Teams to facilitate and enhance the learning process.
ORGANISATION OF TEACHING	More specifically, the workload of the module is analyzed as follows:

Type	Description	WORKLOAD (HOURS)
	Lectures	39

	Study at home	80
	Preperation for the final exam	90
	Final Examination	1
	Total	210
MODULE ASSESSMENT	100% Individual Presentation of a Scientific Article.	
5. RECOMMENDED BIBLIOGRAGHY		
Suggested Bibliography:	• Coelli, TJ, Rao, D.S.P., O'Donnell CJ, Battese GE. (2005). An introduction to efficiency and productivity analysis, Second edition, Springer. • Ray, S. C. (2004). Data envelopment analysis: theory and techniques for economics and operations research. Cambridge university press • Varian R. H. (1992). Microeconomic Analysis, Third edition, Norton.	

SYSTEM DYNAMICS

1.GENERAL	
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS
DEPARTMENT	DEPARTMENT OF ECONOMICS
LEVEL OF STUDIES	POSTGRADUATE LEVEL

MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	Applications of System Dynamics in Economics and Management		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
		3 HOURS	7
TYPE OF MODULE	COMPULSORY		
PROREQUISITE MODULES:	NONE		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		
MODULE'S URL	eclass.uth.gr		

2. LEARNING OUTCOMES

Learning Outcomes

In this course, students learn to apply the System Dynamics (SD) methodology to economic and management problems. SD is used to model and simulate dynamic problems in both social and physical systems.

Upon successful completion of the course, students will:

- Comprehend the fundamental principles of systems thinking and the concepts of emergence, function and performance.
- Identify and describe the relationships between the entities of a system.
- Apply systems thinking to understand complex processes.
- Apply systems thinking to the investigation of administrative, economic and social problems.
- Create systems' models.

- Apply the principles and concepts of SD through a simulation of an administrative, economic or social problem.

General Competencies

- Systems thinking
- Collaboration in a team context
- Problem definition
- Identifying causal links and feedback loops
- Simulation using software
- Formulation and test of dynamic hypothesis
- Recognition of archetypal feedback structures

3.MODULE CONTENT

Introduction to System Dynamics
Systemic complexity and strategic thinking
Systems thinking with feedback
Systems thinking and modeling tools

The dynamics of growth, development and diffusion
Diffusion models (fashion, innovation, epidemiology)
Marketing applications and brand strategy
Business development

Industrial dynamics
Time lags and path dependence
Socio-technical Transitions (digital, green, etc.)

Economic dynamics
Tragedy of the commons
Crises and economic cycles
Innovation systems
Ecological crisis and climate change

Creating System Dynamics models
Modeling of Dynamic Systems
Simulation of system dynamics models
Dynamic hypothesis formulation
Dynamic hypothesis testing
After the model: testing and calibration, analysis and reflection

<table>
<tr><th colspan="2">4. TEACHING AND LEARNING METHODS EVALUATION</th></tr>
<tr><td>TEACHING METHOD</td><td>Hybrid/mixed (flexible-learning)</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES</td><td>Learning process support through the e-class online platform. Use of email, MSTEAMS</td></tr>
<tr><td>ORGANISATION OF TEACHING</td><td>More specifically, the workload of the module is analyzed as follows:
<table>
<tr><th>~~Kind~~ Type</th><th>Description</th><th>WORKLOAD (HOURS)</th></tr>
<tr><td></td><td>Lectures</td><td>39</td></tr>
<tr><td></td><td>Study at home</td><td>78</td></tr>
<tr><td></td><td>Completion of assignments</td><td>50</td></tr>
<tr><td></td><td>Preperation for the final exam</td><td>40</td></tr>
<tr><td></td><td>Final Examination</td><td>3</td></tr>
<tr><td></td><td>Total</td><td>210</td></tr>
</table></td></tr>
<tr><td>MODULE ASSESSMENT</td><td>Assignments during the semester 30%

Final semester assignment 70%</td></tr>
<tr><th colspan="2">5. RECOMMENDED BIBLIOGRAGHY</th></tr>
<tr><td>Suggested Bibliography:</td><td>Sterman, J. D. (2000) Business Dynamics: Systems Thinking and Modeling for a Complex World, McGraw-HillGraw-Hill.

Morecroft, J. D. (2015). Strategic modelling and business dynamics: A feedback systems approach. John Wiley & Sons.

Cavana, R. Y., Dangerfield, B. C., Pavlov, O. V., Radzicki, M. J., & Wheat, I. D. (Eds.). (2021). Feedback Economics: Economic Modeling with System Dynamics. Cham, Switzerland: Springer.</td></tr>
</table>

3rd Semester

3rd Semester	TYPE OF MODULE	ECTS
Dissertation	SELECTIVE	30
ALTERNATIVELY INSTEAD OF DISSERTATION ALL THE FOLLOWING MODULES		
Financial Management	COMPULSORY	7
Technology Strategy	COMPULSORY	7
Economics of Money and Banking	COMPULSORY	7
Applied Economic Analysis	COMPULSORY	7
Research Methodology Seminar III	COMPULSORY	2

DISSERTATION

1.GENERAL		
MODULE TITLE	DISSERTATION	
INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
		30
TYPE OF MODULE	SELECTIVE	
PREREQUISITE MODULES::	MODULES OF 1ST AND 2ND SEMESTER	
LANGUAGE OF TEACHING AND TESTING:	Greek, English	
THE MODULE IS OFFERED TO ERASMUS STUDENTS	No	
MODULE'S URL	eclass.uth.gr/eclass/courses	

2. LEARNING OUTCOMES

The main learning objective to be achieved during the completion of the master's thesis is for the student to develop the necessary knowledge background related to the critical understanding of the subject of the master's thesis, as well as the systematic application of research methodologies and techniques. Specifically, upon completion of the master's thesis, the student should demonstrate that:

• Understands, critically evaluates, and applies techniques for defining and developing a research topic that constitutes a relevant research problem in the field of Applied Economics.

• Selects and formulates specific research objectives and problems that exhibit (to some extent at a master's level) scientific originality and practical relevance.

• Understands and assesses the relationships between research objectives-problems, scientific literature, research methodologies, data collection and analysis techniques, drawing conclusions, and ultimately methods for making managerial decisions.

• Applies research search processes and engages in the critical review of scientific literature relevant to the research topic.

• Conducts research and formulates conclusions that are understandable and lead to interesting results.

• Understands the differences between quantitative research and qualitative research strategies and applies them either independently or in combination, depending on the specific requirements of the research.

• Understands the advantages and disadvantages of research techniques, systematically applies research techniques, and documents the choices made.

• Relies on primary and/or secondary data, which are evaluated for sufficiency, reliability, and validity.

• Formulates understandable and useful conclusions that demonstrate knowledge of the subject and the ability to critically assess other relevant published research results.

• Understands and formulates limitations and weaknesses of the research work.

• Identifies possible directions for future research in the specific area and in accordance with the initial research objectives, and finally

• Broadens their overall knowledge background to enhance further research and professional pursuits.

General Competencies

The postgraduate thesis aims for the student to develop, through a primarily personal research process and under the guidance of the supervisor, a thesis on the chosen subject-object proposed following a relevant proposal. The aforementioned thesis should present:

• A clearly defined contribution to the field of Applied Economics, either through the conduct of original research or through the examination and application of relevant theories and methodologies.

• A well-documented research methodology and the systematic application and utilization of appropriate techniques for data collection, analysis, and processing.

• Comprehensive knowledge of the research subject of the thesis, including the ability to critically evaluate relevant literature.

3. MODULE CONTENT

The research objectives and the content of each postgraduate thesis (Master's thesis) should be relevant to the academic subject of the Master's program (MSc) and should fall within a specific academic field or areas of knowledge.

The research methods involve techniques for collecting and processing reliable data, as well as their documentation through scientific methods (e.g., field research, literature review, statistical analysis, etc.).

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	During the semester in which the postgraduate thesis (MSc thesis) is being completed, the supervising Professor supports the student by providing, in the best guiding manner, the scientific knowledge and expertise in the specific subject of the thesis. This support aims to facilitate the student's gradual progress in writing the thesis.
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Supporting the Learning Process through the e-class Electronic Platform

ORGANISATION OF TEACHING

More specifically, the workload of the course is analyzed as follows:

Type	Description	Workload(hours)
Lectures	This concerns the lectures and presentations that will take place in the Research Methodology Seminar I & II.	2*20=40
Preparation of an MSc thesis proposal	Involves composing the proposal for the MSc thesis.	20
Preparation of Dissertation	It concerns the time required for conducting case studies and implementing exercises, as previously mentioned (Assessment Method).	536
Final Examination	It concerns the duration of the final examination	1
Participation in other activities	Meetings with the Professor for Progress Feedback	3
	Σύνολο	**600**

MODULE ASSESSMENT

The MSc thesis is presented for public defense by the student. The thesis is evaluated by the supervisor and two assessors, who must collectively agree on the final grade for the postgraduate thesis, which may also be the average of the three grades.

The evaluation criteria for the thesis include:

• The significance of the contribution of the specific research to the academic subject of the MSc program.

• Clear definition and significance of the research objectives.

	• Understanding of the research subject and the ability to critically evaluate and utilize relevant literature. • Understanding of research methodology, sufficiency of the research methodology, and systematic use of appropriate research techniques. • Completion of the research and the significance of the results and conclusions. • Writing style of the thesis and the technical presentation quality of the work, which should conform to citation style standards. • Presentation and public defense of the thesis.
5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	• *Calabrese R. L. (2012), Getting It Right: The Essential Elements of a Dissertation, 2nd Edition, Rowman & Littlefield Education.* • *Cohen L., Manion L., Morrison K. (2007), Research Methods in Education, 6th Edition, London & New York, Routledge.* • *Murray R. (2006), How to Write a Thesis, 2nd Edition, Berkshire, UK, Open University Press.* • *Orna E. & Stevens G. (2009), Managing Information for Research: Practical help in researching, writing and designing dissertations, 2nd Edition, Buckingham, UK, Open University Press.* • *Saunders M., Thornhill M., Lewis, P. (2012), Research Methods for Business Students, 6th Edition, Harlow, Essex, UK, Pearson.* • *Yin R. K. (1994), Case Study Research Design and Methods, 2nd Edition, London & New Delhi, Sage.* • *Bell J. (2007), Πως να συντάξετε μια Επιστημονική Εργασία: Οδηγός Ερευνητικής Μεθοδολογίας, Αθήνα, Εκδόσεις Μεταίχμιο.* • *Eco U. (2001), Πως γίνεται μια Διπλωματική Εργασία, Αθήνα, Εκδόσεις Νήσος.* • *Ζαφειρόπουλος Κ. (2015), Πως γίνεται μια Επιστημονική Εργασία: Επιστημονική Έρευνα και Συγγραφή Εργασιών, Αθήνα, Εκδόσεις Κριτική.*

- *Θεοφιλίδης Χ. (2005), Η Συγγραφή Επιστημονικής Εργασίας: Από τη Θεωρία στην Πράξη, Αθήνα, Εκδόσεις Τυπωθήτω-Δαρδανός.*
- *Μπέλλας Θ. (1998), Δομή και Γραφή της Επιστημονικής Εργασίας, Αθήνα, Εκδόσεις Ελληνικά Γράμματα.*
- *Μπουρλιάσκος Β. Γ. (2010), Πως γράφεται μια Επιστημονική Εργασία: Πρακτικός Οδηγός, Συγγραφή Επιστημονικής Εργασίας και Βιβλιογραφική Έρευνα, Αθήνα, Εκδόσεις Διόνικος.*
- *Τοκμακίδης Σ. Π. (2008), Οδηγός για τη Συγγραφή Διπλωματικών Εργασιών, Αθήνα, Ιατρικές Εκδόσεις Π. Χ. Πασχαλίδης.*

Alternatively , instead dissertation the following four modules and the Seminar

FINANCIAL MANAGEMENT

1. GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**B**
MODULE TITLE	FINANCIAL ACCOUNTING		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
Lectures – problems - calculations		3 hours	7
TYPE OF MODULE	COMPULSORY, OPTIONAL		
PREREQUISITE MODULES:	No		

LANGUAGE OF TEACHING AND TESTING:	Greek
THE MODULE IS OFFERED TO ERASMUS STUDENTS	No
MODULE'S URL	eclass.uth.gr/

2. LEARNING OUTCOMES

Learning Outcomes

After successfully completing the lessons, students should be able to:

- Compose the financial accounts (balance sheet, income statement, and cash flow statement)
- Analyze and register accounting events and transactions
- Be accustomed with evaluating inventories
- Be accustomed with financial reporting of tangible and intangible fixed assets
- Conduct consolidation of financial statements

General Competencies

The course of 'Financial Accounting' aims to familiarize the students with accounting tasks, registration of transactions in accounts, and the overall accounting system. The main purpose of this course is to learn to the students the procedure of composing the main financial accounts, I.e. the balance sheet, the income statement, and the cash flow statement. Finally, this course presents the procedure of consolidation of financial statements.

3. MODULE CONTENT

Analysis and accounting entry of transactions in book accounts

Composing balance sheets and Income Statements

Composing Cash Flow Statements

Inventories valuation

Tangible fixed assets

Intangible fixed assets

Consolidation of financial statements

Valuation of financial statements

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	In person and online
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Teaching is supported by the e-class platform. Use of email, MSTEAMS
ORGANISATION OF TEACHING	Teaching takes place in the classes of the Department of Economics. Informative material is distributed through the course's e-class webpage. More specifically, the workload can be divided as indicated below:: Type / Description / WORKLOAD (HOURS) Lectures — 39 Study at home — 80 Completion of assignments — 50

	Preparation for the final exam 39 Final Examination 2 Total 210
MODULE ASSESSMENT	Assessment by: - group assignment: 30% - exam: 70%
5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	- Gikas Dimitrios and Afroditi Papadaki, «Financial Accounting», Benos editions. - Hevas Dimosthenis and Apostolos Ballas, «Financial Accounting», Benos editions. - Elliott, B. and J. Elliott, «Financial Accounting and Reporting», Pearson Education. - Harrison W., C. Horngren and W. Thomas, «Financial Accounting», Broken Hill Publishers.

TECHNOLOGY STRATEGY

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE	**MA_41**	**SEMESTER OF STUDY**	**A**
MODULE TITLE	**Technology Strategy**		

INDEPENDENT TEACHING ACTIVITIES	WEEKLY TEACHING HOURS	ECTS
Lectures – Course work	3 HOURS	7

TYPE OF MODULE	COMPULSORY
PREREQUISITE MODULES:	NO
LANGUAGE OF TEACHING AND TESTING:	GREEK
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO
MODULE'S URL	eclass.uth.gr

2. LEARNING OUTCOMES

Learning Outcomes

Upon successful completion of the course, students will be able to understand the developments in the modern technology environment and plan appropriate policies and practices for their effective management. Students will be able to:

- Understand the interaction between economics and technology
- Connect theoretical knowledge with technological and business reality
- Recognize the primary importance of innovation and organizational learning
- Understand the world of intellectual property (IP)
- Understand the basic functions of Technology Strategy
- Implement individual tools, policies and practices of Technology Strategy

General Competencies

- Understanding how the theories of Economics of Technology and Technology Strategy apply to the modern economic environment.
- Solving practical problems encountered in the technologically fluid business environment.
- Planning of Technology Strategy policies and practices
- Improving the ability of students to communicate, collaborate and lead on issues of technology and innovation.

- Teamwork
- Perception of the innovative capabilities of the business

3.MODULE CONTENT

Technical change and economic development (Economics of knowledge and innovation: key concepts)

- Innovation and Technical Change
- Industrial and technological revolutions, techno-economic paradigms
- Knowledge, technology, innovation and entrepreneurship
- Diffusion of innovation and path dependence
- Disruptive innovation, Socio-technical Systems and Socio-technical Transition

Economics of technology

- Business knowledge creation process
- Path Dependence and Absorptive Capacity

Technology **Strategy**

- Types of Technology Strategy
- Levels of Technology Strategy Development
- Tools and Methods for Developing Innovative Skills
- Architectural innovation
- Technology platforms and ecosystem strategies
- Modularity
- Product platforms
- Reasons for failure of large companies
- Technology alliance strategies

Technology **and Business strategy**

- Fundamental skills
- Leveraging innovation, complementary assets, and appropriability regimes
- Co-opetitive games and platform strategy

Intellectual Property and exploitation of innovation

The framework for the study and analysis of intellectual property

- Intangible assets:
  - Intangible assets investment
- Intellectual Property Rights (IPRs):
  - Intellectual Property Protection
  - Patents
- IP institutions and mechanisms (OBI, EPO, WIPO, etc.)
- Intellectual Property Management – Strategies

Technology **Strategy Planning**

- Technology Foresight
- Technology Monitoring
- Scenario development and analysis
- Technology Road-Map (TRM)

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Mixed/Hybrid
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Learning process support through the e-class online platform. Use email, MS TEAMS.
ORGANISATION OF TEACHING	The course delivery takes place in the rooms of the Department of Economics. Informational material is distributed through the course page in the e-class platform and the course channel in MS Teams. More specifically, the workload of the module is analyzed as follows:

Type~~Είδος~~	Description~~Περιγραφή~~	WORKLOAD (HOURS)
	Lectures	39
	Home study	78
	Completion of assignments	50
	Preparation for final exam	40
	Final Examination	3
	Total	210

Formatted Table

MODULE ASSESSMENT	In-course assignments 30% Final course essay 70%

5. RECOMMENDED BIBLIOGRAGHY

Suggested Bibliography:	Bessant J και Tidd J. (2017) Καινοτομία και Επιχειρηματικότητα, 3η Αγγλική Έκδοση, Εκδόσεις Τζιόλα (in Greek) Schilling, M. A. (2017) Η Στρατηγική Διοίκηση της Τεχνολογικής Καινοτομίας, 4η Αγγλική Έκδοση, Broken Hil (in Greek)Ι Tidd J. and Bessant J. (2018) Στρατηγική Διοίκηση Καινοτομίας, Broken Hill (in Greek)

White M. and Bruton G. (2010) Η στρατηγική διαχείριση της τεχνολογίας και της καινοτομίας. Κριτική (in Greek)
Ξπαής Γ. (2007) Εισαγωγή στη Διαχείριση Τεχνολογικών Καινοτομιών, Κριτική (in Greek)
Dodgson M., Gann D.M., and Salter A. (2008) The Management of Technological Innovation, Oxford University Press
Dodgson M., Gann D., and Salter A. (2005) Think, Play, Do: Innovation, Technology, and Organization: Technology, Innovation, and Organization, Oxford University Press
Nonaka I. and Takeuchi H. (1995) The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation, Oxford University Press

ECONOMICS OF MONEY AND BANKING

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	ECONOMICS OF MONEY AND BANKING		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
Lectures – Exercises - Case Studies		3 HOURS	7
TYPE OF MODULE	COMPULSORY		
PREREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		

THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO
MODULE'S URL	eclass.uth.gr

2. LEARNING OUTCOMES

Learning Outcomes

The aim of the course is to provide the necessary theoretical background in the scientific field of money and banking and to contrast it with reality and practice in the modern financial market. By the end of the course, the student will have gained knowledge about banking administration issues such as the management of bank assets and liabilities, measurement and hedging of banking risks, but also about the role and effectiveness of the central bank in the modern macroeconomic environment.

General Competencies

The course presents specialized topics in monetary and banking economics. It has as its subject the theory and policy of money as it interacts with the various forms of banking activities. The role of banks in the modern environment is studied, the main risks they face, and various ways of reducing these risks are proposed using financial derivatives and other techniques. Emphasis is also placed on issues of central banking theory, such as the importance of banking supervision, the independence of the central bank, the measurement of the effectiveness of monetary policy and the transmission mechanisms of monetary policy in the real economy. Students acquiring this knowledge will have the necessary skills to work in financial institutions and international organizations, as well as in investment companies.

3.MODULE CONTENT

The course will cover the following subjects:

Financial Intermediation and Trends in Domestic and International Banking. Introduction of new technologies in banking management (financial innovation), deregulation and globalization and their effect on banks and their profitability. The role of capital markets in the process of financial intermediation, the determination of the market interest rate and the role of banks in the process of financial intermediation (information asymmetry, transaction costs, ensuring liquidity).

Banking Structures, Bank Performance, output, and efficiency. Retail and wholesale banking. Economies of scale in banking. Expansion and specialization of operations, the path towards universal banks. Performance measures of a banking institution and key determinants of their

profitability. The effect of mergers and acquisitions on bank efficiency.

The Theory of the Banking Firm. The industrial organization approach to banking. The presentation of the perfect competition model, the Monti-Klein model of a monopoly bank, the oligopolistic competition model.

Principles of Bank Management. The application of a strategic management model in banking management. Asset-liability management, liquidity management, capital adequacy.

Bank Risks & Risk Management. Definitions of the risks faced by banks (credit risk, interest rate risk, currency risk, market risk, etc.). Management of interest rate sensitivity: capital exposure management, (Gap analysis), the concept of duration, duration exposure, curvature and senior duration and the hedging of interest rate risk using derivative products. The management of exchange risk with derivative products.

Bank Regulation. Credit analysis and the concept of securitization. Market risk and the value at risk approach (VaR analysis). Arguments for and against banking supervision. Regulatory capital. Basel Accord. Core and additional equity capital. Insurance coverage of deposits.

Modern Views about Monetary Policy. Aggregate Supply and Demand. Money and Inflation. The rational expectations revolution and neo-Keynesian and neo-classical views on the conduct of monetary policy. The theory of central banking, independence of the central bank, objectives, and possibilities of monetary policy. Discretionary monetary policy versus monetary policy with rules. Presentation of the Taylor rule in monetary policy.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Mixed
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Learning process support through the e-class online platform. Email usage, MSTEAMS.
ORGANISATION OF TEACHING	The lectures of the course take place in the halls of the Department of Economic Sciences. Informational material is distributed through the course page in the e-class, case studies are discussed, exercises are solved, and various videos are analyzed related to applications of theory in practice. More specifically, the workload of the course is broken down as follows: (indicative):

	<table><tr><th>Types</th><th>Description</th><th>WORKLOAD (HOURS)</th></tr><tr><td></td><td>Lectures</td><td>39</td></tr><tr><td></td><td>Study at home</td><td>80</td></tr><tr><td></td><td>Completion of assignments</td><td>50</td></tr><tr><td></td><td>Preparation for the final exam</td><td>39</td></tr><tr><td></td><td>Final Examination</td><td>2</td></tr><tr><td></td><td>Total</td><td>210</td></tr></table>
MODULE ASSESSMENT	Assignment 40% Final Exams 60%
5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	- Siriopoulos C., Papadamou, S. (2014) Introduction to Economics of Banking and Capital Markets, Edition Utopia. In Greek. - Casu B., Girardone C., Molyneux P., (2017 Introduction to Banking, 2nd Edition Tziola. In Greek. - Jagdish Handa, (2002) Monetary Economics, Routledge: London. - Matthews, K & Thompson (2014) The Economics of Banking, John Wiley and Sons. - Mishkin F. S (2018) The Economics of Money, Banking and Financial Markets, (7th international edition), Addison-Wesley.

APPLIED ECONOMIC ANALYSIS

1.GENERAL	
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS
DEPARTMENT	DEPARTMENT OF ECONOMICS

LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	**APPLIED ECONOMIC ANALYSIS**		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
LECTURES		3 HOURS	7
TYPE OF MODULE	COMPULSORY		
PROREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		
MODULE'S URL	https://eclass.uth.gr/courses/ECON_P_187/		

2. LEARNING OUTCOMES

Learning Outcomes

Upon completion of the course, participants are expected to:

- understand sufficiently the basic economic concepts concerning the markets, the sectors of government's policy in the economy, and also fundamentals of the money markets and international transactions
- distinguish and apprehend the interdependence between internal and external factors of markets

General Competencies

The course aims to introduce in a critical way the basics of contemporary Economic Analysis. Emphasis is given on the fundamental problems of the operation of the markets on the micro and the macro level. The course demands little or no previous knowledge of economics.
The course focuses on the conceptual aspects of economic reasoning and not on the theoretical or mathematical demonstrations of economic theorems, in a way to make students able to understand the major aspects of the functioning of markets, their failures and remedies.

3.MODULE CONTENT

A) MICROECONOMIC THEORY: Demand and supply theory, Cost and production analysis, Forms of competition, Market Failures, Theory and Evolution of Firms, Transaction Costs Theory.
B) FUNDAMENTAL MACROECONOMIC INDICATORS- BALANCE OF TRADE AND CURRENT TRADE BALANCE
C) MONETARY THEORY AND POLICY

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Mixed
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	The learning process is supported through the course's e-class online platform, the use of the official email of the department to communicate with students, and MSTEAMS
ORGANISATION OF TEACHING	The lectures of the course takes place in the amphitheaters of the Department of Economics. Informational and learning material is distributed through the e-class platform. More specifically, the workload of the module is analyzed as follows:

Type	Description	WORKLOAD (HOURS)
	Lectures	39
	Study at home	60
	Completion of assignments	40+2

	Preperation for the final exam	36
	Final Examination	3
	Total	180
MODULE ASSESSMENT	Two compulsory tests (40%), Participation (10%), final exam (50%)	

5. RECOMMENDED BIBLIOGRAGHY

Suggested Bibliography:

- Βαρουφάκης, Γ. (2007), Πολιτική Οικονομία, Αθήνα, Gutenberg.
- Bowles S, R. Edwards, & F. Roosevelt, (2005), Κατανοώντας τον Καπιταλισμό, ελλ. μτφ Αθήνα, Gutenberg 2014, Επιμέλεια μτφ Μ. Ζουμπουλάκης.
- Krugman, P. & R. Robin (2014), Μακροοικονομική σε διδακτικές ενότητες, ελλ. μτφ Αθήνα, Gutenberg 2018.
- Nicholson, W., (2005), Μικροοικονομική Θεωρία, ελλ. μτφ. Εκδ. Κριτική, 2008.
- Mankiw, G., Taylor, M.P and Ashwin, A. (2012) Οικονομική των επιχειρήσεων, ελλ. μτφ. Εκδ. Κριτική, 2018

RESEARCH METHODOLOGY SEMINAR III

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**C**
MODULE TITLE	Research Methodology III		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
Lectures - Exercises – Practices- Use of	3 HOURS	7

EXCEL and R programming language		
TYPE OF MODULE	COMPULSORY	
PREREQUISITE MODULES:	NO	
LANGUAGE OF TEACHING AND TESTING:	GREEK	
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO	
MODULE'S URL	eclass.uth.gr	

2. LEARNING OUTCOMES

Learning Outcomes

The teaching of the course " Research Methodology III " aims to:

• Familiarize students with the necessary knowledge and techniques that enable researchers of economic phenomena to quantify and estimate economic relationships governing the operation of economic units and markets using statistical methods.

• Equip students with the necessary tools for verifying and evaluating econometric models and conducting forecasts.

• Introduce students to the analysis of time series data.

By the end of the course, students should be able to:

• Specialize and select an econometric model.

• Estimate a classic linear model.

• Test, examine, and evaluate an econometric model.

• Evaluate and address issues related to violations of the assumptions of a model.

• Design, estimate, and test time series models and perform forecasts.

• Apply the estimated models using the R programming language.

General Competencies

- Data and information search, analysis, and synthesis using the necessary technologies.
- Adaptation to new situations.
- Decision-making.
- Autonomous work.
- Teamwork.
- Work in an international environment.
- Work in an interdisciplinary environment.
- Project design and management.
- Generation of new research ideas.

3.MODULE CONTENT

1. Simple and multiple linear regression (OLS): Assumptions, sample estimation, hypothesis testing, significance tests for variables and linear constraints, simple and adjusted coefficient of determination, properties of estimators.
2. Violations of assumptions: Autocorrelation, heteroscedasticity, statistical tests (White, Durbin-Watson, Breusch-Godfrey), GLS and FGLS estimators, correlation of explanatory variables and error term, multicollinearity, misspecification.
3. Models of limited dependent variables.
4. Vector Autoregressive (VAR) models and causality tests.
5. Non-stationarity and unit root tests.
6. Cointegration and error correction models. Identification in standard and cointegrated systems.
7. Time-varying coefficient models.
8. Traditional panel data models.
9. Dynamic heterogenous panels.
10. Non-stationary panels.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Hybrid
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Support for the learning process is provided through the use of: (a) The e-class electronic platform, institutional email, and the online course on the MS-TEAMS platform. (b) The R programming language.
ORGANISATION OF TEACHING	The course is delivered within the classrooms of the Department of Economic Sciences, utilizing Microsoft Office 365 tools (Word, Excel, PowerPoint) and the R programming language. Lecture slides and supporting materials for each session are already posted on the e-class electronic platform for students to access during the lecture. The existing technological equipment in the classrooms also allows the use of an electronic whiteboard via a WACOM device, which enables writing on presentations and texts with the ability to save enriched texts and presentations. Enriched texts containing comments on the lectures, as well as solutions to exercises and problems, are also uploaded to the e-class of the course after each lecture. Files containing additional exercises and problems for practice and understanding of the course material are provided for each topic. Solutions and comments for these problems are given either during the lectures or during specified office hours announced by the instructor (in special cases, even through email using students' institutional accounts). More specifically, the workload of the module is analyzed as follows:

Type ~~Είδος~~	Description ~~Περιγραφή~~	WORKLOAD ~~Φ~~ (HOURS)
	Lectures	39
	Study at home	80
	Completion of assignments	50
	Preperation for the final exam	39

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	Final Examination 2 Total 210
MODULE ASSESSMENT	EXAMINATION PERIOD A' SEMESTER Individual/Group Assignment: 30% Written Exam: 70% REPEAT EXAMINATION Written Exam: 100%
5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	- Greene, W. H. (2003). Econometric analysis. Pearson Education India. - Wooldridge, J. M. (2015). Introductory econometrics: A modern approach. Cengage learning. - Gujarati, D. N. (2022). Basic econometrics. Prentice Hall. - Stock, J. H., & Watson, M. W. (2015). Introduction to econometrics 3rd ed. - Baltagi, B. H., (2008). Econometric analysis of panel data (Vol. 4). Chichester: Wiley. - Wooldridge, J. M. (2010). Econometric analysis of cross section and panel data. MIT press.

II 3.2 «Financial Technology and Investments»

1st Semester

MSc Applied Economics with specilaziation in Financial Technology and Investments		
MODULES	**TYPE**	**ECTS**
Data Analytics	COMPULSORY	7
Financial Management	COMPULSORY	7
Quantitative methods for making Business Decisions	COMPULSORY	7
Economics of Money and Banking	COMPULSORY	7
Research Methodology Seminar I	COMPULSORY	2

DATA ANALYTICS

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	Data Analytics		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
Lectures - exercises - practices		3 HOURS	7
TYPE OF MODULE	COMPULSORY		
PREREQUISITE MODULES:	COMPUTER SCIENCE II		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		
MODULE'S URL	eclass.uth.gr		
2. LEARNING OUTCOMES			
Learning Outcomes			

After the successful completion of the course, the student should be able to:

• Understand the basic algorithms used in Data Analytics.

• Utilize the features of the Python programming language and the packages of the R statistical programming language for data analysis.

• Business analytics applications.

• Comprehend the fundamental methods of handling Big Data.

General Competencies

The course "Data Analytics" aims to familiarize students with modern technologies and available tools for data management, processing, and analysis. Emphasis is placed on business applications of Data Analytics. The focus of the course is twofold. Students are taught on a theoretical level the basic algorithms of Data Analytics, while simultaneously using them in various examples, developing applications in Python and R.

3.MODULE CONTENT

Introduction to Data Analytics

Applications of Data Analytics in Economics and Finance

Predictive Modeling: Correlation and Segmentation.

Correlation Analysis and Regression Analysis (predictive analytics)

Model Adaptation to Data. The problem of Overfitting and techniques to address it.

Similarity, Neighbors, and Clusters.

Visualization of Results.

Artificial Intelligence and Machine Learning.

Big Data and their handling tools.

Practical Examples in Python and R.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Onsite / Remote / Hybrid

USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Support of the learning process through the eClass platform the unified e-learning system of the University of Thessaly which is supported by the Library and Information Centre and MSTEAMS platform for education.
ORGANISATION OF TEACHING	More specifically, the workload of the module is analyzed as follows:

Type~~Είδος~~	Description~~Περιγραφή~~	WORKLOAD (HOURS)
	Lectures	39
	Study at home	80
	Completion of assignments	50
	Preparation for the final exam	39
	Final Examination	2
	Total	210

MODULE ASSESSMENT	Evaluation Method: - Individual Programming Exercises: 30% - Written Examination: 70%

5. RECOMMENDED BIBLIOGRAGHY

Suggested Bibliography:

- Foster Provost and Tom Fawcett, "Data Science for Business", Edited by Vasilis Verykios, Klidarithmos Publications.
- Paul Deitel and Harvey Deitel, "Introduction to Python for Computer Science and Data", M. Gyuras Publishing.
- Dimitrios Karolidis, "Learn Python Easily", Avakas Publishing.
- Gareth James, Daniela Witten, Trevor Hastie, Robert Tibshirani (2021). "An Introduction to Statistical Learning with Applications in R". ISBN: 978-1-0716-1417-4 Springer. (Free e-book, Access provided by HEAL-Link Greece - University of

	Thessaly) • Karagrigoriou, A., & Kalligeris, E. (2023). Linear Models and Design & Analysis of Experiments with applications in R and Minitab. Kallipos, Open Academic Editions. https://dx.doi.org/10.57713/kallipos-70

FINANCIAL MANAGEMENT

1. GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	FINANCIAL MANAGEMENT		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
Lectures - Exercises		3 hours	7
TYPE OF MODULE	COMPULSORY		
PREREQUISITE MODULES:	No		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	No		

MODULE'S URL	eclass.uth.gr/

2. LEARNING OUTCOMES

Learning Outcomes

The course of Financial Management is connected with the courses of Accounting, Finance, Investment Valuation, and Portfolio Management and is influential towards but also is influenced by these courses but in no case it is identical with them. On the contrary, Financial Management creatively adds to these fields.

General Competencies

By fully attending this course, students will have created a clear, complete, and multi-prismatic perspective of the underlying theory and economic implications will be familiarized with the methods and the tools necessary to assess and critically evaluate investment plans, studying financial components scientifically, and reaching safe and accurate conclusions about the viability and the financial health of firms. They will have a clear perspective about the differences between fundamental and market evaluation and will be able to efficiently avoid the deviations from objective estimations that stem from the bias and subjectivity inherent in the majority of investors.
They will be able to judge whether it would be better to finance a specific investment by lending or by issuing new shares. They will also be able to detect and measure the most important determinants for safely estimating the value, the profitability, and the perspectives of a firm to grow. Moreover, they will become fluent in using the appropriate tools for reducing the risk emanating from the existing capital structure but also from default risk, exchange rate risk, etc. while also will develop capacities to better allocate the existing resources in order to achieve the best risk-adjusted return by taking into consideration the special features of the growth potentials as well as the possibilities to adjust prices to news regarding the specific investment.

3. MODULE CONTENT

This course primarily focuses on investment decision criteria based on the Net Present Value, the Future Value, and the discount rate. Moreover, it offers insights concerning how bonds function by focusing on the market value, the coupon rate, and the yield to maturity. Furthermore, it compares financing through lending with financing through issuing new shares and offers in depth analysis of the advantages and disadvantages of each decision concerning this dilemma. The percentage of re-capitalization, the profit holdings, the

perspectives of growth, and the market share constitute the axis of this analysis. The basic financial ratios are analyzed that reflect the financial condition of the firm. Moreover, the role of the Assets, the Liabilities, and the Equity are analyzed, which are crucial for fighting deficits in balance sheets.

The second part of this course focuses on the concepts of performance and risk which are applied in alternative investments and constitute the basis of fundamental and technical analysis and for estimating the optimal weights of a range of alternative financial assets. Furthermore, the Fama-French 5-factor model is applied and the market efficiency theory is analyzed as well as the possibilities of viability and profitability that it can offer.

The third part of this course focuses on risk management (credit risk, exchange risk, country risk) and is based on the impacts of risk premia on the success of investments and on the difficulties they cause to the efficacy of Financial Management. Emphasis is given on the derivatives market that is employed for hedging against risk stemming from the unpredictability of market prices as these instruments are also adopted for speculative purposes.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	In-person and online
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Teaching is supported by the e-class platform. Use of email, MSTEAMS
ORGANISATION OF TEACHING	Teaching takes place in the classes of the Department of Economics. Informative material is distributed through the course's e-class webpage. ..... More specifically, the workload can be divided as indicated below:

Type	Description	WORKLOAD (HOURS)

	Lectures 39 Study at home 68 Completion of assignments 30 Preparation for the final exam 70 Final Examination 3 Total 210
MODULE ASSESSMENT	Final examination (written) (70%) and individually-prepared writing task of the semester 4.000 words (30%)
5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	• Principles of Corporate Finance, Brealey, Myers, and Allen, Utopia editions, 2nd edition • Papadamou S, and Siriopoulos C., 2015. Principles of Investment Valuation: Financial and Socio-economic perspective. [e-book.] Athens: Association of Greek Academic Libraries. Available at: http://hdl.handle.net/11419/4365

QUANTITATIVE METHODS FOR TAKING BUSINESS DECISIONS

1.GENERAL	
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS
DEPARTMENT	DEPARTMENT OF ECONOMICS
LEVEL OF STUDIES	POSTGRADUATE LEVEL

MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	Quantitative Methods for Taking Business Decisions		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
Lectures – Solutions of Examples and Problems – Use of EXCEL and MINITAB (Statistical Package)		3 HOURS	7
TYPE OF MODULE	COMPULSORY		
PROREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		
MODULE'S URL	https://eclass.uth.gr/modules/document/?course=ECON_P_143		

2. LEARNING OUTCOMES

Learning Outcomes

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

(a) Integrate additional information collected from sampling surveys into the decision-making processes, thus proposing improved decisions regarding the operational problem under consideration and determining at the same time the monetary value of the additional information.

(b) Distinguish between nominal and effective interest rates in compounding, determine the future and present value of an annuity, and construct tables showing (a) Schedule of sinking funds and (b) loans amortization schedule.

(c) Construct linear programming models for problems referring to product selection, identification of transport/transhipment networks, investment portfolio planning and selection, and financial planning, solve these models using SOLVER of EXCEL, and perform the necessary analysis for writing the appropriate management report at a consulting level.
(d) Construct and solve discrete event simulation models for service systems by defining the logical/physical conditions which determine the time evolution of the system, identifying category "B" and "C" activities, and generating artificial observations of activities duration by generating random numbers from statistical probability distributions.

General Competencies

Postgraduate students will acquire the following general competencies:

(a) Understand the necessity of using quantitative methods for decision-making processes in businesses and organizations.

(b) Understand the concepts of time value of money and the effective management of funds.

(c) Understand the processes of constructing, solving, and analyzing mathematical models describing quasi-real operational and financial decision-making problems.

(d) Understand capabilities, comparative advantages, and conditions/limitations of using the proper quantitative method according to the nature of the operational/financial problem and the decision to be taken.

3.MODULE CONTENT

PRIOR – POSTERIOR ANALYSIS IN DECISION MAKING
Payoff tables, Decision making criteria under risk conditions, Applications of the maximum expected payoff and the minimum expected opportunity losses criteria, Prior analysis and expected value of perfect information, Law of total probability and the Bayes theorem, Types of additional information collected from sampling surveys, Posterior analysis using the Binomial distribution, the Poisson distribution, and the Normal distribution, Posterior expected value of perfect information, Expected value of sample information.

FINANCIAL MATHEMATICS
Time value of money and the interest rate, Compound interest, Equivalence of amounts, Future (Maturity) value of an amount, Present value of a future amount and the discount factor, Determination of time and interest rate in compounding, Nominal and Effective interest rates, Ordinary annuities and Annuities due, Term of an annuity, Payment period, Future value of an annuity and determination of the payment amount, Schedule of sinking funds, Present value of an

annuity and determination of the annuity term, Lump sum payment of loans, Amortizing loans and loans amortization schedule.

LINEAR PROGRAMMING

The concepts of activity, limited resources, and objective function in operational/financial linear programming problems, Process of formulating a linear programming model – determination of decision variables – construction of the objective function and constraints of the problem, Entering the linear programming model into EXCEL, Solve the problem using SOLVER, Optimal solution and sensitivity analysis regarding changes (a) in the coefficients of variables in the objective function and (b) in the quantities on the right hand-side of constraints, Applications to problems referring to product selection, identification of transport/transhipment networks, investment portfolio design and selection, and financial planning.

DISCRETE EVENT COMPUTER SIMULATION IN SERVICE SYSTEMS

Forms and examples of service systems – general notation, Arrival/service distributions and the Poisson law, Operational factors for service systems, Fitting the Poisson distribution to empirical arrival/service distributions, Discrete event simulation principles, Simulation of the M/M/1:GD/∞/∞ system, Generation of random numbers from probability distributions using EXCEL and MINITAB, Table of the system time evolution, Estimation of average waiting times in the queue and in the system.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Post graduate students will attend lectures either by face-to-face meetings or by using synchronous distance education methods
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	The learning process is supported through the use of (a) the electronic platform e-class, the institutional email, and the online classroom of the course on the MS-TEAMS platform, and (b) Microsoft EXCEL and MINITAB (statistical package).
ORGANISATION OF TEACHING	The lectures are delivered in the classrooms of the Department of Economics through the use of Microsoft Office 365 tools (Word, EXCEL, Power-Point). Before each lecture, slides and supporting material have already been posted on the course electronic platform “e-class”, so that students can have access to them during the lecture. The existing technological equipment of the above rooms also enables the use of an electronic whiteboard through a WACOM device, which allows writing in presentations and texts with storage capabilities of rich texts and presentations. The enriched texts containing comments on the lectures and solutions to exercises and problems are also posted in the e-class

after the end of each lecture. This uploaded material on e-class includes also files containing additional problems and exercises that students are invited to solve in order to practice and understand the taught material. Solutions and comments on these problems are given either during lectures or during office hours announced by the teacher responsible (in special cases even via e-mail using students' institutional accounts)

More specifically, the workload of the module is analyzed as follows:

Type~~Είδος~~	Description~~Περιγραφή~~	WORKLOAD (HOURS)
	Lectures	39
	Study at home	110
	Completion of assignments	35
	Preparation for the final exam	24
	Final Examination	2
	Total	210

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MODULE ASSESSMENT

FIRST SEMESTER EXAMINATION PERIOD

Individual/group work: 30%

Written exam: 70%

REPEAT EXAMINATION

Written exam: 100%

5. RECOMMENDED BIBLIOGRAGHY

Suggested Bibliography:

– Anderson, D.R., Sweeney, D.J., Williams, T.A., Martin, K., (2014), "*Management Science – Quantitative methods for Making Business Decisions*", *KRITIKI Publication.*

	– Efthymoglou, P., Eleftheriadis, I., (2017), "*Financial Mathematics and elements of Insurance Mathematics*", 4th Edition, BROKEN HILL PUBLISHERS LTD. – Prastakos, G., (2006), "*Management Science, Business Decision Making in the Information Society*", Β΄ Edition, STAMOULIS Publication. – Taylor, B.W. (2018), "*Introduction to Management Science*", BROKEN HILL PUBLISHERS LTD.

ECONOMICS OF MONEY AND BANKING

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	ECONOMICS OF MONEY AND BANKING		
INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**	
Lectures – Exercises - Case Studies	3 HOURS	7	
TYPE OF MODULE	COMPULSORY		
PROREQUISITE MODULES:	NO		

LANGUAGE OF TEACHING AND TESTING:	GREEK
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO
MODULE'S URL	eclass.uth.gr

2. LEARNING OUTCOMES

Learning Outcomes

The aim of the course is to provide the necessary theoretical background in the scientific field of money and banking and to contrast it with reality and practice in the modern financial market. By the end of the course, the student will have gained knowledge about banking administration issues such as the management of bank assets and liabilities, measurement and hedging of banking risks, but also about the role and effectiveness of the central bank in the modern macroeconomic environment.

General Competencies

The course presents specialized topics in monetary and banking economics. It has as its subject the theory and policy of money as it interacts with the various forms of banking activities. The role of banks in the modern environment is studied, the main risks they face, and various ways of reducing these risks are proposed using financial derivatives and other techniques. Emphasis is also placed on issues of central banking theory, such as the importance of banking supervision, the independence of the central bank, the measurement of the effectiveness of monetary policy and the transmission mechanisms of monetary policy in the real economy. Students acquiring this knowledge will have the necessary skills to work in financial institutions and international organizations, as well as in investment companies.

3.MODULE CONTENT

The course will cover the following subjects:

Financial Intermediation and Trends in Domestic and International Banking. Introduction of new technologies in banking management (financial innovation), deregulation and globalization and their effect on banks and their profitability. The role of capital markets in the process of financial intermediation, the determination of the market interest rate and the role of banks in the process

of financial intermediation (information asymmetry, transaction costs, ensuring liquidity).

Banking Structures, Bank Performance, output, and efficiency. Retail and wholesale banking. Economies of scale in banking. Expansion and specialization of operations, the path towards universal banks. Performance measures of a banking institution and key determinants of their profitability. The effect of mergers and acquisitions on bank efficiency.

The Theory of the Banking Firm. The industrial organization approach to banking. The presentation of the perfect competition model, the Monti-Klein model of a monopoly bank, the oligopolistic competition model.

Principles of Bank Management. The application of a strategic management model in banking management. Asset-liability management, liquidity management, capital adequacy.

Bank Risks & Risk Management. Definitions of the risks faced by banks (credit risk, interest rate risk, currency risk, market risk, etc.). Management of interest rate sensitivity: capital exposure management, (Gap analysis), the concept of duration, duration exposure, curvature and senior duration and the hedging of interest rate risk using derivative products. The management of exchange risk with derivative products.

Bank Regulation. Credit analysis and the concept of securitization. Market risk and the value at risk approach (VaR analysis). Arguments for and against banking supervision. Regulatory capital. Basel Accord. Core and additional equity capital. Insurance coverage of deposits.

Modern Views about Monetary Policy. Aggregate Supply and Demand. Money and Inflation. The rational expectations revolution and neo-Keynesian and neo-classical views on the conduct of monetary policy. The theory of central banking, independence of the central bank, objectives, and possibilities of monetary policy. Discretionary monetary policy versus monetary policy with rules. Presentation of the Taylor rule in monetary policy.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Mixed
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Learning process support through the e-class online platform. Email usage, MSTEAMS.
ORGANISATION OF TEACHING	The lectures of the course take place in the halls of the Department of Economic Sciences. Informational material is distributed through the course page in the e-class, case studies are discussed, exercises are solved, and various videos are analyzed related to applications of theory in practice.

More specifically, the workload of the course is broken down as follows: (indicative):

Types	Description	WORKLOAD (HOURS)
	Lectures	39
	Study at home	80
	Completion of assignments	50
	Preparation for the final exam	39
	Final Examination	2
	Total	210

MODULE ASSESSMENT

Assignment 40%

Final Exams 60%

5. RECOMMENDED BIBLIOGRAGHY

Suggested Bibliography:

- Siriopoulos C., Papadamou, S. (2014) Introduction to Economics of Banking and Capital Markets, Edition Utopia. In Greek.
- Casu B., Girardone C., Molyneux P., (2017 Introduction to Banking, 2nd Edition Tziola. In Greek.
- Jagdish Handa, (2002) Monetary Economics, Routledge: London.
- Matthews, K & Thompson (2014) The Economics of Banking, John Wiley and Sons.
- Mishkin F. S (2018) The Economics of Money, Banking and Financial Markets, (7th international edition), Addison-Wesley.

RESEARCH METHODOLOGY SEMINAR I

1.GENERAL	
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS

DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		SEMESTER OF STUDY	A
MODULE TITLE	Research Methodology seminar I		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	ECTS
			2
TYPE OF MODULE	COMPULSORY		
PROREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		
MODULE'S URL	eclass.uth.gr		

2. LEARNING OUTCOMES

Students will be able to do the following:

- To plan a proper design of a research as well as the identification of the central question and the relative assumptions is a necessary precondition for the scientific analysis of any social and economic phenomenon.
- To implement several research methods that based on (i) specific principles and concepts, (ii) selection of appropriate research tools concerning the preparation and implementation of the research (collection and organization of information in databases, sample, sampling procedures, questionnaires, and interviews) and finally (iii) tools and methods for evaluation and analysis of the collected data / information.
- To understand the practice of empirical scientific research which, under an appropriate methodological design, ensures objective measurements and estimations of the examined phenomena and allows the systematic verification of the research's hypotheses.

General Competencies

- Research and analysis of complicate data with the use of the appropriate methods and tools
- Capacity to develop autonomous work
- Capacity to develop team work

- Working in a multidisciplinary environment
- Production of new innovative research ideas

3.MODULE CONTENT

The primary objective of this course is to provide students with adequate knowledge on the logical path of scientific research and the choice of appropriate methods – tools for the analysis of the potential development issues. This specialized knowledge gives to students the opportunity both to design and implement a research and to acquire critical thinking necessary to solve complex issue and problems.

Consequently, the course includes the following:
1. Concepts, principles, importance and purposes of scientific research
2. Identification and formulation of the central problem (research question) and of the assumptions
3. Investigation of the field, literature research
4. Structuring the analysis concerning, investigation of data resources: central assumptions, main themes for investigation, identification of quantitative and / or qualitative variables in the model, selection of appropriate research method
5. Specificities of primary and secondary research, search and selection of data sources
6. Implementation of tools for primary research: sample, sample size, sampling methods, alternative forms of questionnaires, coding questions..
7. Data entry technics and reliability tests
8. Statistical analysis of data: (a) simple exploratory statistical analysis, (b) advanced exploratory analysis: Exploratory Factor Analysis (EFA) and Principal Component Analysis (PCA), (c) Confirmatory Factor Analysis (CFA), (d) regression and projections
9.Verification of the main assumptions of the model, discussion on the findings as regards existing theories and approaches, drawing conclusions.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Mixed (face to face and hybrid) ➢ Use of e-platform, e-class ➢ Use of Ms-Teams programme
ORGANISATION OF TEACHING	More specifically, the workload of the module is analyzed as follows:

Type	Description	WORKLOAD (HOURS)
	Lectures	20
	Study at home	15
	Completion of assignments	15

	Total 50
MODULE ASSESSMENT	Final grade is derives from: Writing a scientific assignment (100%) 4.000-6.000 words based on Scientifics articles
5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	- Brotherton, B. (2008) Researching Hospitality and Tourism: A Student Guide, London και Thousand Oaks: Sage. - Δαφέρμος, Β. (2013), Παραγοντική ανάλυση: Διερευνητική με SPSS και επιβεβαιωτική με το LISREL και το AMOS, Θεσσαλονίκη: Ζήτη. - Ζαφειροπούλος, Κ. (2005), Πως γίνεται μια επιστημονική εργασία; Αθήνα: Κριτική. - Finn, M., Elliott-White, M., Walton. M. (2000) Research Methods for Leisure and Tourism, Harlow: Pearson Education. - Grawitz, M. (2006), Μέθοδοι των κοινωνικών επιστημών, Τόμος Α' και Β', Αθήνα: Οδυσσέας

2nd SEMESTER

MSc Applied Economics with specialiazation in Financial Technology and Investments		
MODULES	**TYPE**	**ECTS**
Technology and Financial Transactions	COMPULSURY	7
Money and Capital Markets	COMPULSURY	7
Financial Forecasts	COMPULSURY	7
Selective Module *	SELECTIVE	7
Research Methods Seminar II	COMPULSURY	2

*Selective Modules (one of the following)		
MODULES	**TYPE**	**ECTS**
Financial Accounting	SELECTIVE	7
Measurement of Productivity and Efficiency	SELECTIVE	7
Project Management	SELECTIVE	7

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TECHNOLOGY AND FINANCIAL TRANSACTIONS

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**B**
MODULE TITLE	Technology of Financial Transactions (FinTech)		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
Lectures - exercises - practices		3 HOURS	7
TYPE OF MODULE	COMPULSORY		
PROREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		
MODULE'S URL	eclass.uth.gr		
2. LEARNING OUTCOMES			
Learning Outcomes			
Upon successful completion of the course, the student should be able to:			

• Understand modern financial technologies (FinTech) and their applications.

• Utilize both traditional and modern digital payment systems through third-party providers (PayTech).

• Understand the principles of crowdfunding.

• Comprehend automated investment advisors (roboadvisors) and the mechanisms of algorithmic trading (algotrading).

• Gain in-depth understanding of blockchain technology.

• Have thorough knowledge of the principles of cryptoeconomics and decentralized finance (DeFi).

General Competencies

The course 'Financial Transactions Technology' (FinTech) aims to familiarize students with modern financial technologies and the available tools arising from the digitization of the economy. Specifically, emphasis is placed on the field of cryptoeconomics, where distributed transaction mechanisms and the applications based on them are examined in detail. These are contrasted with traditional centralized financial transaction systems, and the advantages as well as challenges of the new technologies are presented comparatively. The platforms of Bitcoin and Ethereum are utilized for an in-depth study of their technical characteristics and the implementation of services based on blockchain.

3.MODULE CONTENT

The module covers a wide range of subjects related to financial technology (FinTech) and the cryptoeconomy. In particular:

1. Introduction to Financial Transaction Technologies (FinTech) and Cryptoeconomics
2. Digital Payment Systems
3. Payment Systems through Third-Party Providers (PayTech)
4. Participatory Financing (Crowdfunding)
5. Algorithmic Trading (Algotrading) and Automated Investment Advisors (Robotrading)
6. Blockchain Technology and its Applications
7. Cryptocurrencies and Cryptotokens
8. Decentralized Finance (DeFi)
9. Methods of Capital Generation in the Cryptoeconomy and Cryptotoken Valuation
10. Practical examples on the Bitcoin and Ethereum platforms

<table>
<tr><td colspan="2">4. TEACHING AND LEARNING METHODS EVALUATION</td></tr>
<tr><td>TEACHING METHOD</td><td>Onsite / Remote / Hybrid</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES</td><td>Support of the learning process through the eClass platform the unified e-learning system of the University of Thessaly which is supported by the Library and Information Centre and MSTEAMS platform for education.</td></tr>
<tr><td>ORGANISATION OF TEACHING</td><td>More specifically, the workload of the module is analyzed as follows:
<table>
<tr><th>Type</th><th>Description</th><th>WORKLOAD (HOURS)</th></tr>
<tr><td></td><td>Lectures</td><td>39</td></tr>
<tr><td></td><td>Study at home</td><td>80</td></tr>
<tr><td></td><td>Completion of assignments</td><td>50</td></tr>
<tr><td></td><td>Preparation for the final exam</td><td>39</td></tr>
<tr><td></td><td>Final Examination</td><td>2</td></tr>
<tr><td></td><td>Total</td><td>210</td></tr>
</table></td></tr>
<tr><td>MODULE ASSESSMENT</td><td>Assessment method:

- Individual work (projects): 50% (presentation - examination of the project 20%, final deliverable of the project 30%)

- Written examination: 50%</td></tr>
<tr><td colspan="2">5. RECOMMENDED BIBLIOGRAGHY</td></tr>
<tr><td>Suggested Bibliography:</td><td>1. Nikos Daskalakis, Panagiotis Georgitsis, "FinTech and Cryptoeconomy", Propompos Publications.
2. Andreas M. Antonopoulos, "Mastering Bitcoin", Translated into</td></tr>
</table>

	Greek by Dimosthenis Chatzinikolaou, freely available under CC-BY-SA license. 3. Andreas M. Antonopoulos, "Mastering Ethereum", English edition, freely available under CC-BY-SA license.

MONEY AND CAPITAL MARKETS

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	MONEY AND CAPITAL MARKETS		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
Lectures – Exercises - Case Studies		3 HOURS	7
TYPE OF MODULE	ELECTIVE		
PREREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		
MODULE'S URL	eclass.uth.gr		

2. LEARNING OUTCOMES

Learning Outcomes

The aim of the course is to delve into the issues of the money and capital markets in order to provide the possibility of a more complete understanding of the ways in which capital markets work and how investment strategies are developed. Upon successful completion of the course requirements, students are expected to:

- understand the distinction between real and financial assets
- understand how the money and the capital markets work
- understand how investment companies and mutual funds work
- analyze portfolios of securities and measure their performance and risk
- understand capital markets products and their valuation methods
- develop investment strategies
- apply computer aided methods of market reflection, such as technical analysis.
- formulate original ideas and express them in the form of research papers.

General Competencies

The course presents specialized topics in the field of money and capital markets. Basic financial instruments and investment strategies that can be developed in the modern financial environment are studied. Topics related to securities valuation and portfolio structuring are analyzed. Special emphasis is also placed on investment companies, behavioral finance, and technical analysis. Students acquiring this knowledge will have the necessary skills to work in financial institutions and international organizations, as well as in investment companies.

3.MODULE CONTENT

The course will cover the following subjects:

Introduction to the Financial Environment - Asset classes and financial instruments

- The concept of investment.
- Distinguish between real and financial assets
- Risk-return trade-off and efficient valuation
- Financial crisis of 2008 - Relationships between the financial system and the "real" side of the economy
- Investing in securities: Money market vs capital market. Equity securities, debt securities,

derivative products. **Investment Decision Process and Investment Strategies – Return / Risk – Investment Companies and Mutual Funds** • The fundamentals of risk and return. Degree of risk aversion. • Open-end and closed-end funds, ETFs **Principles of Portfolio Management.** • Markowitz's Portfolio Theory. • The concept of diversification. **Capital Markets and Asset Pricing** • Capital market theory (CAPM, APT, Fama-French models) • The hypothesis of the efficient Market (Market Efficiency) **Gold as an investment product** • Gold derivatives • The main characteristics and factors affecting the demand and supply of gold are presented. •Special reference is made to the role of gold in an investment portfolio as a hedger or diversifier of risk. **Behavioral Finance & Technical Analysis** • Presentation of the basic principles of behavioral finance • Development of technical systems to produce buy and sell signals for securities trading. **Bond Valuation and Bond Portfolio Management** • Types of bond securities. • Valuation of Bonds • Bond Portfolios
4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Mixed
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Learning process support through the e-class online platform. Email usage, MSTEAMS.
ORGANISATION OF TEACHING	The lectures of the course take place in the halls of the Department of Economic Sciences. Informational material is distributed through the course page in the e-class, case studies are discussed, exercises are

solved, and various videos are analyzed related to applications of theory in practice.

More specifically, the workload of the course is broken down as follows: (indicative)

Types	Description	WORKLOAD (HOURS)
	Lectures	39
	Study at home	80
	Completion of assignments	50
	Preparation for the final exam	39
	Final Examination	2
	Total	210

MODULE ASSESSMENT

Assignment 40%

Final Exams 60%

5. RECOMMENDED BIBLIOGRAGHY

Suggested Bibliography:

- Bodie Zvi, Kane Alex, Marcus Alan J. (2014) Investments, Edition Utopia
- Lim Mark Andrew (2023) A Complete Guide for Technical Analysis BROKEN HILL PUBLISHERS LTD. Editing In Greek Papadamou, S. and Fassas, A.
- Laopodis, N. (2012). Understanding investments: theories and strategies. Routledge.
- Papadamou, S. (2009), Portfolio Management: A modern guide Edition Gutenberg
  - Rajib, P. (2014). Commodity derivatives and risk management. PHI Learning Pvt. Ltd..

FINANCIAL FORECASTS

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**B**
MODULE TITLE	Financial Forecasts		
INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**	
Lectures - Exercises - Practices	3 HOURS	7	
TYPE OF MODULE	COMPULSORY		
PROREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		
MODULE'S URL	eclass.uth.gr		
2. LEARNING OUTCOMES			
Learning Outcomes			

Upon completing the course, students will be able to:

(a) apply and analyze the properties of ARIMA models, as well as estimate, analyze, and evaluate these models based on their predictive abilities,

(b) understand ARCH and GARCH models and be able to apply them to financial data displaying volatility clustering and asymmetric dynamics,

(c) apply cointegration techniques to model long-run and short-run relationships among economic variables,

(d) apply techniques for vector autoregressive models (VAR), causality tests, and

(e) apply and analyze traditional models with panel data.

General Competencies

The general objective of the course is for students to understand the utility of applying econometric methods and models. Specific goals include:
(a) Introducing students to fundamental concepts of applied econometrics,
(b) Familiarizing them with the principles governing cointegration techniques for modeling long-run and short-run relationships among economic variables,
(c) Introducing them to methods so they can comprehend ARCH and GARCH models and apply them to financial data displaying volatility clustering and asymmetric dynamics,
(d) Equipping them with the ability to apply and analyze both traditional and dynamic panel data models,
(e) Providing them with the necessary computational skills using econometric software packages.

3.MODULE CONTENT

- Simple and multiple regression.
- Modeling volatility: ARCH-GARCH models.
- Vector Autoregressive (VAR) models and causality tests.
- Non-stationarity and unit root tests.
- Cointegration and error correction models. Identification in stationary and cointegrated systems.
- Traditional panel data models.
- Dynamic heterogenous panels and non-stationary panels.

4. TEACHING AND LEARNING METHODS EVALUATION

<table>
<tr><td>TEACHING METHOD</td><td>In-person/ online/ Hybrid</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES</td><td>This statement appears to describe the support of the learning process through the e-class, involving the use of email and Microsoft Teams (MS Teams).</td></tr>
<tr><td>ORGANISATION OF TEACHING</td><td>More specifically, the workload of the module is analyzed as follows:
<table>
<tr><th>type</th><th>description</th><th>WORKLOAD (HOURS)</th></tr>
<tr><td></td><td>Lectures</td><td>39</td></tr>
<tr><td></td><td>Study at home</td><td>80</td></tr>
<tr><td></td><td>Completion of assignments</td><td>50</td></tr>
<tr><td></td><td>Preparation for the final exam</td><td>39</td></tr>
<tr><td></td><td>Final Examination</td><td>2</td></tr>
<tr><td></td><td>Total</td><td>210</td></tr>
</table></td></tr>
<tr><td>MODULE ASSESSMENT</td><td>Written exams/ assignment</td></tr>
<tr><td colspan="2">5. RECOMMENDED BIBLIOGRAGHY</td></tr>
<tr><td>Suggested Bibliography:</td><td>- Brooks C., 2002, Introductory Econometrics for Finance, Cambridge University Press.
- Tsay, R. S. (2013). Multivariate time series analysis: with R and financial applications. John Wiley & Sons.
- Wooldridge, J. M. (2019). Introductory econometrics: A modern approach. Cengage learning.
- Zivot, E. (2017). Introduction to computational finance and financial econometrics. Chapman & Hall Crc.</td></tr>
</table>

RESEARCH METHODS SEMINAR II

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	Research Methods Seminar II		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
Lectures and hands-on training		3 HOURS	2
TYPE OF MODULE	COMPULSORY		
PROREQUISITE MODULES:	Research Methods Seminar I		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		
MODULE'S URL	https://eclass.uth.gr/courses/ECON_P_190/		
2. LEARNING OUTCOMES			
Learning Outcomes			

This seminar provides a comprehensive introduction of statistics for business and economics and an intensive, hands-on introduction to the principles and practice of data visualization. As a result of taking this course, the students should be able to: 1. Apply and interpret descriptive statistics. 2. Formulate, identify and apply inferential statistics. 3. Analyse the association of variables using regression and ANOVA analyses. 4. Conduct empirical work using statistical software and interpret results 5. Take their data from Excel into visualization software, transform it to easy-to-understand dynamic graphics and interactively explore what-if scenarios.

General Competencies

This course provides the elementary foundations in statistics as well as the prerequisites for understanding the trends and challenges in data analysis and visualization.
The students will find the resources to learn the science behind data analysis, how businesses use data to their advantage. Utilizing the tools that support Business Intelligence can give organizations an edge, letting them make better, data-driven decisions.

3.MODULE CONTENT

Learning module 1: Statistical analyses using statistical package IBM SPSS Statistics

- Data import, data management
- Quantitative and qualitative variables, attributes, scales of measurement (nominal, ordinal, interval and ratio).
- Importing a survey questionnaire to SPSS
- Data Presentation: tabular and graphical. Statistical charts, crosstabulation and independence of data with special reference to attributes. Coding, missing values, conditional and arithmetic operations.
- Descriptive statistics: measures of central tendency, measures of dispersion.
- Inferential statistics. Basic statistical tests in SPSS. T-tests, analysis of variance (ANOVA), Chi-square test and contingency tables.
- Bivariate data: Definition, scatter diagram, simple, partial and multiple correlation, determine the strength of the correlation via the correlation coefficient. Simple and multiple linear regression. Multiple linear regression assumptions and diagnostics.

Learning module 2: Visual analytics

- Basic plotting and visualization. Statistical and specialty plots in Business Intelligence and Analytics Software Tableau.
- Best practices for creating different plot types, motion charts, interactive visualizations.
- Building, sharing and customizing automated reports including data, text and graphics.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	In situ and online lectures with hands-on computer training classes.
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Teaching and learning process will be enhanced by eclass, email and MSTEAMS. Software licenses (IBM SPSS Statistics and Tableau latest versions) are offered to students at the beginning of the course. After completing the course, students have free one-year Tableau licenses through "Tableau for Students software licensing program".
ORGANISATION OF TEACHING	The hands-on training is conducted in the Computer Lab. Hands-on exercises and relevant materials (software user manuals, e-books, dictionary of statistical terms, white papers) will be provided for students to try out the applications, and to experiment with data analysis and interpretation and analytical reasoning in reports. More specifically, the workload of the module is analyzed as follows:

Type~~Είδος~~	Description~~Περιγραφή~~	WORKLOAD (HOURS)
	Lectures	39
	Study at home	10
	Completion of assignments	-
	Preparation for the final exam	9
	Final Examination	2
	Total	60

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MODULE ASSESSMENT	Online exam in the classroom
5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	- Aljandali A. (2016). Quantitative Analysis and IBM® SPSS®

	Statistics. A Guide for Business and Finance. Springer Cham. Hardcover ISBN 978-3-319-45527-3 (e-book) - Cleophas, Ton J., Zwinderman, Aeilko H. (2015). SPSS for Starters and 2nd Levelers. Springer International Publishing, ISBNs 978-3-31-920599-1, 978-3-31-920600-4. (e-book) - Martin Lee Abbott (2016). Using Statistics in the Social and Health Sciences with SPSS® and Excel®. John Wiley & Sons, Inc. Print ISBN: 9781119121046 Online ISBN: 9781119121077 - Lind D. and Marchal W. and Wathen S. (2018). Statistical Techniques in Business and Economics, 17th Edition, McGraw Hill Education.

Selective Modules

FINANCIAL ACCOUNTING

1. GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**B**
MODULE TITLE	FINANCIAL ACCOUNTING		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
Lectures – problems - calculations		3 hours	7
TYPE OF MODULE	COMPULSORY, OPTIONAL		

PREREQUISITE MODULES:	No
LANGUAGE OF TEACHING AND TESTING:	Greek
THE MODULE IS OFFERED TO ERASMUS STUDENTS	No
MODULE'S URL	eclass.uth.gr/

2. LEARNING OUTCOMES

Learning Outcomes

After successfully completing the lessons, students should be able to:

- Compose the financial accounts (balance sheet, income statement, and cash flow statement)
- Analyze and register accounting events and transactions
- Be accustomed with evaluating inventories
- Be accustomed with financial reporting of tangible and intangible fixed assets
- Conduct consolidation of financial statements

General Competencies

The course of 'Financial Accounting' aims to familiarize the students with accounting tasks, registration of transactions in accounts, and the overall accounting system. The main purpose of this course is to learn to the students the procedure of composing the main financial accounts, I.e. the balance sheet, the income statement, and the cash flow statement. Finally, this course presents the procedure of consolidation of financial statements.

3. MODULE CONTENT

Analysis and accounting entry of transactions in book accounts

Composing balance sheets and Income Statements

Composing Cash Flow Statements

Inventories valuation

Tangible fixed assets

Intangible fixed assets

Consolidation of financial statements

Valuation of financial statements

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	In person and online
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Teaching is supported by the e-class platform. Use of email, MSTEAMS
ORGANISATION OF TEACHING	Teaching takes place in the classes of the Department of Economics. Informative material is distributed through the course's e-class webpage. More specifically, the workload can be divided as indicated below::

Type	Description	WORKLOAD (HOURS)
Lectures		39
Study at home		80

	Completion of assignments	50
	Preparation for the final exam	39
	Final Examination	2
	Total	210
MODULE ASSESSMENT	Assessment by: - group assignment: 30% - exam: 70%	
5. RECOMMENDED BIBLIOGRAGHY		
Suggested Bibliography:	- Gikas Dimitrios and Afroditi Papadaki, «Financial Accounting», Benos editions. - Hevas Dimosthenis and Apostolos Ballas, «Financial Accounting», Benos editions. - Elliott, B. and J. Elliott, «Financial Accounting and Reporting», Pearson Education. - Harrison W., C. Horngren and W. Thomas, «Financial Accounting», Broken Hill Publishers.	

MEASUREMENT OF PRODUCTIVITY AND EFFICIENCY

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**B**

MODULE TITLE	MEASUREMENT OF PRODUCTIVITY AND EFFICIENCY		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
Lectures - Exercises - Actions		3 HOURS	7
TYPE OF MODULE	COMPULSORY		
PREREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		
MODULE'S URL	eclass.uth.gr		

2. LEARNING OUTCOMES

Learning Outcomes

The course aims to provide students with the tools of applied economic analysis to be able to answer the following questions:

• How can I determine the production function of an economic unit?

• How can I measure the technical efficiency of organizations and other economic units?

• How can I measure the productivity of organizations and other economic units?

• How can I identify and propose optimization goals for the production process of organizations and other economic units?

This course is designed to equip students with the knowledge and analytical skills necessary to address these questions in the context of economic analysis and

optimization.

General Competencies

The student will have the ability to measure productivity and efficiency using the Data Envelopment Analysis (DEA) method. They will also be able to recognize, understand, and create Malmquist productivity indices and apply the measurement of technical efficiency to organizations and economic units such as banks, hotels, hospitals, and others.

This indicates that the student will acquire skills related to advanced economic analysis techniques, particularly in the context of productivity and efficiency measurement in various types of organizations and economic entities.

3.MODULE CONTENT

The course consists of lectures with a particular emphasis on applied specialized topics in the economics of production. The central aim of the course is to understand fundamental concepts of economic production, with an emphasis on learning and applying methodologies for measuring productivity and efficiency in economic units and organizations.

• Basic introductory concepts related to technology and scale efficiency.

• Profit maximization theory and scale efficiency.

• Production theory and production frontier analysis.

• Parametric and non-parametric approaches to measuring production efficiency.

• Measurement of productivity using the Malmquist index.

This course covers a range of topics related to the economics of production, focusing on practical applications and measurement methodologies for productivity and efficiency in various economic units and organizations.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	in-person and remote activities or learning (hybrid)
USE OF INFORMATION AND COMMUNICATION	"Supporting the learning process through the e-class electronic platform. Using email and Microsoft Teams."

TECHNOLOGIES	This statement indicates the use of electronic platforms and communication tools like email and Microsoft Teams to facilitate and enhance the learning process.
ORGANISATION OF TEACHING	More specifically, the workload of the module is analyzed as follows:

Type~~Είδος~~	Description~~Περιγραφή~~	WORKLOAD (HOURS)
	Lectures	39
	Study at home	80
	Preperation for the final exam	90
	Final Examination	1
	Total	210

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MODULE ASSESSMENT	100% Individual Presentation of a Scientific Article.

5. RECOMMENDED BIBLIOGRAGHY

Suggested Bibliography:

- Coelli, TJ, Rao, D.S.P., O'Donnell CJ, Battese GE. (2005). An introduction to efficiency and productivity analysis, Second edition, Springer.
- Ray, S. C. (2004). Data envelopment analysis: theory and techniques for economics and operations research. Cambridge university press
- Varian R. H. (1992). Microeconomic Analysis, Third edition, Norton.

PROJECT MAMAGEMENT

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**B**
MODULE TITLE	Project Management		
INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**	
Lectures – exercises - activities	3 HOURS	7	
TYPE OF MODULE	ELECTIVE		
PROREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		
MODULE'S URL	https://eclass.uth.gr/courses/ECON_P_114/		
2. LEARNING OUTCOMES			
Learning Outcomes			

On successful completion of the course students should be able to:

- Identify, develop, classify and plan the desired change that will be carried out by the implementation of a project or program.
- Quote, summarize and explain the concepts and the necessity of integrated management of all project's phases.
- Use, resolve, combine and assess the importance of key parameters of each project.
- Define and describe the limitations that each parameter has on the successful implementation of the project.
- Obtain the composition of these parameters for the development of a management plan for these parameters in each phase of the project's life cycle.
- Describe and develop the appropriate project selection method for a portfolio and/or project program.
- Adequately organize, analyze, validate and assess project and program progress.

General Competencies

The course aims to develop and cultivate the following general abilities of the students:

- Search, analysis and synthesis of data and information, using the necessary technologies
- Autonomous work
- Teamwork
- Work in an interdisciplinary scientific environment
- Collaboration skills
- Communication skills

3.MODULE CONTENT

Introduction to Project Management - Historical references, concepts and definitions for project, program and portfolio - Why there are organizations that apply management by project - How are they different from other organizations - How do they work and what is their value - Organizations that support project management in the world and in Greece

Project Management Standards (PMI – IPMA – PM^2)

Understanding the problematic of a Project - Defining Success and Failure in a Project – Project's Lifecycle - The Pillars of Project Management [Governance, Lifecycle, Processes, Techniques and Tools]

Stakeholder management - The Logical Framework Approach (LFA) - Project integration and Scope

management

From design to scheduling (Building AoN - AoA project networks, Critical Path Method, PERT/CPM, time-cost trade-off in projects)

Resource requirements, resource availability, Resource Management, the Resource Constrained Project Scheduling Problem, resource balancing in the schedule.

Monitoring of project progress (monitoring), identification of risks (risk management), assessment of the progress of the financial and physical object of the project (Earned Value Management), Schedule Risk Analysis

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	In class
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Learning process is supported through the e-class online platform. Use of email.
ORGANISATION OF TEACHING	The delivery of the course takes place in the halls of the Department of Economic Sciences. Informational material is distributed via the course page in the e-class. More specifically, the workload of the course is analyzed as follows: (indicative)

Description	WORKLOAD (HOURS)
Lectures	39
Study at home	80
Completion of assignments	50
Preparation for the final exam	39
Final Examination	2
Total	210

MODULE ASSESSMENT	There are two (2) ways for the final mark: Options between A and obligatory B and C. A) One (1) group assignment (up to two people that counts for 50% of the total mark) or alternatively a final exam with development, calculation and multiple-choice questions (also counts for 50% of the total mark) B) Two mid-term exams (half an hour) with calculation questions (counts for 15% each, a total of 30%) C) Four short and one long-term group activities in-class tests (cumulative counts for 20% of the total score) The rating scale is: 1-10.
5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	- Pinedo, M.L. (2008), Scheduling: Theory, Algorithms and Systems (3rd edition), Springer Science+Business Media, LLC - Rayner P. and Reiss G. (2012), Portfolio and Programme Management Demystified, Routledge ,second edition - Renz, P.S. (2007), Project Governance, Physica-Verlag Heidelberg - Schwindt, C. (2005), Resource Allocation in Project Management, Springer-Verlag Berlin Heidelberg - Tonchia, S. (2008), Industrial Project Management: Planning, Design and Construction, Springer-Verlag Berlin Heidelberg

3rd Semester

MODULE	TYPE	ECTS
DISSERTATION	COMPULSORY	30
Alternative instead of dissertation all the following modules		
Business Strategy	COMPULSORY	7
Technology Strategy	COMPULSORY	7
Spatial Development and Strategic Planning	COMPULSORY	7
Applied Economic Analysis	COMPULSORY	7
Research Methodology Seminar III	COMPULSORY	2

DISSERTATION

1.GENERAL		
MODULE TITLE	DISSERTATION	
INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
		30
TYPE OF MODULE	SELECTIVE	
PREREQUISITE MODULES::	MODULES OF 1ST AND 2ND SEMESTER	
LANGUAGE OF TEACHING AND TESTING:	Greek, English	
THE MODULE IS OFFERED TO ERASMUS STUDENTS	No	
MODULE'S URL	eclass.uth.gr/eclass/courses	

2. LEARNING OUTCOMES

The main learning objective to be achieved during the completion of the master's thesis is for the student to develop the necessary knowledge background related to the critical understanding of the subject of the master's thesis, as well as the systematic application of research methodologies and techniques. Specifically, upon completion of the master's thesis, the student should demonstrate that:

• Understands, critically evaluates, and applies techniques for defining and developing a research topic that constitutes a relevant research problem in the field of Applied Economics.

• Selects and formulates specific research objectives and problems that exhibit (to some extent at a master's level) scientific originality and practical relevance.

• Understands and assesses the relationships between research objectives-problems, scientific literature, research methodologies, data collection and analysis techniques, drawing conclusions, and ultimately methods for making managerial decisions.

• Applies research search processes and engages in the critical review of scientific literature relevant to the research topic.

• Conducts research and formulates conclusions that are understandable and lead to interesting results.

• Understands the differences between quantitative research and qualitative research strategies and applies them either independently or in combination, depending on the specific requirements of the research.

• Understands the advantages and disadvantages of research techniques, systematically applies research techniques, and documents the choices made.

• Relies on primary and/or secondary data, which are evaluated for sufficiency, reliability, and validity.

• Formulates understandable and useful conclusions that demonstrate knowledge of the subject and the ability to critically assess other relevant published research results.

• Understands and formulates limitations and weaknesses of the research work.

• Identifies possible directions for future research in the specific area and in accordance with the initial research objectives, and finally

• Broadens their overall knowledge background to enhance further research and professional pursuits.

General Competencies

The postgraduate thesis aims for the student to develop, through a primarily personal research process and under the guidance of the supervisor, a thesis on the chosen subject-object proposed following a relevant proposal. The aforementioned thesis should present:

• A clearly defined contribution to the field of Applied Economics, either through the conduct of original research or through the examination and application of relevant theories and methodologies.

• A well-documented research methodology and the systematic application and utilization of appropriate techniques for data collection, analysis, and processing.

• Comprehensive knowledge of the research subject of the thesis, including the ability to critically evaluate relevant literature.

3. MODULE CONTENT

The research objectives and the content of each postgraduate thesis (Master's thesis) should be relevant to the academic subject of the Master's program (MSc) and should fall within a specific academic field or areas of knowledge.

The research methods involve techniques for collecting and processing reliable data, as well as their documentation through scientific methods (e.g., field research, literature review, statistical analysis, etc.).

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	During the semester in which the postgraduate thesis (MSc thesis) is being completed, the supervising Professor supports the student by providing, in the best guiding manner, the scientific knowledge and expertise in the specific subject of the thesis. This support aims to facilitate the student's gradual progress in writing the thesis.
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Supporting the Learning Process through the e-class Electronic Platform

ORGANISATION OF TEACHING

More specifically, the workload of the course is analyzed as follows:

Type	Description	Workload(hours)
Lectures	This concerns the lectures and presentations that will take place in the Research Methodology Seminar I & II.	2*20=40
Preparation of an MSc thesis proposal	Involves composing the proposal for the MSc thesis.	20
Preparation of Dissertation	It concerns the time required for conducting case studies and implementing exercises, as previously mentioned (Assessment Method).	536
Final Examination	It concerns the duration of the final examination	1
Participation in other activities	Meetings with the Professor for Progress Feedback	3
	Σύνολο	**600**

MODULE ASSESSMENT

The MSc thesis is presented for public defense by the student. The thesis is evaluated by the supervisor and two assessors, who must collectively agree on the final grade for the postgraduate thesis, which may also be the average of the three grades.

The evaluation criteria for the thesis include:

• The significance of the contribution of the specific research to the academic subject of the MSc program.

• Clear definition and significance of the research objectives.

	• Understanding of the research subject and the ability to critically evaluate and utilize relevant literature. • Understanding of research methodology, sufficiency of the research methodology, and systematic use of appropriate research techniques. • Completion of the research and the significance of the results and conclusions. • Writing style of the thesis and the technical presentation quality of the work, which should conform to citation style standards. • Presentation and public defense of the thesis.
5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	• *Calabrese R. L. (2012), Getting It Right: The Essential Elements of a Dissertation, 2nd Edition, Rowman & Littlefield Education.* • *Cohen L., Manion L., Morrison K. (2007), Research Methods in Education, 6th Edition, London & New York, Routledge.* • *Murray R. (2006), How to Write a Thesis, 2nd Edition, Berkshire, UK, Open University Press.* • *Orna E. & Stevens G. (2009), Managing Information for Research: Practical help in researching, writing and designing dissertations, 2nd Edition, Buckingham, UK, Open University Press.* • *Saunders M., Thornhill M., Lewis, P. (2012), Research Methods for Business Students, 6th Edition, Harlow, Essex, UK, Pearson.* • *Yin R. K. (1994), Case Study Research Design and Methods, 2nd Edition, London & New Delhi, Sage.* • *Bell J. (2007), Πως να συντάξετε μια Επιστημονική Εργασία: Οδηγός Ερευνητικής Μεθοδολογίας, Αθήνα, Εκδόσεις Μεταίχμιο.* • *Eco U. (2001), Πως γίνεται μια Διπλωματική Εργασία, Αθήνα, Εκδόσεις Νήσος.* • *Ζαφειρόπουλος Κ. (2015), Πως γίνεται μια Επιστημονική Εργασία: Επιστημονική Έρευνα και Συγγραφή Εργασιών, Αθήνα, Εκδόσεις Κριτική.*

- *Θεοφιλίδης Χ. (2005), Η Συγγραφή Επιστημονικής Εργασίας: Από τη Θεωρία στην Πράξη, Αθήνα, Εκδόσεις Τυπωθήτω-Δαρδανός.*
- *Μπέλλας Θ. (1998), Δομή και Γραφή της Επιστημονικής Εργασίας, Αθήνα, Εκδόσεις Ελληνικά Γράμματα.*
- *Μπουρλιάσκος Β. Γ. (2010), Πως γράφεται μια Επιστημονική Εργασία: Πρακτικός Οδηγός, Συγγραφή Επιστημονικής Εργασίας και Βιβλιογραφική Έρευνα, Αθήνα, Εκδόσεις Διόνικος.*
- *Τοκμακίδης Σ. Π. (2008), Οδηγός για τη Συγγραφή Διπλωματικών Εργασιών, Αθήνα, Ιατρικές Εκδόσεις Π. Χ. Πασχαλίδης.*

Alternatively, instead of dissertation the following four modules and the Research seminar

BUSINESS STRATEGY

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	BUSINESS STRATEGY		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
		3 HOURS	7
TYPE OF MODULE	COMPULSORY		

PROREQUISITE MODULES:	NO
LANGUAGE OF TEACHING AND TESTING:	GREEK
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO
MODULE'S URL	https://eclass.uth.gr/courses/ECON_P_147/

2. LEARNING OUTCOMES

Learning Outcomes

Upon completion of the module, students should be able to:

- Understand the basic principles of Strategic Business Management and their impact on business operations
- Plan and evaluate the operational, competitive and corporate strategy of a firm
- Recognize and evaluate the strategic movements of modern businesses, proposing possible improvements.
- Interpret the effect of external factors on business operations
- Investigate and plan the internationalization of a firm

General Competencies

Upon successful completion of the module, students will develop and cultivate basic professional and social skills, namely:

- Search, analysis and synthesis of data and information, using necessary technologies
- Adaptation to new situations
- Decision making
- Autonomous work
- Teamwork
- Work in an international environment Respect for diversity and multiculturalism

- Exercise criticism and self-criticism
- Promotion of free, creative and inductive thinking

3.MODULE CONTENT

• Strategic analysis of the external environment: analysis of the macro (PEST-DG) and micro environment (Porter's 5 forces) of the business.

• Corporate mission, vision, strategic goals, strategic considerations.

• Business strategy direction: stability, growth, rescue-turnaround.

• Strategies for achieving competitive advantage: cost leadership, differentiation, focus.

• Internationalization strategies of the company: alliances, joint ventures, acquisitions, exports, oligopolistic reaction theories, selective paradigm theory (Dunning).

• Ways to implement strategy: Acquisitions, Mergers and Strategic Alliances: Analyzing, deciding and ensuring the success of strategic development through acquisitions, mergers and strategic alliances.

• The technological strategy, internally and externally.

• Strategy evaluation and selection: Rumlet's model, acceptability analysis, feasibility analysis, balanced scorecards analysis. Strategy implementation.

• Portfolio techniques for making strategic decisions: experience curve, BCG matrix, GE matrix, Hofer's product/market evolution matrix, life cycle matrix, portfolio cube, risk cube.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Mixed
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Learning process support through the e-class online platform. Use email, MS TEAMS
ORGANISATION OF TEACHING	More specifically, the workload of the module is analyzed as follows:

Type ~~Είδος~~	Description ~~Περιγραφή~~	WORKLOAD (HOURS)

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	Lectures 39 Study at home 90 Completion of assignments 49 Preparation for the final exam 30 Final Examination 2 Total 210
MODULE ASSESSMENT	Written exam and group assignments
5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	Textbooks in Greek • Παπαδάκης Β. (2016), *Στρατηγική των Επιχειρήσεων: Ελληνική και Διεθνής Εμπειρία*, Τόμος Α, 7η εκδ., Εκδόσεις Μπένου: Αθήνα • Senior B., 2017. Οργανωσιακή Αλλαγή. Εκδόσεις Broken Hill, Αθήνα. Academic journals (in alphabetical order) • Academy of Management Executive • Harvard Business Review • Journal of Business Research • Journal of International Business Studies (AIBA) • Long Range Planning (EIBA) • Strategic Management Journal (SMS)

TECHNOLOGY STRATEGY

1.GENERAL				
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS			
DEPARTMENT	DEPARTMENT OF ECONOMICS			
LEVEL OF STUDIES	POSTGRADUATE LEVEL			
MODULE CODE	**MA_41**	**SEMESTER OF STUDY**	**A**	
MODULE TITLE	**Technology Strategy**			
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**	
Lectures – Course work		3 HOURS	7	
TYPE OF MODULE	COMPULSORY			
PREREQUISITE MODULES:	NO			
LANGUAGE OF TEACHING AND TESTING:	GREEK			
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO			
MODULE'S URL	eclass.uth.gr			
2. LEARNING OUTCOMES				
Learning Outcomes				

Upon successful completion of the course, students will be able to understand the developments in the modern technology environment and plan appropriate policies and practices for their effective management. Students will be able to:

- Understand the interaction between economics and technology
- Connect theoretical knowledge with technological and business reality
- Recognize the primary importance of innovation and organizational learning
- Understand the world of intellectual property (IP)
- Understand the basic functions of Technology Strategy
- Implement individual tools, policies and practices of Technology Strategy

General Competencies

- Understanding how the theories of Economics of Technology and Technology Strategy apply to the modern economic environment.
- Solving practical problems encountered in the technologically fluid business environment.
- Planning of Technology Strategy policies and practices
- Improving the ability of students to communicate, collaborate and lead on issues of technology and innovation.
- Teamwork
- Perception of the innovative capabilities of the business

3.MODULE CONTENT

Technical change and economic development (Economics of knowledge and innovation: key concepts)

- Innovation and Technical Change
- Industrial and technological revolutions, techno-economic paradigms
- Knowledge, technology, innovation and entrepreneurship
- Diffusion of innovation and path dependence
- Disruptive innovation, Socio-technical Systems and Socio-technical Transition

Economics of technology

- Business knowledge creation process
- Path Dependence and Absorptive Capacity

Technology **Strategy**

- Types of Technology Strategy
- Levels of Technology Strategy Development
- Tools and Methods for Developing Innovative Skills
- Architectural innovation
- Technology platforms and ecosystem strategies
- Modularity
- Product platforms

- Reasons for failure of large companies
- Technology alliance strategies

Technology **and Business strategy**

- Fundamental skills
- Leveraging innovation, complementary assets, and appropriability regimes
- Co-opetitive games and platform strategy

Intellectual Property and exploitation of innovation

The framework for the study and analysis of intellectual property

- Intangible assets:
  - Intangible assets investment
- Intellectual Property Rights (IPRs):
  - Intellectual Property Protection
  - Patents
- IP institutions and mechanisms (OBI, EPO, WIPO, etc.)
- Intellectual Property Management – Strategies

Technology **Strategy Planning**

- Technology Foresight
- Technology Monitoring
- Scenario development and analysis
- Technology Road-Map (TRM)

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Mixed/Hybrid
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Learning process support through the e-class online platform. Use email, MS TEAMS.
ORGANISATION OF TEACHING	The course delivery takes place in the rooms of the Department of Economics. Informational material is distributed through the course page in the e-class platform and the course channel in MS Teams. More specifically, the workload of the module is analyzed as follows:

Type~~Είδος~~	Description~~Περιγραφή~~	WORKLOAD (HOURS)
	Lectures	39
	Home study	78
	Completion of assignments	50

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	Preparation for final exam 40 Final Examination 3 Total 210
MODULE ASSESSMENT	In-course assignments 30% Final course essay 70%
5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	Bessant J και Tidd J. (2017) Καινοτομία και Επιχειρηματικότητα, 3η Αγγλική Έκδοση, Εκδόσεις Τζιόλα (in Greek) Schilling, M. A. (2017) Η Στρατηγική Διοίκηση της Τεχνολογικής Καινοτομίας, 4η Αγγλική Έκδοση, Broken Hil (in Greek)l Tidd J. and Bessant J. (2018) Στρατηγική Διοίκηση Καινοτομίας, Broken Hill (in Greek) White M. and Bruton G. (2010) Η στρατηγική διαχείριση της τεχνολογίας και της καινοτομίας. Κριτική (in Greek) Ξπαής Γ. (2007) Εισαγωγή στη Διαχείριση Τεχνολογικών Καινοτομιών, Κριτική (in Greek) Dodgson M., Gann D.M., and Salter A. (2008) The Management of Technological Innovation, Oxford University Press Dodgson M., Gann D., and Salter A. (2005) Think, Play, Do: Innovation, Technology, and Organization: Technology, Innovation, and Organization, Oxford University Press Nonaka I. and Takeuchi H. (1995) The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation, Oxford University Press

SPATIAL DEVELOPMENT AND STRATEGIC PLANNING

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**

MODULE TITLE	SPATIAL DEVELOPMENT AND STRATEGIC PLANNING		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
Lectures – assignments		3 HOURS	7
TYPE OF MODULE	Compulsory course		
PREREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		
MODULE'S URL	https://eclass.uth.gr/courses/ECON_P_188/		

2. LEARNING OUTCOMES

Learning Outcomes

Upon completion of the course students are expected to:

- understand the concept of territory at different spatial scales, and the scope of regional science
- understand the basic principles of spatial development and competitiveness theories
- understand the broader economic, social, political and technological changes which are redefining the dynamics of spatial development
- understand the concept of strategic planning and its role in development
- understand the levels of strategic planning
- analyse development dynamics at the local level

- follow the development of strategic plans and spatial development programmes
- understand the dimensions and implement policies and actions based on local specificity, uniqueness and dynamics

General Competencies

It is useful students to have general knowledge and analytical skills concerning the spatial organisation of the economy at different spatial scales (urban, regional, national) and basic knowledge of economics

3.MODULE CONTENT

1. SPATIAL DEVELOPMENT, REGIONAL SCIENCE AND OTHER METHODOLOGICAL ISSUES
2. STRUCTURAL CHANGES AND THE ORGANISATION OF SPACE
3. THEORIES OF REGIONAL DEVELOPMENT AND SPATIAL DISPARITIES
4. LOCAL ECONOMIC DEVELOPMENT
5. DIMENSIONS AND MEANS OF REGIONAL POLICY IMPLEMENTATION
6. THE COMMONS: AN ALTERNATIVE PARADIGM FOR BOTTOM-UP DEVELOPMENT
7. STRATEGIC AND TACTICAL PLANNING
8. POLICIES AND PLANNING TOOLS FOR DEVELOPMENT
9. BUSINESS PLANS: ANALYSIS - ROLES - PARTICIPATORY PROCESS
10. SPECIFIC DEVELOPMENT ISSUES WITH A FOCUS ON TOURISM, CULTURE AND THE ENVIRONMENT
11. DEVELOPMENT PROGRAMMES, STRATEGIC PLANNING AND NEW FORMS OF DEVELOPMENT

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	In-person/ Online/ Mixed

USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Support for the learning process through the e-class platform and MSTeams. Communication via email.
ORGANISATION OF TEACHING	The delivery of the course takes place in the classrooms of the Department of Economics. Informative and educational material is distributed through the course page in the e-class More specifically, the workload of the module is analyzed as follows:

Type ~~Είδος~~	Description ~~Περιγραφή~~	WORKLOAD (HOURS)
	Lectures	39
	Study at home	60
	Completion of assignments	60
	Preperation for the final exam	21
	Final Examination	2
	Total	182

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MODULE ASSESSMENT	Written examinations or individual or group assignments

5. RECOMMENDED BIBLIOGRAGHY

Suggested Bibliography:

- Armstrong H.W. and Taylor J. (2000) *Regional economics and policy*, Blackwell
- Pike A., Rodriguez-Pose A. and Tomaney J. (2006) *Local and regional development*, Routledge

	• Πετράκος Γ. και Ψυχάρης Γ. (2016) *Περιφερειακή Ανάπτυξη στην Ελλάδα*, 2η εκδ. Κριτική • Πολύζος Σ. (2011) *Περιφερειακή Ανάπτυξη*, Κριτική

APPLIED ECONOMIC ANALYSIS

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	**APPLIED ECONOMIC ANALYSIS**		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
LECTURES		3 HOURS	7
TYPE OF MODULE	COMPULSORY		
PREREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		

MODULE'S URL	https://eclass.uth.gr/courses/ECON_P_187/

2. LEARNING OUTCOMES

Learning Outcomes

Upon completion of the course, participants are expected to:

- understand sufficiently the basic economic concepts concerning the markets, the sectors of government's policy in the economy, and also fundamentals of the money markets and international transactions
- distinguish and apprehend the interdependence between internal and external factors of markets

General Competencies

The course aims to introduce in a critical way the basics of contemporary Economic Analysis. Emphasis is given on the fundamental problems of the operation of the markets on the micro and the macro level. The course demands little or no previous knowledge of economics.
The course focuses on the conceptual aspects of economic reasoning and not on the theoretical or mathematical demonstrations of economic theorems, in a way to make students able to understand the major aspects of the functioning of markets, their failures and remedies.

3.MODULE CONTENT

D) MICROECONOMIC THEORY: Demand and supply theory, Cost and production analysis, Forms of competition, Market Failures, Theory and Evolution of Firms, Transaction Costs Theory.
E) FUNDAMENTAL MACROECONOMIC INDICATORS- BALANCE OF TRADE AND CURRENT TRADE BALANCE
F) MONETARY THEORY AND POLICY

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Mixed
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	The learning process is supported through the course's e-class online platform, the use of the official email of the department to communicate with students, and MSTEAMS

ORGANISATION OF TEACHING

The lectures of the course takes place in the amphitheaters of the Department of Economics. Informational and learning material is distributed through the e-class platform.

More specifically, the workload of the module is analyzed as follows:

Type	Description	WORKLOAD (HOURS)
	Lectures	39
	Study at home	60
	Completion of assignments	40+2
	Preperation for the final exam	36
	Final Examination	3
	Total	180

MODULE ASSESSMENT

Two compulsory tests (40%), Participation (10%), final exam (50%)

5. RECOMMENDED BIBLIOGRAGHY

Suggested Bibliography:

- Βαρουφάκης, Γ. (2007), Πολιτική Οικονομία, Αθήνα, Gutenberg.
- Bowles S, R. Edwards, & F. Roosevelt, (2005), Κατανοώντας τον Καπιταλισμό, ελλ. μτφ Αθήνα, Gutenberg 2014, Επιμέλεια μτφ Μ. Ζουμπουλάκης.
- Krugman, P. & R. Robin (2014), Μακροοικονομική σε διδακτικές ενότητες, ελλ. μτφ Αθήνα, Gutenberg 2018.
- Nicholson, W., (2005), Μικροοικονομική Θεωρία, ελλ. μτφ. Εκδ. Κριτική, 2008.
- Mankiw, G., Taylor, M.P and Ashwin, A. (2012) Οικονομική των επιχειρήσεων, ελλ. μτφ. Εκδ. Κριτική, 2018

RESEARCH METHODOLOGY SEMINAR III

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**C**
MODULE TITLE	Research Methodology III		
INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**	
Lectures - Exercises – Practices- Use of EXCEL and R programming language	3 HOURS	7	
TYPE OF MODULE	COMPULSORY		
PROREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		
MODULE'S URL	eclass.uth.gr		
2. LEARNING OUTCOMES			

Learning Outcomes

The teaching of the course " Research Methodology III " aims to:

• Familiarize students with the necessary knowledge and techniques that enable researchers of economic phenomena to quantify and estimate economic relationships governing the operation of economic units and markets using statistical methods.

• Equip students with the necessary tools for verifying and evaluating econometric models and conducting forecasts.

• Introduce students to the analysis of time series data.

By the end of the course, students should be able to:

• Specialize and select an econometric model.

• Estimate a classic linear model.

• Test, examine, and evaluate an econometric model.

• Evaluate and address issues related to violations of the assumptions of a model.

• Design, estimate, and test time series models and perform forecasts.

• Apply the estimated models using the R programming language.

General Competencies

- Data and information search, analysis, and synthesis using the necessary technologies.
- Adaptation to new situations.
- Decision-making.
- Autonomous work.
- Teamwork.
- Work in an international environment.
- Work in an interdisciplinary environment.
- Project design and management.
- Generation of new research ideas.

3.MODULE CONTENT	
11. Simple and multiple linear regression (OLS): Assumptions, sample estimation, hypothesis testing, significance tests for variables and linear constraints, simple and adjusted coefficient of determination, properties of estimators. 12. Violations of assumptions: Autocorrelation, heteroscedasticity, statistical tests (White, Durbin-Watson, Breusch-Godfrey), GLS and FGLS estimators, correlation of explanatory variables and error term, multicollinearity, misspecification. 13. Models of limited dependent variables. 14. Vector Autoregressive (VAR) models and causality tests. 15. Non-stationarity and unit root tests. 16. Cointegration and error correction models. Identification in standard and cointegrated systems. 17. Time-varying coefficient models. 18. Traditional panel data models. 19. Dynamic heterogenous panels. 20. Non-stationary panels.	
4. TEACHING AND LEARNING METHODS EVALUATION	
TEACHING METHOD	Hybrid
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Support for the learning process is provided through the use of: (a) The e-class electronic platform, institutional email, and the online course on the MS-TEAMS platform. (b) The R programming language.
ORGANISATION OF TEACHING	The course is delivered within the classrooms of the Department of Economic Sciences, utilizing Microsoft Office 365 tools (Word, Excel, PowerPoint) and the R programming language. Lecture slides and supporting materials for each session are already posted on the e-class electronic platform for students to access during the lecture. The existing technological equipment in the classrooms also allows the use of an electronic whiteboard via a WACOM device, which enables writing on presentations and texts with the ability to save enriched texts and presentations. Enriched texts containing comments on the lectures, as well as solutions to exercises and problems, are also uploaded to the e-class of the course after each lecture. Files containing additional exercises and problems for practice and understanding of the course

material are provided for each topic. Solutions and comments for these problems are given either during the lectures or during specified office hours announced by the instructor (in special cases, even through email using students' institutional accounts).

More specifically, the workload of the module is analyzed as follows:

Type~~Είδος~~	Description~~Περιγραφή~~	WORKLOAD~~Φ~~ (HOURS)
	Lectures	39
	Study at home	80
	Completion of assignments	50
	Preperation for the final exam	39
	Final Examination	2
	Total	210

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MODULE ASSESSMENT	EXAMINATION PERIOD A' SEMESTER Individual/Group Assignment: 30% Written Exam: 70% REPEAT EXAMINATION Written Exam: 100%
5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	- Greene, W. H. (2003). Econometric analysis. Pearson Education India. - Wooldridge, J. M. (2015). Introductory econometrics: A modern approach. Cengage learning.

	- Gujarati, D. N. (2022). Basic econometrics. Prentice Hall. - Stock, J. H., & Watson, M. W. (2015). Introduction to econometrics 3rd ed. - Baltagi, B. H., (2008). Econometric analysis of panel data (Vol. 4). Chichester: Wiley. - Wooldridge, J. M. (2010). Econometric analysis of cross section and panel data. MIT press.

MSc Applied Economics
Specialization : ~~Η 3.3 Κατεύθυνση~~ «Private Organizations Management ~~1st Semester~~

1st Semester

MSc Applied Economics with specilaziation in Private Organizations Management		
MODULES	**TYPE**	**ECTS**
Business Strategy	COMPULSORY	7
Financial Management	COMPULSORY	7
Technology Strategy	COMPULSORY	7
Applied Economics Analysis	COMPULSORY	7
Research Methodology Seminar I	COMPULSORY	2

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BUSINESS STRATEGY

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	BUSINESS STRATEGY		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
		3 HOURS	7
TYPE OF MODULE	COMPULSORY		
PROREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		
MODULE'S URL	https://eclass.uth.gr/courses/ECON_P_147/		
2. LEARNING OUTCOMES			
Learning Outcomes			
Upon completion of the module, students should be able to:			

- Understand the basic principles of Strategic Business Management and their impact on business operations
- Plan and evaluate the operational, competitive and corporate strategy of a firm
- Recognize and evaluate the strategic movements of modern businesses, proposing possible improvements.
- Interpret the effect of external factors on business operations
- Investigate and plan the internationalization of a firm

General Competencies

Upon successful completion of the module, students will develop and cultivate basic professional and social skills, namely:

- Search, analysis and synthesis of data and information, using necessary technologies
- Adaptation to new situations
- Decision making
- Autonomous work
- Teamwork
- Work in an international environment Respect for diversity and multiculturalism
- Exercise criticism and self-criticism
- Promotion of free, creative and inductive thinking

3.MODULE CONTENT

• Strategic analysis of the external environment: analysis of the macro (PEST-DG) and micro environment (Porter's 5 forces) of the business.

• Corporate mission, vision, strategic goals, strategic considerations.

• Business strategy direction: stability, growth, rescue-turnaround.

• Strategies for achieving competitive advantage: cost leadership, differentiation, focus.

• Internationalization strategies of the company: alliances, joint ventures, acquisitions, exports, oligopolistic reaction theories, selective paradigm theory (Dunning).

• Ways to implement strategy: Acquisitions, Mergers and Strategic Alliances: Analyzing, deciding and ensuring the success of strategic development through acquisitions, mergers and strategic alliances.

• The technological strategy, internally and externally.

• Strategy evaluation and selection: Rumlet's model, acceptability analysis, feasibility analysis,

balanced scorecards analysis. Strategy implementation.

• Portfolio techniques for making strategic decisions: experience curve, BCG matrix, GE matrix, Hofer's product/market evolution matrix, life cycle matrix, portfolio cube, risk cube.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Mixed
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Learning process support through the e-class online platform. Use email, MS TEAMS
ORGANISATION OF TEACHING	More specifically, the workload of the module is analyzed as follows:

Type ~~Είδος~~	Description ~~Περιγραφή~~	WORKLOAD (HOURS)
	Lectures	39
	Study at home	90
	Completion of assignments	49
	Preparation for the final exam	30
	Final Examination	2
	Total	210

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MODULE ASSESSMENT	Written exam and group assignments

5. RECOMMENDED BIBLIOGRAGHY

Suggested Bibliography:	Textbooks in Greek

- Παπαδάκης Β. (2016), *Στρατηγική των Επιχειρήσεων: Ελληνική και Διεθνής Εμπειρία*, Τόμος Α, 7η εκδ., Εκδόσεις Μπένου: Αθήνα
- Senior B., 2017. Οργανωσιακή Αλλαγή. Εκδόσεις Broken Hill, Αθήνα.

Academic journals (in alphabetical order)

- Academy of Management Executive
- Harvard Business Review
- Journal of Business Research
- Journal of International Business Studies (AIBA)
- Long Range Planning (EIBA)
- Strategic Management Journal (SMS)

FINANCIAL MANAGEMENT

1. GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE	**(ECON_P_148)**	**SEMESTER OF STUDY**	**A**
MODULE TITLE	FINANCIAL MANAGEMENT		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
Lectures - Exercises	3 hours	7
TYPE OF MODULE	COMPULSORY	

PREREQUISITE MODULES:	No
LANGUAGE OF TEACHING AND TESTING:	GREEK
THE MODULE IS OFFERED TO ERASMUS STUDENTS	No
MODULE'S URL	eclass.uth.gr/

2. LEARNING OUTCOMES

Learning Outcomes

The course of Financial Management is connected with the courses of Accounting, Finance, Investment Valuation, and Portfolio Management and is influential towards but also is influenced by these courses but in no case it is identical with them. On the contrary, Financial Management creatively adds to these fields.

General Competencies

By fully attending this course, students will have created a clear, complete, and multi-prismatic perspective of the underlying theory and economic implications will be familiarized with the methods and the tools necessary to assess and critically evaluate investment plans, studying financial components scientifically, and reaching safe and accurate conclusions about the viability and the financial health of firms. They will have a clear perspective about the differences between fundamental and market evaluation and will be able to efficiently avoid the deviations from objective estimations that stem from the bias and subjectivity inherent in the majority of investors.
They will be able to judge whether it would be better to finance a specific investment by lending or by issuing new shares. They will also be able to detect and measure the most important determinants for safely estimating the value, the profitability, and the perspectives of a firm to grow. Moreover, they will become fluent in using the appropriate tools for reducing the risk emanating from the existing capital structure but also from

default risk, exchange rate risk, etc. while also will develop capacities to better allocate the existing resources in order to achieve the best risk-adjusted return by taking into consideration the special features of the growth potentials as well as the possibilities to adjust prices to news regarding the specific investment.

3. MODULE CONTENT

This course primarily focuses on investment decision criteria based on the Net Present Value, the Future Value, and the discount rate. Moreover, it offers insights concerning how bonds function by focusing on the market value, the coupon rate, and the yield to maturity. Furthermore, it compares financing through lending with financing through issuing new shares and offers in depth analysis of the advantages and disadvantages of each decision concerning this dilemma. The percentage of re-capitalization, the profit holdings, the perspectives of growth, and the market share constitute the axis of this analysis. The basic financial ratios are analyzed that reflect the financial condition of the firm. Moreover, the role of the Assets, the Liabilities, and the Equity are analyzed, which are crucial for fighting deficits in balance sheets.

The second part of this course focuses on the concepts of performance and risk which are applied in alternative investments and constitute the basis of fundamental and technical analysis and for estimating the optimal weights of a range of alternative financial assets. Furthermore, the Fama-French 5-factor model is applied and the market efficiency theory is analyzed as well as the possibilities of viability and profitability that it can offer.

The third part of this course focuses on risk management (credit risk, exchange risk, country risk) and is based on the impacts of risk premia on the success of investments and on the difficulties they cause to the efficacy of Financial Management. Emphasis is given on the derivatives market that is employed for hedging against risk stemming from the unpredictability of market prices as these instruments are also adopted for speculative purposes.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	In-person and online
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Teaching is supported by the e-class platform. Use of email, MSTEAMS

<table>
<tr><td>ORGANISATION OF TEACHING</td><td>Teaching takes place in the classes of the Department of Economics. Informative material is distributed through the course's e-class webpage.

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More specifically, the workload can be divided as indicated below:

<table>
<tr><th>Type</th><th>Description</th><th>WORKLOAD (HOURS)</th></tr>
<tr><td></td><td>Lectures</td><td>39</td></tr>
<tr><td></td><td>Study at home</td><td>68</td></tr>
<tr><td></td><td>Completion of assignments</td><td>30</td></tr>
<tr><td></td><td>Preparation for the final exam</td><td>70</td></tr>
<tr><td></td><td>Final Examination</td><td>3</td></tr>
<tr><td></td><td>Total</td><td>210</td></tr>
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</td></tr>
<tr><td>MODULE ASSESSMENT</td><td>Final examination (written) (70%) and individually-prepared writing task of the semester 4.000 words (30%)</td></tr>
<tr><td colspan="2">5. RECOMMENDED BIBLIOGRAGHY</td></tr>
<tr><td>Suggested Bibliography:</td><td>

Principles of Corporate Finance, Brealey, Myers, and Allen, Utopia editions, 2nd edition
Papadamou S, and Siriopoulos C., 2015. Principles of Investment Valuation: Financial and Socio-economic perspective. [e-book.] Athens: Association of Greek

</td></tr>
</table>

	Academic Libraries. Available at: http://hdl.handle.net/11419/4365

TECHNOLOGY STRATEGY

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE	**MA_41**	**SEMESTER OF STUDY**	**A**
MODULE TITLE	**Technology Strategy**		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
Lectures – Course work	3 HOURS	7

TYPE OF MODULE	COMPULSORY
PROREQUISITE MODULES:	NO
LANGUAGE OF TEACHING AND TESTING:	GREEK
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO
MODULE'S URL	eclass.uth.gr
2. LEARNING OUTCOMES	

Learning Outcomes

Upon successful completion of the course, students will be able to understand the developments in the modern technology environment and plan appropriate policies and practices for their effective management. Students will be able to:

- Understand the interaction between economics and technology
- Connect theoretical knowledge with technological and business reality
- Recognize the primary importance of innovation and organizational learning
- Understand the world of intellectual property (IP)
- Understand the basic functions of Technology Strategy
- Implement individual tools, policies and practices of Technology Strategy

General Competencies

- Understanding how the theories of Economics of Technology and Technology Strategy apply to the modern economic environment.
- Solving practical problems encountered in the technologically fluid business environment.
- Planning of Technology Strategy policies and practices
- Improving the ability of students to communicate, collaborate and lead on issues of technology and innovation.
- Teamwork
- Perception of the innovative capabilities of the business

3.MODULE CONTENT

Technical change and economic development (Economics of knowledge and innovation: key concepts)

- Innovation and Technical Change
- Industrial and technological revolutions, techno-economic paradigms
- Knowledge, technology, innovation and entrepreneurship
- Diffusion of innovation and path dependence
- Disruptive innovation, Socio-technical Systems and Socio-technical Transition

Economics of technology

- Business knowledge creation process
- Path Dependence and Absorptive Capacity

Technology **Strategy**

- Types of Technology Strategy
- Levels of Technology Strategy Development
- Tools and Methods for Developing Innovative Skills
- Architectural innovation
- Technology platforms and ecosystem strategies

- Modularity
- Product platforms
- Reasons for failure of large companies
- Technology alliance strategies

Technology **and Business strategy**

- Fundamental skills
- Leveraging innovation, complementary assets, and appropriability regimes
- Co-opetitive games and platform strategy

Intellectual Property and exploitation of innovation

The framework for the study and analysis of intellectual property

- Intangible assets:
  - Intangible assets investment
- Intellectual Property Rights (IPRs):
  - Intellectual Property Protection
  - Patents
- IP institutions and mechanisms (OBI, EPO, WIPO, etc.)
- Intellectual Property Management – Strategies

Technology **Strategy Planning**

- Technology Foresight
- Technology Monitoring
- Scenario development and analysis
- Technology Road-Map (TRM)

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Mixed/Hybrid
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Learning process support through the e-class online platform. Use email, MS TEAMS.
ORGANISATION OF TEACHING	The course delivery takes place in the rooms of the Department of Economics. Informational material is distributed through the course page in the e-class platform and the course channel in MS Teams. More specifically, the workload of the module is analyzed as follows:

Type ~~Είδος~~	Description ~~Περιγραφή~~	WORKLOAD (HOURS)
	Lectures	39

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	Home study 78 Completion of assignments 50 Preparation for final exam 40 Final Examination 3 Total 210
MODULE ASSESSMENT	In-course assignments 30% Final course essay 70%
5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	Bessant J και Tidd J. (2017) Καινοτομία και Επιχειρηματικότητα, 3η Αγγλική Έκδοση, Εκδόσεις Τζιόλα (in Greek) Schilling, M. A. (2017) Η Στρατηγική Διοίκηση της Τεχνολογικής Καινοτομίας, 4η Αγγλική Έκδοση, Broken Hil (in Greek)l Tidd J. and Bessant J. (2018) Στρατηγική Διοίκηση Καινοτομίας, Broken Hill (in Greek) White M. and Bruton G. (2010) Η στρατηγική διαχείριση της τεχνολογίας και της καινοτομίας. Κριτική (in Greek) Ξπαής Γ. (2007) Εισαγωγή στη Διαχείριση Τεχνολογικών Καινοτομιών, Κριτική (in Greek) Dodgson M., Gann D.M., and Salter A. (2008) The Management of Technological Innovation, Oxford University Press Dodgson M., Gann D., and Salter A. (2005) Think, Play, Do: Innovation, Technology, and Organization: Technology, Innovation, and Organization, Oxford University Press Nonaka I. and Takeuchi H. (1995) The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation, Oxford University Press

APPLIED ECONOMIC ANALYSIS

1.GENERAL	
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS
DEPARTMENT	DEPARTMENT OF ECONOMICS
LEVEL OF STUDIES	POSTGRADUATE LEVEL

MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	**APPLIED ECONOMIC ANALYSIS**		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
LECTURES		3 HOURS	7
TYPE OF MODULE	COMPULSORY		
PROREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		
MODULE'S URL	https://eclass.uth.gr/courses/ECON_P_187/		

2. LEARNING OUTCOMES

Learning Outcomes

Upon completion of the course, participants are expected to:

- understand sufficiently the basic economic concepts concerning the markets, the sectors of government's policy in the economy, and also fundamentals of the money markets and international transactions
- distinguish and apprehend the interdependence between internal and external factors of markets

General Competencies

The course aims to introduce in a critical way the basics of contemporary Economic Analysis. Emphasis is given on the fundamental problems of the operation of the markets on the micro and

the macro level. The course demands little or no previous knowledge of economics.
The course focuses on the conceptual aspects of economic reasoning and not on the theoretical or mathematical demonstrations of economic theorems, in a way to make students able to understand the major aspects of the functioning of markets, their failures and remedies.

3.MODULE CONTENT

G) MICROECONOMIC THEORY: Demand and supply theory, Cost and production analysis, Forms of competition, Market Failures, Theory and Evolution of Firms, Transaction Costs Theory.
H) FUNDAMENTAL MACROECONOMIC INDICATORS- BALANCE OF TRADE AND CURRENT TRADE BALANCE
I) MONETARY THEORY AND POLICY

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Mixed
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	The learning process is supported through the course's e-class online platform, the use of the official email of the department to communicate with students, and MSTEAMS
ORGANISATION OF TEACHING	The lectures of the course takes place in the amphitheaters of the Department of Economics. Informational and learning material is distributed through the e-class platform. More specifically, the workload of the module is analyzed as follows:

Type	Description	WORKLOAD (HOURS)
	Lectures	39
	Study at home	60
	Completion of assignments	40+2
	Preperation for the final exam	36

	Final Examination	3
	Total	180
MODULE ASSESSMENT	Two compulsory tests (40%), Participation (10%), final exam (50%)	

5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	○ Βαρουφάκης, Γ. (2007), Πολιτική Οικονομία, Αθήνα, Gutenberg. ○ Bowles S, R. Edwards, & F. Roosevelt, (2005), Κατανοώντας τον Καπιταλισμό, ελλ. μτφ Αθήνα, Gutenberg 2014, Επιμέλεια μτφ Μ. Ζουμπουλάκης. ○ Krugman, P. & R. Robin (2014), Μακροοικονομική σε διδακτικές ενότητες, ελλ. μτφ Αθήνα, Gutenberg 2018. ○ Nicholson, W., (2005), Μικροοικονομική Θεωρία, ελλ. μτφ. Εκδ. Κριτική, 2008. ○ Mankiw, G., Taylor, M.P and Ashwin, A. (2012) Οικονομική των επιχειρήσεων, ελλ. μτφ. Εκδ. Κριτική, 2018

RESEARCH METHODOLOGY SEMINAR I

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		SEMESTER OF STUDY	A
MODULE TITLE	Research Methodology seminar I		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	ECTS
			2
TYPE OF MODULE	COMPULSORY		
PROREQUISITE MODULES:	NO		

LANGUAGE OF TEACHING AND TESTING:	GREEK
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO
MODULE'S URL	eclass.uth.gr

2. LEARNING OUTCOMES

Students will be able to do the following:

- To plan a proper design of a research as well as the identification of the central question and the relative assumptions is a necessary precondition for the scientific analysis of any social and economic phenomenon.
- To implement several research methods that based on (i) specific principles and concepts, (ii) selection of appropriate research tools concerning the preparation and implementation of the research (collection and organization of information in databases, sample, sampling procedures, questionnaires, and interviews) and finally (iii) tools and methods for evaluation and analysis of the collected data / information.
- To understand the practice of empirical scientific research which, under an appropriate methodological design, ensures objective measurements and estimations of the examined phenomena and allows the systematic verification of the research's hypotheses.

General Competencies

- Research and analysis of complicate data with the use of the appropriate methods and tools
- Capacity to develop autonomous work
- Capacity to develop team work
- Working in a multidisciplinary environment
- Production of new innovative research ideas

3.MODULE CONTENT

The primary objective of this course is to provide students with adequate knowledge on the logical path of scientific research and the choice of appropriate methods – tools for the analysis of the potential development issues. This specialized knowledge gives to students the opportunity both to design and implement a research and to acquire critical thinking necessary to solve complex issue and problems.

Consequently, the course includes the following:
1. Concepts, principles, importance and purposes of scientific research
2. Identification and formulation of the central problem (research question) and of the assumptions

3. Investigation of the field, literature research
4. Structuring the analysis concerning, investigation of data resources: central assumptions, main themes for investigation, identification of quantitative and / or qualitative variables in the model, selection of appropriate research method
5. Specificities of primary and secondary research, search and selection of data sources
6. Implementation of tools for primary research: sample, sample size, sampling methods, alternative forms of questionnaires, coding questions..
7. Data entry technics and reliability tests
8. Statistical analysis of data: (a) simple exploratory statistical analysis, (b) advanced exploratory analysis: Exploratory Factor Analysis (EFA) and Principal Component Analysis (PCA), (c) Confirmatory Factor Analysis (CFA), (d) regression and projections
9.Verification of the main assumptions of the model, discussion on the findings as regards existing theories and approaches, drawing conclusions.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Mixed (face to face and hybrid)
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	➢ Use of e-platform, e-class ➢ Use of Ms-Teams programme
ORGANISATION OF TEACHING	More specifically, the workload of the module is analyzed as follows:

Type	Description	WORKLOAD (HOURS)
	Lectures	20
	Study at home	15
	Completion of assignments	15
	Total	50

MODULE ASSESSMENT	Final grade is derives from: Writing a scientific assignment (100%) 4.000-6.000 words based on Scientifics articles

5. RECOMMENDED BIBLIOGRAGHY

Suggested Bibliography:

- Brotherton, B. (2008) Researching Hospitality and Tourism: A Student Guide, London και Thousand Oaks: Sage.
- Δαφέρμος, Β. (2013), Παραγοντική ανάλυση: Διερευνητική με SPSS και επιβεβαιωτική με το LISREL και το AMOS, Θεσσαλονίκη: Ζήτη.
- Ζαφειροπούλος, Κ. (2005), Πως γίνεται μια επιστημονική εργασία; Αθήνα: Κριτική.
- Finn, M., Elliott-White, M., Walton. M. (2000) Research Methods for Leisure and Tourism, Harlow: Pearson Education.

	- Grawitz, M. (2006), Μέθοδοι των κοινωνικών επιστημών, Τόμος Α' και Β', Αθήνα: Οδυσσέας

2nd Semester

MSc Applied Economics with specialiazation in Private Organizations Management		
MODULES	**TYPE**	**ECTS**
Total Quality Management	COMPULSORY	7
Marketing Management	COMPULSORY	7
Organizational Behaviour and Human Resource Management	COMPULSORY	7
Selective Module *	SELECTIVE	7
Research Methods Seminar II	COMPULSORY	2

*Selective Modules- one of the following		
MODULES	**TYPE**	**ECTS**
Labour Relations	SELECTIVE	7
Measurement of Productivity and Efficiency	SELECTIVE	7
System Dynamics	SELECTIVE	7

TOTAL QUALITY MANAGEMENT

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**B**
MODULE TITLE	TOTAL QUALITY MANAGEMENT		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
Lectures - Exercises - Actions	3 HOURS	7

TYPE OF MODULE	COMPULSORY
PROREQUISITE MODULES:	NO
LANGUAGE OF TEACHING AND TESTING:	GREEK
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO
MODULE'S URL	eclass.uth.gr

2. LEARNING OUTCOMES
Learning Outcomes
The primary aim of this course is to provide the student with the tools to answer the

following questions:

• How can I determine and recognize the quality and quality processes in an economic unit?

• How can I design a process using quality protocols?

• How can I assess and measure the quality in the processes of an economic unit?

• How should I manage to implement quality protocols in an economic unit?

General Competencies

The student will have the ability to comprehend issues related to processes and quality control. They will be capable of understanding and implementing quality processes, process design, and control. They will possess the skills to measure the design of quality processes and quality management systems through statistical control. Additionally, they will have the capability to apply quality control tools and techniques, as well as organizational, design, and management techniques for the implementation of quality protocols.

3.MODULE CONTENT

• Introduction to the basic concepts of total quality.

• Overview of the fundamental theories of Total Quality Management.

• Analysis of the specifications of major quality standards/awards.

• Process analysis, process design, and development of high-quality systems.

• Statistical process control.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	in-person and remote activities or learning (hybrid)

USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES

"Supporting the learning process through the e-class electronic platform. Using email and Microsoft Teams."

This statement indicates the use of electronic platforms and communication tools like email and Microsoft Teams to facilitate and enhance the learning process.

ORGANISATION OF TEACHING

More specifically, the workload of the module is analyzed as follows:

Type	Description	WORKLOAD (HOURS)
	Lectures	39
	Study at home	80
	Preperation for the final exam	90
	Final Examination	1
	Total	210

MODULE ASSESSMENT

100% Individual Presentation of a Scientific Article.

5. RECOMMENDED BIBLIOGRAGHY

Suggested Bibliography:

- Juran, J. M., & De Feo, J. A. (2010). Juran's quality handbook: the complete guide to performance excellence. McGraw-Hill Education.
- Oakland, J. S. (2003). Total quality management and operational excellence: text with cases. Butterworth-Heinemann.
- Tague, N. (2004). The quality toolbox. Quality Press.

MARKETING MANAGEMENT

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	MARKETING MANAGEMENT		
INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**	
	3 HOURS	7	
TYPE OF MODULE	COMPULSORY		
PROREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		
MODULE'S URL	https://eclass.uth.gr/courses/ECON_P_116/		
2. LEARNING OUTCOMES			
Learning Outcomes			

The module seeks to help students understand the role and usefulness of Marketing (MKT) and at the same time equip them with the necessary knowledge for its application in modern organizations, seeking to achieve:

. understanding of the operation and usefulness of MKT, for profit and non-profit organizations
a. recognition the importance of understanding the needs, wants, requirements and expectations of buyers (consumers and industrial customers)
b. familiarity with the MKT mix for goods and services
c. understanding of the evolution of MKT over time, from its first steps to the present day, with the advent of new technologies.

General Competencies

Upon successful completion of the module, students will develop and cultivate basic professional and social skills, namely:

- Search, analysis and synthesis of data and information, using necessary technologies
- Decision making
- Autonomous work
- Teamwork
- Work in an international environment
- Respect for diversity and multiculturalism
- Exercise criticism and self-criticism
- Promotion of free, creative, and inductive thinking

3.MODULE CONTENT

• Environmental analysis and MKT Strategy

• Market segmentation and product positioning

• The Product: Goods & Services, Brand, New Product Development and Product Lifecycle Strategies

• Distribution: distribution channels and supply chain

• Promotion: Communication policy, Advertising, Public Relations, Personal selling, Sales promotion

• The price: Pricing policy, pricing influencing factors, pricing strategies and methods

• Services MKT Mix: People, Processes, Physical Environment

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Mixed
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Learning process support through the e-class online platform. Use email, MS TEAMS
ORGANISATION OF TEACHING	More specifically, the workload of the module is analyzed as follows:

Type ~~Είδος~~	Description ~~Περιγραφή~~	WORKLOAD (HOURS)
	Lectures	39
	Study at home	90
	Completion of assignments	49
	Preparation for the final exam	30
	Final Examination	2
	Total	210

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MODULE ASSESSMENT	written exam and group assignments

5. RECOMMENDED BIBLIOGRAGHY

Suggested Bibliography:	Textbooks in Greek

- Perreault, W., Cannon, J., και McCarthy, E.J. (2022) *Βασικές Αρχές Marketing: Μια Στρατηγική Προσέγγιση*, εκδόσεις BrokenHill, Λευκωσία.
- Armstrong, G και Kotler, P. (2010), *Εισαγωγή στο Μάρκετινγκ*, Εκδόσεις Επίκεντρο, Αθήνα.

Academic journals (in alphabetical order)

- Academy of Marketing Science
- International Journal of Research in Marketing
- Journal of Business Research
- Journal of Consumer Research
- Journal of the Academy of Marketing Science
- Psychology and Marketing

ORGANIZATIONAL BEHAVIOUR AND HUMAN RESOURCE MANAGEMENT

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	ORGANIZATIONAL BEHAVIOR AND HUMAN RESOURCE MANAGEMENT		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
	3 HOURS	7

TYPE OF MODULE	COMPULSORY
PROREQUISITE	NO

MODULES:	
LANGUAGE OF TEACHING AND TESTING:	GREEK
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO
MODULE'S URL	https://eclass.uth.gr/courses/ECON_P_142/

2. LEARNING OUTCOMES

Learning Outcomes

The purpose of the present module is to help students to understand employees and to design appropriate policies and practices for their effective management. This module aims to:

d. Provide theoretical knowledge to understand employee behavior
e. Connect theoretical knowledge with organizational reality, based on the practical implications of the relevant theory
f. Create understanding the basic functions of Human Resource Management
g. Familiarize with the individual tools, policies, and practices of Human Resources Management
h. Promote the recognition of the primary importance of the human factor for the successful operation of businesses

General Competencies

Upon successful completion of the module, students will develop and cultivate basic professional and social skills, namely:

i. Search, analysis and synthesis of data and information, using necessary technologies
j. Decision making
k. Autonomous work
l. Teamwork
m. Work in an international environment
n. Respect for diversity and multiculturalism

o. Exercise criticism and self-criticism
p. Promotion of free, creative and inductive thinking

3.MODULE CONTENT

q. Theories of human behavior
r. Perception
s. Personality
t. Personal values
u. Attitude and behavior
v. Motivation
w. Team building and dynamics
x. Contact
y. Leadership
z. Conflict
aa. Recruitment & Selection of employees
bb. Organizational culture & Organizational climate
cc. Organizational change
dd. Job Planning & Analysis
ee. Employee Rewards & Evaluation
ff. Employee Training & Development
gg. Employee Rewards & Evaluation

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Mixed
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Learning process support through the e-class online platform. Use email, MS TEAMS
ORGANISATION OF TEACHING	More specifically, the workload of the module is analyzed as follows:

Type~~Είδος~~	Description~~Περιγραφή~~	WORKLOAD~~Φ~~ (HOURS)

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	Lectures 39 Study at home 90 Completion of assignments 49 Preparation for the final exam 30 Final Examination 2 Total 210
MODULE ASSESSMENT	written exam and group assignments
5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	Textbooks in Greek • Uhl-Bien, M., Schermerhorn, J.R., & Osborn, R.N. (2015). *Οργανωσιακή Συμπεριφορά*, Εκδόσεις Broken Hill, Αθήνα. • Χυτήρης, Λ. (2018). *Διοίκηση Ανθρωπίνων Πόρων.* Εκδόσεις Μπένου, Αθήνα. Academic journals (in alphabetical order) • Human Resource Management • International Journal of Human Resource Management • Journal of Occupational & Organizational Psychology • Journal of Organizational Behavior **URLs** • http://blogs.hbr.org/ http://www.cipd.co.uk/

RESEARCH METHODS SEMINAR II

1.GENERAL	

SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	Research Methods Seminar II		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
Lectures and hands-on training	3 HOURS	2

TYPE OF MODULE	COMPULSORY
PROREQUISITE MODULES:	Research Methods Seminar I
LANGUAGE OF TEACHING AND TESTING:	GREEK
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO
MODULE'S URL	https://eclass.uth.gr/courses/ECON_P_190/

2. LEARNING OUTCOMES

Learning Outcomes

This seminar provides a comprehensive introduction of statistics for business and economics and an intensive, hands-on introduction to the principles and practice of data visualization. As a result of taking this course, the students should be able to: 1. Apply and interpret descriptive statistics. 2. Formulate, identify and apply inferential statistics. 3. Analyse the association of variables using regression and ANOVA analyses. 4. Conduct empirical work using statistical software and interpret

results 5. Take their data from Excel into visualization software, transform it to easy-to-understand dynamic graphics and interactively explore what-if scenarios.

General Competencies

This course provides the elementary foundations in statistics as well as the prerequisites for understanding the trends and challenges in data analysis and visualization.
The students will find the resources to learn the science behind data analysis, how businesses use data to their advantage. Utilizing the tools that support Business Intelligence can give organizations an edge, letting them make better, data-driven decisions.

3.MODULE CONTENT

Learning module 1: Statistical analyses using statistical package IBM SPSS Statistics

- Data import, data management
- Quantitative and qualitative variables, attributes, scales of measurement (nominal, ordinal, interval and ratio).
- Importing a survey questionnaire to SPSS
- Data Presentation: tabular and graphical. Statistical charts, crosstabulation and independence of data with special reference to attributes. Coding, missing values, conditional and arithmetic operations.
- Descriptive statistics: measures of central tendency, measures of dispersion.
- Inferential statistics. Basic statistical tests in SPSS. T-tests, analysis of variance (ANOVA), Chi-square test and contingency tables.
- Bivariate data: Definition, scatter diagram, simple, partial and multiple correlation, determine the strength of the correlation via the correlation coefficient. Simple and multiple linear regression. Multiple linear regression assumptions and diagnostics.

Learning module 2: Visual analytics

- Basic plotting and visualization. Statistical and specialty plots in Business Intelligence and Analytics Software Tableau.
- Best practices for creating different plot types, motion charts, interactive visualizations.
- Building, sharing and customizing automated reports including data, text and graphics.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	In situ and online lectures with hands-on computer training classes.
USE OF INFORMATION AND COMMUNICATION	Teaching and learning process will be enhanced by eclass, email and MSTEAMS.

TECHNOLOGIES	Software licenses (IBM SPSS Statistics and Tableau latest versions) are offered to students at the beginning of the course. After completing the course, students have free one-year Tableau licenses through "Tableau for Students software licensing program".
ORGANISATION OF TEACHING	The hands-on training is conducted in the Computer Lab. Hands-on exercises and relevant materials (software user manuals, e-books, dictionary of statistical terms, white papers) will be provided for students to try out the applications, and to experiment with data analysis and interpretation and analytical reasoning in reports. More specifically, the workload of the module is analyzed as follows:

Type~~Είδος~~	Description~~Περιγραφή~~	WORKLOAD~~Φ~~ (HOURS)
	Lectures	39
	Study at home	10
	Completion of assignments	-
	Preparation for the final exam	9
	Final Examination	2
	Total	60

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MODULE ASSESSMENT	Online exam in the classroom

5. RECOMMENDED BIBLIOGRAGHY

Suggested Bibliography:

- Aljandali A. (2016). Quantitative Analysis and IBM® SPSS® Statistics. A Guide for Business and Finance. Springer Cham. Hardcover ISBN 978-3-319-45527-3 (e-book)
- Cleophas, Ton J., Zwinderman, Aeilko H. (2015). SPSS for Starters and 2nd Levelers. Springer International Publishing, ISBNs 978-3-31-920599-1, 978-3-31-920600-4. (e-book)

	- Martin Lee Abbott (2016). Using Statistics in the Social and Health Sciences with SPSS® and Excel®. John Wiley & Sons, Inc. Print ISBN: 9781119121046 Online ISBN: 9781119121077 - Lind D. and Marchal W. and Wathen S. (2018). Statistical Techniques in Business and Economics, 17th Edition, McGraw Hill Education.

Selective Modules

LABOUR RELATIONS

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**B**
MODULE TITLE	Labour Relations		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
Lectures – Exercises – Case studies		3 HOURS	7
TYPE OF MODULE	OPTIONAL		
PREREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		

THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO
MODULE'S URL	eclass.uth.gr

2. LEARNING OUTCOMES

Learning Outcomes

Upon successful completion of the module, students should:

- Know and comprehend the basic theoretical and applied concepts of the labour relations scientific subject.
- Understand the dynamic and complex contemporary working environment that shapes modern labour relations.
- Be familiarized with the basic concepts regarding the personal and collective aspects of labour demand and labour supply.
- Be familiarized with the way labour market institutions operate and affect contemporary labour markets.
- Know the basic theoretical and empirical models and concepts in alternative dispute resolutions in the workplace.
- Critically assess policy implications as well as the basic fundamental characteristics of the native labour market.

General Competencies

The labour relations subject is multidisciplinary and multidimensional with many scientific fields contributing in its understanding. Such fields are Labour Economics, Human Resourse Management, Work Sociology and Labour Law. In general, the labour relations module focus on understanding the individual and collective dimensions and implications of the ways labour market demand and supply work. The students of the module will get familiarized with concepts and models from all the above academic fields with the aim to understand the ways labour relations formulate and operate in the contemporary, internationalized and competitive native labour markets. The basic competencies that the students should acquire from the lectures are:

- Search, use and synthesize data and information necessary for decision making in the labour relations field, with the use of the necessary technological tools.
- Decision making.
- Individual homework.
- Team homework.
- Demonstration of social, work and ethical responsibility with respect to gender issues.

- Development of free, creative and inferential thinking.

3.MODULE CONTENT
The basic aim of the module is to offer students with the knowledge on the ways contemporary labour relations are shaped between employers and employees, as well as to understand the way institutions mediate on these formulated labour relations. Labour relations in modern labour markets are more individualized and less collective due to the ongoing decrease of trade unions' power, the increased labour market competitiveness and the national fundamental labour market characteristics. Based on the above, in the lectures there will be an extensive discussion and presentation of several issues regarding labour relations, starting with the theoretical economics framework of the way modern labour markets operate and focusing on the role of each implicated actor has in the labour market (such as the employees, employers, the state and the labour unions). The lectures will also focus on issues related to work negotiations, employee demands and the means used to success in these demands, such as strikes. Under this framework, special focus will be given to alternative dispute resolution concepts that are discussed in the relevant literature such as mediation and the like. There will also be studied relevant work-related case studies of good practices and intense labour disputes, that occurred at the national and the international level. Certain aspects of contemporary challenges that shape modern labour relations will also be presented such as the role of technology, the globalization, the clients, labour market discrimination and alternative pay schemes. Performance in the module will be assessed with individual and team homework and final written exams.

4. TEACHING AND LEARNING METHODS EVALUATION	
TEACHING METHOD	Mixed
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Use educational platforms for lectures such as MSTEAMS, email, eclass and the like.
ORGANISATION OF TEACHING	The lectures will be held in the Economics Department, although the students have the option to participate online. The study material will be distributed through the module's eclass page. More specifically, the workload of the module is analyzed as follows:

	Type~~Kind~~	Description	WORKLOAD (HOURS)
		Lectures	39
		Study at home	70
		Completion of assignments	40
		Preperation for the final exam	60
		Final Examination	01
		Total	210
MODULE ASSESSMENT	Assessment: 1) Individual homework and/or team homework (40%), 2) Final written exam (60%)		
5. RECOMMENDED BIBLIOGRAGHY			
Suggested Bibliography:	- Boeri T., van Ours, J. (2021). The Economics of Imperfect Labour Markets. (eds.) Princeton University Press, pp. 736. - Dibben P., Gilton K., Skillman G. (2011). Employment Relations. CIPD Publications, pp. 368. - Jacobsen J. P., Skillman G. L. (2004). Labor Markets and Employment Relationships: A Comprehensive Approach. (eds.) Blackwell Publishing, USA, pp. 582. - Kearney R. C. (2011). Labour Relations in the Public Sector. (eds.) Taylor & Francis, 4th ed., pp.406.		

MEASUREMENT OF PRODUCTIVITY AND EFFICIENCY

1.GENERAL

SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**B**
MODULE TITLE	MEASUREMENT OF PRODUCTIVITY AND EFFICIENCY		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
Lectures - Exercises - Actions	3 HOURS	7

TYPE OF MODULE	COMPULSORY
PROREQUISITE MODULES:	NO
LANGUAGE OF TEACHING AND TESTING:	GREEK
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO
MODULE'S URL	eclass.uth.gr

2. LEARNING OUTCOMES

Learning Outcomes

The course aims to provide students with the tools of applied economic analysis to be able to answer the following questions:

• How can I determine the production function of an economic unit?

• How can I measure the technical efficiency of organizations and other economic units?

• How can I measure the productivity of organizations and other economic units?

• How can I identify and propose optimization goals for the production process of organizations and other economic units?

This course is designed to equip students with the knowledge and analytical skills necessary to address these questions in the context of economic analysis and optimization.

General Competencies

The student will have the ability to measure productivity and efficiency using the Data Envelopment Analysis (DEA) method. They will also be able to recognize, understand, and create Malmquist productivity indices and apply the measurement of technical efficiency to organizations and economic units such as banks, hotels, hospitals, and others.

This indicates that the student will acquire skills related to advanced economic analysis techniques, particularly in the context of productivity and efficiency measurement in various types of organizations and economic entities.

3.MODULE CONTENT

The course consists of lectures with a particular emphasis on applied specialized topics in the economics of production. The central aim of the course is to understand fundamental concepts of economic production, with an emphasis on learning and applying methodologies for measuring productivity and efficiency in economic units and organizations.

• Basic introductory concepts related to technology and scale efficiency.

• Profit maximization theory and scale efficiency.

• Production theory and production frontier analysis.

• Parametric and non-parametric approaches to measuring production efficiency.

• Measurement of productivity using the Malmquist index.

This course covers a range of topics related to the economics of production, focusing on practical applications and measurement methodologies for productivity and efficiency in various economic units and organizations.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD

in-person and remote activities or learning (hybrid)

USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES

"Supporting the learning process through the e-class electronic platform. Using email and Microsoft Teams."

This statement indicates the use of electronic platforms and communication tools like email and Microsoft Teams to facilitate and enhance the learning process.

ORGANISATION OF TEACHING

More specifically, the workload of the module is analyzed as follows:

Type~~Είδος~~	Description~~Περιγραφή~~	WORKLOAD (HOURS)
	Lectures	39
	Study at home	80
	Preperation for the final exam	90
	Final Examination	1
	Total	210

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MODULE ASSESSMENT

100% Individual Presentation of a Scientific Article.

5. RECOMMENDED BIBLIOGRAGHY

Suggested Bibliography:	• Coelli, TJ, Rao, D.S.P., O'Donnell CJ, Battese GE. (2005). An introduction to efficiency and productivity analysis, Second edition, Springer. • Ray, S. C. (2004). Data envelopment analysis: theory and techniques for economics and operations research. Cambridge university press • Varian R. H. (1992). Microeconomic Analysis, Third edition, Norton.

SYSTEM DYNAMICS

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	Applications of System Dynamics in Economics and Management		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
		3 HOURS	7
TYPE OF MODULE	COMPULSORY		
PROREQUISITE MODULES:	NONE		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO	NO		

ERASMUS STUDENTS	
MODULE'S URL	eclass.uth.gr

2. LEARNING OUTCOMES

Learning Outcomes

In this course, students learn to apply the System Dynamics (SD) methodology to economic and management problems. SD is used to model and simulate dynamic problems in both social and physical systems.

Upon successful completion of the course, students will:

- Comprehend the fundamental principles of systems thinking and the concepts of emergence, function and performance.
- Identify and describe the relationships between the entities of a system.
- Apply systems thinking to understand complex processes.
- Apply systems thinking to the investigation of administrative, economic and social problems.
- Create systems' models.
- Apply the principles and concepts of SD through a simulation of an administrative, economic or social problem.

General Competencies

- Systems thinking
- Collaboration in a team context
- Problem definition
- Identifying causal links and feedback loops
- Simulation using software
- Formulation and test of dynamic hypothesis
- Recognition of archetypal feedback structures

3.MODULE CONTENT

Introduction to System Dynamics

Systemic complexity and strategic thinking
Systems thinking with feedback
Systems thinking and modeling tools

The dynamics of growth, development and diffusion
- Diffusion models (fashion, innovation, epidemiology)
- Marketing applications and brand strategy
- Business development

Industrial dynamics
- Time lags and path dependence
- Socio-technical Transitions (digital, green, etc.)

Economic dynamics
- Tragedy of the commons
- Crises and economic cycles
- Innovation systems
- Ecological crisis and climate change

Creating System Dynamics models
- Modeling of Dynamic Systems
- Simulation of system dynamics models
- Dynamic hypothesis formulation
- Dynamic hypothesis testing
- After the model: testing and calibration, analysis and reflection

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Hybrid/mixed (flexible-learning)
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Learning process support through the e-class online platform. Use of email, MSTEAMS
ORGANISATION OF TEACHING	More specifically, the workload of the module is analyzed as follows:

~~Kind~~ Type	Description	WORKLOAD (HOURS)
	Lectures	39
	Study at home	78
	Completion of assignments	50
	Preperation for the final exam	40
	Final Examination	3
	Total	210

MODULE ASSESSMENT	Assignments during the semester 30%

	Final semester assignment 70%
5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	Sterman, J. D. (2000) Business Dynamics: Systems Thinking and Modeling for a Complex World, McGraw-HillGraw-Hill. Morecroft, J. D. (2015). *Strategic modelling and business dynamics: A feedback systems approach*. John Wiley & Sons. Cavana, R. Y., Dangerfield, B. C., Pavlov, O. V., Radzicki, M. J., & Wheat, I. D. (Eds.). (2021). *Feedback Economics: Economic Modeling with System Dynamics*. Cham, Switzerland: Springer.

3rd Semester

MODULE	TYPE	ECTS
Dissertation	SELECTIVE	30
Alternatively, instead of dissertation all the following modules		
Forecasting Methods	COMPULSORY	7
Quantitative Methods for making Business Decisions	COMPULSORY	7
Spatial Developent and Strategic Planning	COMPULSORY	7
Economics of Money and Banking	COMPULSORY	7
Research Methodology Seminar III	COMPULSORY	2

DISSERTATION

1.GENERAL		
MODULE TITLE	DISSERTATION	
INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
		30
TYPE OF MODULE	SELECTIVE	
PREREQUISITE MODULES::	MODULES OF 1ST AND 2ND SEMESTER	
LANGUAGE OF TEACHING AND TESTING:	Greek, English	
THE MODULE IS OFFERED TO ERASMUS STUDENTS	No	
MODULE'S URL	eclass.uth.gr/eclass/courses	

2. LEARNING OUTCOMES

The main learning objective to be achieved during the completion of the master's thesis is for the student to develop the necessary knowledge background related to the critical understanding of the subject of the master's thesis, as well as the systematic application of research methodologies and techniques. Specifically, upon completion of the master's thesis, the student should demonstrate that:

• Understands, critically evaluates, and applies techniques for defining and developing a research topic that constitutes a relevant research problem in the field of Applied Economics.

• Selects and formulates specific research objectives and problems that exhibit (to some extent at a master's level) scientific originality and practical relevance.

• Understands and assesses the relationships between research objectives-problems, scientific literature, research methodologies, data collection and analysis techniques, drawing conclusions, and ultimately methods for making managerial decisions.

• Applies research search processes and engages in the critical review of scientific literature relevant to the research topic.

• Conducts research and formulates conclusions that are understandable and lead to interesting results.

• Understands the differences between quantitative research and qualitative research strategies and applies them either independently or in combination, depending on the specific requirements of the research.

• Understands the advantages and disadvantages of research techniques, systematically applies research techniques, and documents the choices made.

• Relies on primary and/or secondary data, which are evaluated for sufficiency, reliability, and validity.

• Formulates understandable and useful conclusions that demonstrate knowledge of the subject and the ability to critically assess other relevant published research results.

• Understands and formulates limitations and weaknesses of the research work.

• Identifies possible directions for future research in the specific area and in accordance with the initial research objectives, and finally

• Broadens their overall knowledge background to enhance further research and professional pursuits.

General Competencies

The postgraduate thesis aims for the student to develop, through a primarily personal research process and under the guidance of the supervisor, a thesis on the chosen subject-object proposed following a relevant proposal. The aforementioned thesis should present:

• A clearly defined contribution to the field of Applied Economics, either through the conduct of original research or through the examination and application of relevant theories and methodologies.

• A well-documented research methodology and the systematic application and utilization of appropriate techniques for data collection, analysis, and processing.

• Comprehensive knowledge of the research subject of the thesis, including the ability to critically evaluate relevant literature.

3. MODULE CONTENT

The research objectives and the content of each postgraduate thesis (Master's thesis) should be relevant to the academic subject of the Master's program (MSc) and should fall within a specific academic field or areas of knowledge.

The research methods involve techniques for collecting and processing reliable data, as well as their documentation through scientific methods (e.g., field research, literature review, statistical analysis, etc.).

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	During the semester in which the postgraduate thesis (MSc thesis) is being completed, the supervising Professor supports the student by providing, in the best guiding manner, the scientific knowledge and expertise in the specific subject of the thesis. This support aims to facilitate the student's gradual progress in writing the thesis.
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Supporting the Learning Process through the e-class Electronic Platform

ORGANISATION OF TEACHING

More specifically, the workload of the course is analyzed as follows:

Type	Description	Workload(hours)
Lectures	This concerns the lectures and presentations that will take place in the Research Methodology Seminar I & II.	2*20=40
Preparation of an MSc thesis proposal	Involves composing the proposal for the MSc thesis.	20
Preparation of Dissertation	It concerns the time required for conducting case studies and implementing exercises, as previously mentioned (Assessment Method).	536
Final Examination	It concerns the duration of the final examination	1
Participation in other activities	Meetings with the Professor for Progress Feedback	3
	Σύνολο	**600**

MODULE ASSESSMENT

The MSc thesis is presented for public defense by the student. The thesis is evaluated by the supervisor and two assessors, who must collectively agree on the final grade for the postgraduate thesis, which may also be the average of the three grades.

The evaluation criteria for the thesis include:

• The significance of the contribution of the specific research to the academic subject of the MSc program.

• Clear definition and significance of the research objectives.

	• Understanding of the research subject and the ability to critically evaluate and utilize relevant literature. • Understanding of research methodology, sufficiency of the research methodology, and systematic use of appropriate research techniques. • Completion of the research and the significance of the results and conclusions. • Writing style of the thesis and the technical presentation quality of the work, which should conform to citation style standards. • Presentation and public defense of the thesis.
5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	• *Calabrese R. L. (2012), Getting It Right: The Essential Elements of a Dissertation, 2nd Edition, Rowman & Littlefield Education.* • *Cohen L., Manion L., Morrison K. (2007), Research Methods in Education, 6th Edition, London & New York, Routledge.* • *Murray R. (2006), How to Write a Thesis, 2nd Edition, Berkshire, UK, Open University Press.* • *Orna E. & Stevens G. (2009), Managing Information for Research: Practical help in researching, writing and designing dissertations, 2nd Edition, Buckingham, UK, Open University Press.* • *Saunders M., Thornhill M., Lewis, P. (2012), Research Methods for Business Students, 6th Edition, Harlow, Essex, UK, Pearson.* • *Yin R. K. (1994), Case Study Research Design and Methods, 2nd Edition, London & New Delhi, Sage.* • *Bell J. (2007), Πως να συντάξετε μια Επιστημονική Εργασία: Οδηγός Ερευνητικής Μεθοδολογίας, Αθήνα, Εκδόσεις Μεταίχμιο.* • *Eco U. (2001), Πως γίνεται μια Διπλωματική Εργασία, Αθήνα, Εκδόσεις Νήσος.* • *Ζαφειρόπουλος Κ. (2015), Πως γίνεται μια Επιστημονική Εργασία: Επιστημονική Έρευνα και Συγγραφή Εργασιών, Αθήνα, Εκδόσεις Κριτική.*

- *Θεοφιλίδης Χ. (2005), Η Συγγραφή Επιστημονικής Εργασίας: Από τη Θεωρία στην Πράξη, Αθήνα, Εκδόσεις Τυπωθήτω-Δαρδανός.*
- *Μπέλλας Θ. (1998), Δομή και Γραφή της Επιστημονικής Εργασίας, Αθήνα, Εκδόσεις Ελληνικά Γράμματα.*
- *Μπουρλιάσκος Β. Γ. (2010), Πως γράφεται μια Επιστημονική Εργασία: Πρακτικός Οδηγός, Συγγραφή Επιστημονικής Εργασίας και Βιβλιογραφική Έρευνα, Αθήνα, Εκδόσεις Διόνικος.*
- *Τοκμακίδης Σ. Π. (2008), Οδηγός για τη Συγγραφή Διπλωματικών Εργασιών, Αθήνα, Ιατρικές Εκδόσεις Π. Χ. Πασχαλίδης.*

Alternatively, instead dissertation the following four modules and the Seminar

FORECASTING METHODS

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		SEMESTER OF STUDY	A
MODULE TITLE	Forecasting Methods		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	ECTS
		3 HOURS	7
TYPE OF MODULE	COMPULSORY		
PROREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		
MODULE'S URL	eclass.uth.gr		
2. LEARNING OUTCOMES			
By attending and successfully completing the course, students will ideally be able to: • understand and apply forecasting models as appropriate.			

- The modelling of forecasting models and models of forecasting models, through which to aim to reproduce the mechanism by which the forecasting mechanism is reproduced.
- the mechanism by which observations of the data are generated.
- specify models.
- assess, test and evaluate forecasting models.
- analyse case studies and provide solutions to data problems.

General Competencies

- Search, analysis and synthesis of data and information, using the necessary technologies.
- Decision-making
- Autonomous work
- Group work
- Working in an interdisciplinary environment
- Project planning and management

3.MODULE CONTENT

3. Basic Concepts and Forecasting Models

- Introductory concepts in econometrics
- Importance of forecasting, forecasting categories, introduction to time series analysis
- Basic characteristics of time series (Trend, Seasonality, Series decomposition into components, Determinant and Stochastic Trend subtraction, Hodrick-Prescott (HP) filter)
- Two Basic Concepts: Stochastic Processes & Stationary Stochastic Processes
- Univariate Models (Long-term Persistence, Monadic Roots, ARMA(p,q) and ARIMA(p,d,q) models, Box Jenkins Methodology, Basic Control Framework, Spectral Density Function, Conditional Heteroscedasticity, Predictions with ARMA(p,q) and ARIMA(p,d,q) models

2. Advanced Forecasting Methods: Non-Random Models

- Non-Linear Time Series Models (ARCH-GARCH Type Models, Bi-linear Models, Auto-parallel Threshold Models, Smooth State Transition Models, Multiple State Models, Technical Neural Network Models)
- Non-Randomness Check of Time Series
- Evaluation of Non-Random Models
- Forecasting with Non-Random Models
- Non-linearity and Chaos
- Multivariate Models

4. Multivariate Models
   - Vector Autoregressive Models (VAR), Estimation of VAR Models and Causality Tests, Forecasting with Vector Autoregressive Models (VAR), Cointegration between Two or Multiple Variables, Testing for Cointegration with Engle Granger and Residual Method, Checking Degree of Integration with Johansen's Method,
   - Error Correction Models, Estimation of Error Correction Models (ECM), Cointegration in Multivariate Systems - VECM Models)
   - Panel Time Series Models (Panel Data Modelling - Fixed Effects and Random Effects Models, Hausan Test, Unit Root Tests on Panel data, Cointegration on Panel data, Dynamic Cointegration Models on Panel Data, Estimation of Models on Panel Data, Heterogeneity of Slope Coefficients on Panel Data,
   - Panel Vector Autoregressive Models (VAR))

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD

In class

USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES

Support of the learning process through the e-class platform. Use of email, MSTEAMS

ORGANISATION OF TEACHING

The delivery of the course takes place in the classrooms of the Department of Economics. Information material is distributed through the course page on the e-class.

More specifically, the workload of the module is analyzed as follows:

Type~~Είδος~~	Description~~Περιγραφή~~	WORKLOAD (HOURS)
	Lectures	39
	Study at home	80
	Completion of assignments	50
	Preperation for the final exam	39
	Final Examination	2
	Total	210

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MODULE ASSESSMENT

Students are assessed through a written examination which includes short answer questions and a set of three group projects.

The final grade is determined as follows:

	Assignments (3 Group Assignments) 60% Final Examination 40% (3 groups of group work (3 groups)) 40% (3 groups) Total 100%
5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	Anagnostou, A. (2022). Classical & Modern Models of Time Series, Kallipos, Volume A. Open Academic Publications. Anagnostou, A. (2023). Classical & Modern Models of Chronological Series Volume B. Kallipos, Open Academic Publications. ¬ Demeli Sophia (2012), Modern Methods of Chronological Series Analysis, Kritiki Publications. Katos A. V. (2004). Econometrics: theory and applications. Theory, Theory, Theory and Methodology. Siriopoulos, K., (1998), Analysis and tests of univariate financial time series, Typothito Publications, Athens, Greece.

QUANTITAVE METHODS FOR MAKING BUSINESS DECISIONS

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	Quantitative Methods for Making Business Decisions		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**

Lectures – Solutions of Examples and Problems – Use of EXCEL and MINITAB (Statistical Package)	3 HOURS	7
TYPE OF MODULE	COMPULSORY	
PROREQUISITE MODULES:	NO	
LANGUAGE OF TEACHING AND TESTING:	GREEK	
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO	
MODULE'S URL	https://eclass.uth.gr/modules/document/?course=ECON_P_143	

2. LEARNING OUTCOMES

Learning Outcomes

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

(a) Integrate additional information collected from sampling surveys into the decision-making processes, thus proposing improved decisions regarding the operational problem under consideration and determining at the same time the monetary value of the additional information.

(b) Distinguish between nominal and effective interest rates in compounding, determine the future and present value of an annuity, and construct tables showing (a) Schedule of sinking funds and (b) loans amortization schedule.

(c) Construct linear programming models for problems referring to product selection, identification of transport/transhipment networks, investment portfolio planning and selection, and financial planning, solve these models using SOLVER of EXCEL, and perform the necessary analysis for writing the appropriate management report at a consulting level.
(d) Construct and solve discrete event simulation models for service systems by defining the logical/physical conditions which determine the time evolution of the system, identifying category "B" and "C" activities, and generating artificial observations of activities duration by generating random numbers from statistical probability distributions.

General Competencies

Postgraduate students will acquire the following general competencies:

(a) Understand the necessity of using quantitative methods for decision-making processes in businesses and organizations.

(b) Understand the concepts of time value of money and the effective management of funds.

(c) Understand the processes of constructing, solving, and analyzing mathematical models describing quasi-real operational and financial decision-making problems.

(d) Understand capabilities, comparative advantages, and conditions/limitations of using the proper quantitative method according to the nature of the operational/financial problem and the decision to be taken.

3.MODULE CONTENT

PRIOR – POSTERIOR ANALYSIS IN DECISION MAKING
Payoff tables, Decision making criteria under risk conditions, Applications of the maximum expected payoff and the minimum expected opportunity losses criteria, Prior analysis and expected value of perfect information, Law of total probability and the Bayes theorem, Types of additional information collected from sampling surveys, Posterior analysis using the Binomial distribution, the Poisson distribution, and the Normal distribution, Posterior expected value of perfect information, Expected value of sample information.

FINANCIAL MATHEMATICS
Time value of money and the interest rate, Compound interest, Equivalence of amounts, Future (Maturity) value of an amount, Present value of a future amount and the discount factor, Determination of time and interest rate in compounding, Nominal and Effective interest rates, Ordinary annuities and Annuities due, Term of an annuity, Payment period, Future value of an annuity and determination of the payment amount, Schedule of sinking funds, Present value of an annuity and determination of the annuity term, Lump sum payment of loans, Amortizing loans and loans amortization schedule.

LINEAR PROGRAMMING
The concepts of activity, limited resources, and objective function in operational/financial linear programming problems, Process of formulating a linear programming model – determination of decision variables – construction of the objective function and constraints of the problem, Entering the linear programming model into EXCEL, Solve the problem using SOLVER, Optimal solution and sensitivity analysis regarding changes (a) in the coefficients of variables in the objective function and (b) in the quantities on the right hand-side of constraints, Applications to problems referring to

product selection, identification of transport/transhipment networks, investment portfolio design and selection, and financial planning.

DISCRETE EVENT COMPUTER SIMULATION IN SERVICE SYSTEMS

Forms and examples of service systems – general notation, Arrival/service distributions and the Poisson law, Operational factors for service systems, Fitting the Poisson distribution to empirical arrival/service distributions, Discrete event simulation principles, Simulation of the M/M/1:GD/∞/∞ system, Generation of random numbers from probability distributions using EXCEL and MINITAB, Table of the system time evolution, Estimation of average waiting times in the queue and in the system.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Post graduate students will attend lectures either by face-to-face meetings or by using synchronous distance education methods
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	The learning process is supported through the use of (a) the electronic platform e-class, the institutional email, and the online classroom of the course on the MS-TEAMS platform, and (b) Microsoft EXCEL and MINITAB (statistical package).
ORGANISATION OF TEACHING	The lectures are delivered in the classrooms of the Department of Economics through the use of Microsoft Office 365 tools (Word, EXCEL, Power-Point). Before each lecture, slides and supporting material have already been posted on the course electronic platform "e-class", so that students can have access to them during the lecture. The existing technological equipment of the above rooms also enables the use of an electronic whiteboard through a WACOM device, which allows writing in presentations and texts with storage capabilities of rich texts and presentations. The enriched texts containing comments on the lectures and solutions to exercises and problems are also posted in the e-class after the end of each lecture. This uploaded material on e-class includes also files containing additional problems and exercises that students are invited to solve in order to practice and understand the taught material. Solutions and comments on these problems are given either during lectures or during office hours announced by the teacher responsible (in special cases even via e-mail using students' institutional accounts) More specifically, the workload of the module is analyzed as follows:

	Type~~Είδος~~	Description~~Περιγραφή~~	WORKLOAD (HOURS)
		Lectures	39
		Study at home	110
		Completion of assignments	35
		Preparation for the final exam	24
		Final Examination	2
		Total	210
MODULE ASSESSMENT	**FIRST SEMESTER EXAMINATION PERIOD** Individual/group work: 30% Written exam: 70% **REPEAT EXAMINATION** Written exam: 100%		

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5. RECOMMENDED BIBLIOGRAGHY

Suggested Bibliography:

- Anderson, D.R., Sweeney, D.J., Williams, T.A., Martin, K., (2014), "*Management Science – Quantitative methods for Making Business Decisions*", *KRITIKI Publication.*
- Efthymoglou, P., Eleftheriadis, I., (2017), "*Financial Mathematics and elements of Insurance Mathematics*", 4th Edition, BROKEN HILL PUBLISHERS LTD.
- Prastakos, G., (2006), "*Management Science, Business Decision Making in the Information Society*", Β΄ Edition, STAMOULIS Publication.

	– Taylor, B.W. (2018), "*Introduction to Management Science*", BROKEN HILL PUBLISHERS LTD.

SPATIAL DEVELOPMENT AND STRATEGIC PLANNING

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**
MODULE TITLE	SPATIAL DEVELOPMENT AND STRATEGIC PLANNING		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
Lectures – assignments		3 HOURS	7
TYPE OF MODULE	Compulsory course		
PREREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		
MODULE'S URL	https://eclass.uth.gr/courses/ECON_P_188/		

2. LEARNING OUTCOMES

Learning Outcomes

Upon completion of the course students are expected to:

- understand the concept of territory at different spatial scales, and the scope of regional science
- understand the basic principles of spatial development and competitiveness theories
- understand the broader economic, social, political and technological changes which are redefining the dynamics of spatial development
- understand the concept of strategic planning and its role in development
- understand the levels of strategic planning
- analyse development dynamics at the local level
- follow the development of strategic plans and spatial development programmes
- understand the dimensions and implement policies and actions based on local specificity, uniqueness and dynamics

General Competencies

It is useful students to have general knowledge and analytical skills concerning the spatial organisation of the economy at different spatial scales (urban, regional, national) and basic knowledge of economics

3.MODULE CONTENT

1. SPATIAL DEVELOPMENT, REGIONAL SCIENCE AND OTHER METHODOLOGICAL ISSUES
2. STRUCTURAL CHANGES AND THE ORGANISATION OF SPACE
3. THEORIES OF REGIONAL DEVELOPMENT AND SPATIAL DISPARITIES
4. LOCAL ECONOMIC DEVELOPMENT
5. DIMENSIONS AND MEANS OF REGIONAL POLICY IMPLEMENTATION

6. THE COMMONS: AN ALTERNATIVE PARADIGM FOR BOTTOM-UP DEVELOPMENT
7. STRATEGIC AND TACTICAL PLANNING
8. POLICIES AND PLANNING TOOLS FOR DEVELOPMENT
9. BUSINESS PLANS: ANALYSIS - ROLES - PARTICIPATORY PROCESS
10. SPECIFIC DEVELOPMENT ISSUES WITH A FOCUS ON TOURISM, CULTURE AND THE ENVIRONMENT
11. DEVELOPMENT PROGRAMMES, STRATEGIC PLANNING AND NEW FORMS OF DEVELOPMENT

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	In-person/ Online/ Mixed
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Support for the learning process through the e-class platform and MSTeams. Communication via email.
ORGANISATION OF TEACHING	The delivery of the course takes place in the classrooms of the Department of Economics. Informative and educational material is distributed through the course page in the e-class More specifically, the workload of the module is analyzed as follows:

Type~~Είδος~~	Description~~Περιγραφή~~	WORKLOAD (HOURS)
	Lectures	39
	Study at home	60
	Completion of assignments	60

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	Preperation for the final exam	21
	Final Examination	2
	Total	182
MODULE ASSESSMENT	Written examinations or individual or group assignments	

5. RECOMMENDED BIBLIOGRAGHY

Suggested Bibliography:

- Armstrong H.W. and Taylor J. (2000) *Regional economics and policy*, Blackwell
- Pike A., Rodriguez-Pose A. and Tomaney J. (2006) *Local and regional development*, Routledge
- Πετράκος Γ. και Ψυχάρης Γ. (2016) *Περιφερειακή Ανάπτυξη στην Ελλάδα*, 2η εκδ. Κριτική
- Πολύζος Σ. (2011) *Περιφερειακή Ανάπτυξη*, Κριτική

ECONOMICS OF MONEY AND BANKING

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**A**

MODULE TITLE	ECONOMICS OF MONEY AND BANKING		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
Lectures – Exercises - Case Studies		3 HOURS	7
TYPE OF MODULE	COMPULSORY		
PREREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		
THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO		
MODULE'S URL	eclass.uth.gr		

2. LEARNING OUTCOMES

Learning Outcomes

The aim of the course is to provide the necessary theoretical background in the scientific field of money and banking and to contrast it with reality and practice in the modern financial market. By the end of the course, the student will have gained knowledge about banking administration issues such as the management of bank assets and liabilities, measurement and hedging of banking risks, but also about the role and effectiveness of the central bank in the modern macroeconomic environment.

General Competencies

The course presents specialized topics in monetary and banking economics. It has as its subject the theory and policy of money as it interacts with the various forms of banking activities. The role of banks in the modern environment is studied, the main risks they face, and various ways of reducing these risks are proposed using financial derivatives and other techniques. Emphasis is also placed on issues of central banking theory, such as the importance of banking supervision, the independence

of the central bank, the measurement of the effectiveness of monetary policy and the transmission mechanisms of monetary policy in the real economy. Students acquiring this knowledge will have the necessary skills to work in financial institutions and international organizations, as well as in investment companies.

3.MODULE CONTENT

The course will cover the following subjects:

Financial Intermediation and Trends in Domestic and International Banking. Introduction of new technologies in banking management (financial innovation), deregulation and globalization and their effect on banks and their profitability. The role of capital markets in the process of financial intermediation, the determination of the market interest rate and the role of banks in the process of financial intermediation (information asymmetry, transaction costs, ensuring liquidity).

Banking Structures, Bank Performance, output, and efficiency. Retail and wholesale banking. Economies of scale in banking. Expansion and specialization of operations, the path towards universal banks. Performance measures of a banking institution and key determinants of their profitability. The effect of mergers and acquisitions on bank efficiency.

The Theory of the Banking Firm. The industrial organization approach to banking. The presentation of the perfect competition model, the Monti-Klein model of a monopoly bank, the oligopolistic competition model.

Principles of Bank Management. The application of a strategic management model in banking management. Asset-liability management, liquidity management, capital adequacy.

Bank Risks & Risk Management. Definitions of the risks faced by banks (credit risk, interest rate risk, currency risk, market risk, etc.). Management of interest rate sensitivity: capital exposure management, (Gap analysis), the concept of duration, duration exposure, curvature and senior duration and the hedging of interest rate risk using derivative products. The management of exchange risk with derivative products.

Bank Regulation. Credit analysis and the concept of securitization. Market risk and the value at risk approach (VaR analysis). Arguments for and against banking supervision. Regulatory capital. Basel Accord. Core and additional equity capital. Insurance coverage of deposits.

Modern Views about Monetary Policy. Aggregate Supply and Demand. Money and Inflation. The rational expectations revolution and neo-Keynesian and neo-classical views on the conduct of monetary policy. The theory of central banking, independence of the central bank, objectives, and possibilities of monetary policy. Discretionary monetary policy versus monetary policy with rules. Presentation of the Taylor rule in monetary policy.

4. TEACHING AND LEARNING METHODS EVALUATION

<table>
<tr><td>TEACHING METHOD</td><td>Mixed</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES</td><td>Learning process support through the e-class online platform. Email usage, MSTEAMS.</td></tr>
<tr><td>ORGANISATION OF TEACHING</td><td>The lectures of the course take place in the halls of the Department of Economic Sciences. Informational material is distributed through the course page in the e-class, case studies are discussed, exercises are solved, and various videos are analyzed related to applications of theory in practice.

More specifically, the workload of the course is broken down as follows: (indicative):

<table>
<tr><th>Types</th><th>Description</th><th>WORKLOAD (HOURS)</th></tr>
<tr><td></td><td>Lectures</td><td>39</td></tr>
<tr><td></td><td>Study at home</td><td>80</td></tr>
<tr><td></td><td>Completion of assignments</td><td>50</td></tr>
<tr><td></td><td>Preparation for the final exam</td><td>39</td></tr>
<tr><td></td><td>Final Examination</td><td>2</td></tr>
<tr><td></td><td>Total</td><td>210</td></tr>
</table>
</td></tr>
<tr><td>MODULE ASSESSMENT</td><td>Assignment 40%

Final Exams 60%</td></tr>
<tr><td colspan="2">5. RECOMMENDED BIBLIOGRAGHY</td></tr>
<tr><td>Suggested Bibliography:</td><td>- Siriopoulos C., Papadamou, S. (2014) Introduction to Economics of</td></tr>
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Banking and Capital Markets, Edition Utopia. In Greek.
- Casu B., Girardone C., Molyneux P., (2017 Introduction to Banking, 2nd Edition Tziola. In Greek.
- Jagdish Handa, (2002) Monetary Economics, Routledge: London.
- Matthews, K & Thompson (2014) The Economics of Banking, John Wiley and Sons.
- Mishkin F. S (2018) The Economics of Money, Banking and Financial Markets, (7th international edition), Addison-Wesley.

RESEARCH METHODOLOGY SEMINAR III

1.GENERAL			
SCHOOL	SCHOOL OF ECONOMICS AND BUSINESS		
DEPARTMENT	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDIES	POSTGRADUATE LEVEL		
MODULE CODE		**SEMESTER OF STUDY**	**C**
MODULE TITLE	Research Methodology III		
INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**	
Lectures - Exercises – Practices- Use of EXCEL and R programming language	3 HOURS	7	
TYPE OF MODULE	COMPULSORY		
PROREQUISITE MODULES:	NO		
LANGUAGE OF TEACHING AND TESTING:	GREEK		

THE MODULE IS OFFERED TO ERASMUS STUDENTS	NO
MODULE'S URL	eclass.uth.gr

2. LEARNING OUTCOMES

Learning Outcomes

The teaching of the course " Research Methodology III " aims to:

• Familiarize students with the necessary knowledge and techniques that enable researchers of economic phenomena to quantify and estimate economic relationships governing the operation of economic units and markets using statistical methods.

• Equip students with the necessary tools for verifying and evaluating econometric models and conducting forecasts.

• Introduce students to the analysis of time series data.

By the end of the course, students should be able to:

• Specialize and select an econometric model.

• Estimate a classic linear model.

• Test, examine, and evaluate an econometric model.

• Evaluate and address issues related to violations of the assumptions of a model.

• Design, estimate, and test time series models and perform forecasts.

• Apply the estimated models using the R programming language.

General Competencies

- Data and information search, analysis, and synthesis using the necessary technologies.
- Adaptation to new situations.
- Decision-making.

- Autonomous work.
- Teamwork.
- Work in an international environment.
- Work in an interdisciplinary environment.
- Project design and management.
- Generation of new research ideas.

3.MODULE CONTENT

- Simple and multiple linear regression (OLS): Assumptions, sample estimation, hypothesis testing, significance tests for variables and linear constraints, simple and adjusted coefficient of determination, properties of estimators.
- Violations of assumptions: Autocorrelation, heteroscedasticity, statistical tests (White, Durbin-Watson, Breusch-Godfrey), GLS and FGLS estimators, correlation of explanatory variables and error term, multicollinearity, misspecification.
- Models of limited dependent variables.
- Vector Autoregressive (VAR) models and causality tests.
- Non-stationarity and unit root tests.
- Cointegration and error correction models. Identification in standard and cointegrated systems.
- Time-varying coefficient models.
- Traditional panel data models.
- Dynamic heterogenous panels.
- Non-stationary panels.

4. TEACHING AND LEARNING METHODS EVALUATION

TEACHING METHOD	Hybrid
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Support for the learning process is provided through the use of: (a) The e-class electronic platform, institutional email, and the online course on the MS-TEAMS platform. (b) The R programming language.
ORGANISATION OF TEACHING	The course is delivered within the classrooms of the Department of Economic Sciences, utilizing Microsoft Office 365 tools (Word, Excel, PowerPoint) and the R programming language. Lecture slides and supporting materials for each session are already posted on the e-class

electronic platform for students to access during the lecture. The existing technological equipment in the classrooms also allows the use of an electronic whiteboard via a WACOM device, which enables writing on presentations and texts with the ability to save enriched texts and presentations. Enriched texts containing comments on the lectures, as well as solutions to exercises and problems, are also uploaded to the e-class of the course after each lecture. Files containing additional exercises and problems for practice and understanding of the course material are provided for each topic. Solutions and comments for these problems are given either during the lectures or during specified office hours announced by the instructor (in special cases, even through email using students' institutional accounts).

More specifically, the workload of the module is analyzed as follows:

Type~~Είδος~~	Description~~Περιγραφή~~	WORKLOAD (HOURS)
	Lectures	39
	Study at home	80
	Completion of assignments	50
	Preperation for the final exam	39
	Final Examination	2
	Total	210

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MODULE ASSESSMENT	EXAMINATION PERIOD A' SEMESTER Individual/Group Assignment: 30% Written Exam: 70% REPEAT EXAMINATION

	Written Exam: 100%
5. RECOMMENDED BIBLIOGRAGHY	
Suggested Bibliography:	- Greene, W. H. (2003). Econometric analysis. Pearson Education India. - Wooldridge, J. M. (2015). Introductory econometrics: A modern approach. Cengage learning. - Gujarati, D. N. (2022). Basic econometrics. Prentice Hall. - Stock, J. H., & Watson, M. W. (2015). Introduction to econometrics 3rd ed. - Baltagi, B. H., (2008). Econometric analysis of panel data (Vol. 4). Chichester: Wiley. - Wooldridge, J. M. (2010). Econometric analysis of cross section and panel data. MIT press.

II 3.4 «Public and Local Government Organization Management»

1st Semester

MSc Applied Economocs with specialization in Public and Local Government Organization Management		
MODULES	**TYPE**	**ECTS**
Public Organizations Management	COMPULSORY	7
Public Economics	COMPULSORY	7
Spatial Development and Strategic Planning	COMPULSORY	7
Applied Economic Analysis	COMPULSORY	7
Research Methodology Seminar I	COMPULSORY	2