

**ΟΙΚΟΝΟΜΙΚΟ
ΠΑΝΕΠΙΣΤΗΜΙΟ
ΑΘΗΝΩΝ**



ATHENS UNIVERSITY
OF ECONOMICS
AND BUSINESS

SCHOOL OF BUSINESS

DEPARTMENT OF MANAGEMENT SCIENCE AND TECHNOLOGY



MSc in

**Management Science
& Technology**

ATHENS UNIVERSITY OF ECONOMICS & BUSINESS

**STUDY GUIDE
ATHENS, MAY 2021**

PART I: INFORMATION ABOUT THE INSTITUTION

CONTACT DETAILS (Name & Address)

ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS (AUEB)

Address: 76, Patission Str. GR-10434, Athens

Telephone number: +30-210-8203911

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

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

Twitter: <https://twitter.com/aueb>

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

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

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

ACADEMIC AUTHORITIES

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

Rector:

Professor Dimitris Bourantonis

Vice Rectors:

Vice Rector of Academic Affairs and Personnel

Professor Vasilios Vasdekis

Vice Rector of Research and Lifelong Learning

Associate Professor Georgios Lekakos

Vice Rector of Financial Planning and Infrastructure

Professor Konstantinos Drakos

Vice Rector of International Cooperation and Development

Professor Vasilios Papadakis

School of

Dean: Professor Georgios Siomkos

Department of

Chair: Professor Nancy Pouloudi

Master's Program

Director: Associate Professor Georgios Lekakos

Contact details

Address: 47a Evelpidon Str, GR-113 62, Athens

Telephone number: +30-210-8203685

Email: ms-mst@aub.gr

Website: <https://management.aueb.gr/>

ACADEMIC CALENDAR

Re-sit exam period September- October 2020

Start of Exams:	Monday, September 7, 2020
End of Exams:	Friday, September 11, 2020

FALL SEMESTER

Classes begin:	Monday, September 28, 2020
End of 1 st period:	Saturday, November 7, 2020
Start of 2 nd period:	Monday, November 30, 2020
Break before Christmas Holidays:	Tuesday, December 22, 2020
Classes restart:	Thursday, January 7, 2021
Classes end:	Saturday, January 23, 2021

Exams' period of Fall Semester

Exams of 1 st period (November):	23/11/2020 – 28/11/2020
Exams of 2 nd period (February):	01/02/2021 – 13/02/2021

Holidays

October 28 Holiday - The Anniversary of the "No", Wednesday, October 28, 2020
The Anniversary of Polytechnio, Tuesday, November 17, 2020
Epiphany, Wednesday, January 6, 2021

SPRING SEMESTER

Classes begin:	Monday, February 2, 2021
End of 1 st period:	Saturday, March 27, 2021
Start of 2 nd period:	Monday, April 19, 2021
Break before Easter Holidays:	Friday, April 23, 2021
Classes restart:	Monday, May 10, 2021
Classes end:	Saturday, June 12, 2021

Exams' period of Spring Semester

Exams of 1 st period (April):	05/04/2021 – 17/04/2021
Exams of 2 nd period (June - July):	22/06/2021 – 03/07/2021

Holidays

Clean Monday, Monday, March 15, 2021
Greek Independence Day, Thursday, March 25, 2021
Pentecost Monday, Monday, June 21, 2021

UNIVERSITY LEADERSHIP & STRUCTURE

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

THE SENATE

The **Senate** consists of:

- the Rector,

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

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

SCHOOLS

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

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

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

DEPARTMENTS

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

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

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

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

UNIVERSITY STAFF

The University staff consists of the following categories:

TEACHING STAFF:

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

ADMINISTRATIVE STAFF

STUDENT SERVICES & FACILITIES

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

GENERAL DESCRIPTION OF THE UNIVERSITY

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

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

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

LIST OF DEGREE PROGRAMMES

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

A/A	DEPARTMENTS	SPECIALIZATIONS
1.	International and European Economic Studies	1. International Economics and Finance 2. International and European Political Economy

2.	Economics	<ol style="list-style-type: none"> 1. Economic Theory and Policy 2. Business Economics and Finance 3. International and European Economics
3.	Management Science and Technology	<ol style="list-style-type: none"> 1. Operations Research and Business Analytics 2. Operations and Supply Chain Management 3. Software and Data Analysis Technologies 4. Information Systems and Electronic Business 5. Strategy, Entrepreneurship and Human Resources
4.	Business Administration	<ol style="list-style-type: none"> 1. Business Administration 2. Information Systems Management 3. Accounting and Financial Management 4. Marketing
5.	Accounting and Finance	<ol style="list-style-type: none"> 1. Accounting 2. Finance
6.	Marketing and Communication	<ol style="list-style-type: none"> 1. International Management, Innovation and Entrepreneurship 2. Human Resource Management 3. Business Analytics 4. Digital Marketing
7.	Informatics	<ol style="list-style-type: none"> 1. Theoretical Computer Science 2. Computer Systems and Networks 3. Information Systems and Information Security 4. Databases and Knowledge Management 5. Operational Research and Economics of Information Technology 6. Computational Mathematics and Scientific Calculations
8.	Statistics	No specializations are offered

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

ADMISSION/REGISTRATION PROCEDURE

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

MAIN UNIVERSITY REGULATIONS

The regulations include:

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

ECTS COORDINATOR OF THE UNIVERSITY

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

PARTII: INFORMATION ON DEGREE PROGRAMMES

A.GENERAL DESCRIPTION

QUALIFICATION AWARDED

The Postgraduate Program awards the MSc in Management Science and Technology.

ADMISSION REQUIREMENTS

The selection criteria for candidates are defined in the notice and include in particular:

- I. Degree/s grade.
- II. Duration and type of employment.
- III. Other skills (grade in GMAT / GRE exams, IT skills, relevant seminars, etc.).

as well as the following quality criteria:

- IV. University and Department of Origin.
- V. Type of research experience.
- VI. Knowledge of English at C1 / C1 level.
- VII. Interview,
- VIII. Letters of recommendation from faculty members or employers.
- IX. Any distinctions / awards.

ADMISSION/REGISTRATION PROCEDURE

The registration of the each year’s admitted postgraduate students takes place from June to October of each year, within deadlines set by the CC of the MSc.

The candidate, before registering, acquaints himself/herself of the Operation Regulation and the establishment act of the MSc and declares in writing that he/she accepts the Operation Regulation of the program. For reasons of exceptional necessity, the Assembly may decide, upon a reasoned request by the person concerned, that registration may take place within one month of the expiry of the deadline.

EDUCATIONAL AND PROFESSIONAL GOALS

The Postgraduate Studies Program (MSc) entitled "MSc in Management Science and Technology" has as object to prepare scientists and executives who can optimally combine knowledge in management science, information technology and organizational studies in order to efficiently manage organizations and companies.

The program focuses on the following fields:

- (a) Quantitative Methods and Business Research.
- (b) Information Technology Management and Electronic Business.
- (c) Organizational Studies and Business Strategy.
- (d) Supply Chain and Transport Management.

ACCESS TO FURTHER STUDIES

It is possible to continue studies at the Doctoral level.

COURSE STRUCTURE DIAGRAM WITH CREDITS (60 PER YEAR)

FULL TIME PROGRAM
1 st Semester of the MSc (ECTS)

Course Title	ECTS
Core Courses	
Theories of Management and Organization	5
Managerial Decision Making	5
Theories and Management of Information Systems	5
Elective Courses	
Production and Operations Management	2.5
Organizational Behaviour	2.5
Software Systems	2.5
Business Statistics	2.5
Investment and Corporate Finance	2.5
Supply Chain Management	2.5
Data Management	2.5
Mathematical Programming	2.5
Business Process Management	2.5
Business Strategy	2.5
Digital Marketing	2.5
Seminar	
Special Topics in Management, Entrepreneurship and Technology I	-
Total of the 1 st Semester	30
2nd Semester of the MSc (ECTS)	
Course Title	ECTS
Core Courses	
Advanced Topics in Management Science and Technology	5
Elective Courses	
Platforms and Applications in Business Analytics	5
Business Intelligence	2.5
Financial Econometrics / Management	2.5
Entrepreneurship and Innovation	2.5
Human Resources Management	2.5
Analysis and Planning of Transportation and Distribution Systems	2.5
Inventory Management	2.5
Combinatorial Optimization	2.5
Transportation Systems Management	2.5
Retail Systems Management	2.5
Introduction to Business Analytics using Python	2.5
Network and Digital Economy	2.5
Platforms, Networks and Innovation	2.5
Project Management	2.5
Digital Currencies and Electronic Payment Systems	2.5
Quality Systems Management	2.5
Developing Competencies for Management and Innovation	2.5
Industrial Systems in the Digital Era	2.5
Design Digital Services	2.5
Digital Marketing in Tourism	2.5
Seminars	
Special Topics in Management, Entrepreneurship and Technology II	-

Personal Improvement and Employability of students	-
Total of the 2 nd Semester	30
Total of 1 st & 2 nd Semester	60

PART TIME PROGRAM	
1st & 3rd Semester of the MSc (ECTS)	
Course Title	ECTS
Core Courses	
Theories of Management and Organization	5
Managerial Decision Making	5
Theories and Management of Information Systems	5
Elective Courses	
Production and Operations Management	2.5
Organizational Behaviour	2.5
Software Systems	2.5
Business Statistics	2.5
Χρηματοοικονομική Επενδύσεων και Εταιρειών	2.5
Supply Chain Management	2.5
Data Management	2.5
Mathematical Programming	2.5
Business Process Management	2.5
Business Strategy	2.5
Digital Marketing	2.5
Seminar	
Special Topics in Management, Entrepreneurship and Technology I	-
Total of the 1 st & 3 rd Semester	30
2nd & 4th Semester of the MSc (ECTS)	
Course Title	ECTS
Core Courses	
Advanced Topics in Management Science and Technology	5
Elective Courses	
Platforms and Applications in Business Analytics	5
Business Intelligence	2.5
Financial Econometrics / Management	2.5
Innovation and Entrepreneurship	2.5
Human Resources Management	2.5
Analysis and Planning of Transportation and Distribution Systems	2.5
Inventory Management	2.5
Combinatorial Optimization	2.5
Transportation Systems Management	2.5
Retail Systems Management	2.5
Introduction to Business Analytics using Python	2.5
Network and Digital Economy	2.5
Platforms, Networks and Innovation	2.5
Project Management	2.5
Digital Currencies and Electronic Payment Systems	2.5
Quality Systems Management	2.5

Developing Competencies for Management and Innovation	2.5
Industrial Systems in the Digital Era	2.5
Design Digital Services	2.5
Digital Marketing in Tourism	2.5
Seminars	
Special Topics in Management, Entrepreneurship and Technology II	-
Personal Improvement and Employability of students	-
Total of the 2 nd & 4 th Semester	30
Total of All 4 Semesters	60

FINAL EXAMINATION

The two semesters in the full-time program are divided into four teaching periods and the four teaching semesters in the part-time program are divided into eight teaching periods. In both programs - full-time and part-time - examinations are held four times in each academic year, in the following months: November, January / February, April and June / July. The schedule of courses / exercises and exams of each semester is prepared and announced at least ten days before the beginning of the semester.

EXAMINATION AND ASSESSMENT REGULATIONS

1. The final evaluation of each course is done either through written or oral examinations and / or assignments.
2. The final grade of each course is determined by the respective teachers. The individual and group assignments of students can be included. Participation in the examination on the specific date announced in accordance with the Program is compulsory.
3. The grading scale is set from zero (0) to ten (10) with grades of the whole or half unit. Passing grades are considered the total grade of 5 and the highest.
4. In the event that a student does not come unjustifiably on the specific examination date of a course, s/he loses the examination period and the course is considered as failed.
5. In case of failure in a course or exceeding the limit of absences, the postgraduate student is obliged to repeat the course attendance. In case of failure in a course, a re-examination may be carried out twice, according to the professor's instructions as regards the type of examination, but not a third time. The re-examination does not require a re-registering. Specific arrangements and cases are examined by the Coordinating Committee.
6. For the award of the MSc, a promotional degree is required in all postgraduate courses and in the dissertation. If this condition is not met within the expected period, the postgraduate student is only entitled to a simple certificate of successful attendance of the courses, where he/she received a promotional degree and the postgraduate student's attendance of the Program is completed.
7. The Assembly of the Department of Management Science and Technology upon the recommendation of the Coordinating Committee may decide to delete postgraduate students if the failed courses exceed two courses of 5 credits (or four courses of 2.5 credits) per academic term.
8. In any case of delete of the postgraduate student, any tuition fees paid shall not reimbursed, unless there are special reasons and the Assembly shall justifiably decide otherwise upon the proposal by the Coordinating Committee of the MSc

INTERSHIP

The dissertation or field study project or internship is compulsory and performed for full-time students upon completion of the course during the third semester while for part-time students in the fourth semester.

The students of the program may choose to pursue a field study project instead of a dissertation, with a few hours of weekly meetings of the student in the company, or b) Internship, lasting at least 3 months and working up to 40 hours per week, in a company-provider with the scope of solving real-life problems related to the subject of the dissertation, field study project or internship. The above options will have the same impact and the same Credit Units as the dissertation, as mentioned in the studies regulation.

STUDIES ADVISOR

Each student of the MSc in Management Science and Technology has a Study Advisor (Tutor), who is assigned at the beginning of the academic year. The student can contact the Studies Counselor in order to consult him / her either on educational issues or on any issue that influences his / her studies.

B. DESCRIPTION OF INDIVIDUAL COURSE UNITS

CORE COURSES

Managerial Decision Making

Course title	Managerial Decision Making
Course code	Full Time Program: m81101f Part Time Program: m81101p
Type of course	Core
Year of study	Full Time Program: 1 st Part Time Program: 1 st
Semester/trimester	Full Time Program: 1 st Part Time Program: 1 st
Number of credits allocated	5 ECTS
Name of lecturer	Manolis Kritikos, Associate Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<ul style="list-style-type: none">• The main objective of the Course is to introduce and familiarize the student in the methodology of decision making, as well as in the major models used today. The course covers both theoretical and practical implications related to Operations Research.• At the end of the course students will be able to:• understand and formulate complex decision-making problems.• develop the appropriate decision-making problems.• use decision making models to effective decision making.• solve difficult combinatorial optimization problems.• implement models in many business functions.• use computer technology efficiently to make the best decision.• analyse methodologies and techniques using case studies to make effective business decisions (part-time program).
Prerequisites	No prerequisites.
Course contents	The course consists of twelve three-hour lectures. The topics covered in

	<p>these lectures are the following:</p> <p>Management Science, the Management Science approach to problem solving, Linear programming: model formulation, graphical solution and computer solution, Sensitivity analysis in linear programming problems, Linear programming: modeling examples, Integer programming, 0-1 Integer programming modeling examples, Heuristics in Combinatorial Optimization, Transportation, Transshipment, and Assignment problems, Network flow models, Multicriteria decision making, Decision analysis and Simulation.</p>
Recommended reading	<ul style="list-style-type: none"> • B. W. Taylor III, (2019), Introduction to Management Science, Bernard Pearson Educational Limited. • N. Balakrishnan, B. Render, P. M. Stair, Jr., (2013), Managerial Decision Modeling with Spreadsheets, Pearson Educational Limited . • G. L. Nemhauser and L. A. Wolsey, (1999), Integer and Combinatorial Optimization, Wiley- Interscience. • W. W. Cooper, L. M. Seiford and K. Tone, (2007), Data Envelopment Analysis, Springer. • Z. Michalewicz and D.B.Fogel, (2004), How to solve it: Modern Heuristics, Springer. • H. A. Taha, (2016), Operations Research: An Introduction, 10th edition, Prentice Hall, 2016. • W. L. Winston and S. C. Albright, (2002), Practical Management Science, South-Western College Pub.
Teaching methods	<ul style="list-style-type: none"> • The course consists of twelve three-hour lectures.
Assessment methods	<p>The final grade will be based on homework and case studies, class participation and a final exam.</p> <p>The breakdown of the final grade will be approximately as follows:</p> <ul style="list-style-type: none"> • 10 % class participation and homework. • 20% case study or a group project (researching and writing a report), in groups two or three students. • 70% final examination.
Language of instruction	Greek/English

Theories and Management of Information Systems

Course title	Theories and Management of Information Systems
Course code	Full Time Program: m81102f Part Time Program: m81102p
Type of course	Core
Year of study	Full Time Program: 1 st Part Time Program: 1 st
Semester/trimester	Full Time Program: 1 st Part Time Program: 1 st
Number of credits allocated	5ECTS
Name of lecturer	A. Pouloudi, Professor A. Pouloumenakou, Associate Professor
Objective of the course (preferably expressed in terms of learning	The main objective of the course is to provide a broad understanding of

outcomes and competences)	the importance of Information Systems (IS) in the modern business and social context by developing the required knowledge for the analysis of complex phenomena related to the development, adoption and use of new technologies in order to make the appropriate business decision regarding the acquisition and use of information systems.
Prerequisites	No prerequisites.
Course contents/Syllabus	<ul style="list-style-type: none"> • Information Technology and Systems. Basic Concepts and Business Utilization • Information Systems for Supporting and Integrating Intra-organizational processes • Decision Support Management Systems • Automation/Support of Inter-organizational processes and transactions. Creation of New Digital Ventures (e-Commerce Systems) • Strategic Information Systems for Innovation and Competitive Advantage • Information Resource Management and Strategic IT Planning • Dissemination and management of organization data and information • Information systems development approaches - The exploratory study using the methodology of variable systems • Requirements Analysis - UML Tools (1): Use case diagrams • Requirements Analysis - UML Tools (2): Class diagrams • Organization policies for data and information management • Challenges during the implementation of IT system. Change Management topics – student assignment (in groups) and presentation based on given case studies • Workshops: implementation of core business scenarios in SAP ERP
Recommended reading	<p>Main readings:</p> <ul style="list-style-type: none"> - E. Turban, L. Volonino, Information Technology for Management, 8th Edition, 2012, John Wiley & Sons, Inc. - G. Doukidis (2011) Innovation, Strategy of Development and Information Systems. Publisher Klidarithmos <p>Supporting readings:</p> <ul style="list-style-type: none"> - Dennis, Wixom, Tegarden. Systems Analysis and Design using UML 2.0, Publisher Kliarithmos - Oz E. Management Information Systems, Course Technology, 6th edition - J. Laudon, K. Laudon, Essentials of Management Information Systems, Prentice Hall, 8th edition - M.H. Sheriff, Managing Projects in Telecommunication Services, Wiley-IEEE Press

	- Selected case studies
Teaching methods	Lectures, case studies, hands-on in SAP ERP and ARIS toolset (labs)
Assessment methods	Course evaluation is based on the following criteria: <ul style="list-style-type: none"> • Written Exam: 40% • Information System Analysis of an organization (group assignment): 40% • Study and present a case study (group assignment): 10% • Laboratory grade (SAP ERP Lab): 10% [+ 10% under conditions (optional attendance)]
Language of instruction	Greek / English

Theories of Management and Organization

Course title	Theories of Management and Organization
Course code	Full Time Program: m81103f Part Time Program: m81103p
Type of course	Core
Year of study	Full Time Program: 1 st Part Time Program: 2 nd
Semester/trimester	Full Time Program: 1 st Part Time Program: 3 rd
Number of credits allocated	5ECTS
Name of lecturer	Eric Soderquist, Professor Dimitris Manolopoulos, Assistant Professor Maria Boura, PhD
Objective of the course (preferably expressed in terms of learning outcomes and competences)	Students should be able to: Part “Firm, Organizational and Management Theories” 1. Understand and describe the evolving nature of the company, the structural dimensions of organizations, their daily operation, and the importance of the managerial function for their survival and development in a competitive environment. 2. Acquire knowledge, skills and methodologies of the way companies are organized, operate, manage and strategize, and be able to critically evaluate the effectiveness of their managerial function. Part “Innovation Management” 3. Analyze the innovation dynamics of an organization and propose actions for developing and enhancing innovation outcomes, 4. Apply methods and tools for the structuring, development and evaluation of innovation processes and outcomes, including technology and product life cycles, Stage-Gate Model, and 10 Types of Innovation. Part “Business Ethics” 5. Understand the importance of business ethics and its impact on business value and sustainability. 6. To develop critical thinking skills through the application of conceptual frameworks and theories about ethical dilemmas in the business environment.

Prerequisites	No prerequisites.
Course contents	<p>Part “Firm, Organizational and Management Theories” Organizations operate within a multifaceted context, with the overall objective to develop their competitiveness and achieve sustainability. A core prerequisite towards this direction is an effective way of management. Students are introduced in concepts, theories, and methodologies which contribute to their understanding of the corporate / organizational evolution.</p> <p>Part “Innovation Management” Students are introduced to the notions and concepts of innovation, different types of innovation, and the structures, processes and methods used by organizations to develop, implement and enhance innovations.</p> <p>Part “Business Ethics” Students are introduced to the concepts of business ethics and important concepts and theories of ethical decision making. The structure of this section includes the following:</p> <ul style="list-style-type: none"> • Introduction to business ethics • Theories of ethics and decision making • Ethical dilemmas and decisions in business • Ethics and organizational corruption.
Recommended reading	<p>Part “Firm, Organizational and Management Theories”</p> <ol style="list-style-type: none"> 1. Miles, J.A. (2012). Management and Organization Theory, Wiley. 2. Barney, J. 1991. Firm resources and sustained competitive advantage. Journal of Management, 17: 99–120. 3. Floyd, S. W. 2009. Borrowing theory: What does this mean and when does it make sense in management scholarship? Journal of Management Studies, 46: 1059 –1075. <p>Part “Innovation Management”</p> <ol style="list-style-type: none"> 4. Dyer, J., Gregersen, H., Christensen, C. "The Innovators DNA", Harvard Business Review, December 2009: 60-67. 5. Pisano, G. "You Need an Innovation Strategy", Harvard Business Review, June 2015: 60-67. 6. Wilson & Daugherty, "Humans and AI Are Joining Forces", HBR, July-Aug. 2018: 114-123. 7. Pisano, G. "The Hard Truth about Innovative Cultures", HBR, Jan-Feb 2019: 62-71. <p>Part “Business Ethics”</p> <ol style="list-style-type: none"> 8. Thanopoulos G. N. Business Ethics and Deontology, Athens: Interbooks, 2003. 9. Carroll, Archie, and Ann Buchholtz. Business and society: Ethics, sustainability, and stakeholder management. Nelson Education, 2014
Teaching methods	Lectures, Exercises, Case Studies, Group Projects.
Assessment methods	<p>Part “Firm, Organizational and Management Theories” 45% of the final grade based on final individual exam.</p>

	<p>Part “Innovation Management”</p> <p>45% of the final grade based on a team project as follows:</p> <ol style="list-style-type: none"> 1. <u>Pitch Presentations</u> in sessions 2, 4 and 5 (10+10+10=30% of the Part 2 grade). One or two members make a short presentation on specific topics worked on in class, 2. <u>Final Summary Presentation</u> of 12 slides and 15 minutes duration. All team members must present one part. (20% of the Part 2 grade, individual), 3. <u>Innovation Assessment & Development Report</u> according to template which will be distributed separately. (50% of the Part 2 grade). <p>Part “Business Ethics”</p> <p>10% of the final grade based on a group assignment. Students are asked, based on a case study, to identify, highlight and summarize key points and concepts that are taught in this section.</p>
Language of instruction	Greek and English

Advanced Topics in Management Science and Technology

Course title	Advanced Topics in Management Science and Technology
Course code	Full Time Program: m81104f Part Time Program: m81104p
Type of course	Core
Year of study	Full Time Program: 1 st Part Time Program: 2 nd
Semester/trimester	Full Time Program: 1 st Part Time Program: 4 th
Number of credits allocated	5 ECTS
Name of lecturer	Zachariadis Emmanouil, Assistant Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<ul style="list-style-type: none"> • Understand the relation between Combinatorial Optimization and Management Science • Differentiate between solution shape and solution objective • Understand three basic families of Combinatorial Optimization problems • Understand the insufficiency of using mathematical programming methods for dealing with large-scale combinatorial optimization problems • Use a modern programming language to develop algorithms for dealing with optimization problems • Describe and apply local search based optimization methodologies • Grasp the problems of classification and clustering, as well as to tackle them with the use of Python libraries
Prerequisites	No prerequisites.
Course contents	<ul style="list-style-type: none"> • Optimization Problems In Management Science • Sequencing Problems

	<ul style="list-style-type: none"> • Assignment Problems • Selection Problems • Greedy Algorithms • Python Basics • Development of Greedy Algorithms for Optimization Problems • Local Search • Classification and Clustering Problems
Recommended reading	<ul style="list-style-type: none"> • Course Notes • Handbook of Metaheuristics, Michel Gendreau & Jean-Yves Potvin, International Series in Operations Research & Management Science , 2019. • Introduction to Computation and Programming Using Python, John V. Guttag, With Application to Understanding Data, 2021
Teaching methods	Lectures Solving problem Examples Real-time code development for dealing with the problems presented
Assessment methods	70% Final Exam 30% Group Project (Optimization Methodology Development)
Language of instruction	Greek / English

ELECTIVE COURSES

Business Statistics

Course title	Business Statistics
Course code	Full Time Program: m81205f Part Time Program: m8105p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 1 st
Semester/trimester	Full Time Program: 1 st Part Time Program: 1 st
Number of credits allocated	2.5 ECTS
Name of lecturer	I. Vrontos, Associate Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<p>The aim of this course is to provide students with the learning of the use of appropriate statistical methods, models and techniques required for the analysis of data in empirical problems. Upon successful completion of the course, students will be able to:</p> <ul style="list-style-type: none"> • Know the basic distributions and their usefulness in practice. • Estimate the parameters of the distributions and of statistical models. • Conduct hypothesis testing and construct confidence intervals for population parameters. • Estimate regression models, construct predictions and interpret the results of statistical analysis appropriately. • Learn the principles of statistical inference so that they can understand the analysis needed for a particular data set, and how it can be properly applied.
Prerequisites	No prerequisites.
Course contents	<p>Data analysis using statistical methods and techniques is necessary in many empirical problems. The data and the variability they present, but also the uncertainty regarding the appropriate modeling approach make it necessary to make decisions based on statistical analysis and processing. The aim of this course is to present, develop and apply the basic theoretical and practical statistical methods and models. The methods introduced and developed are a reliable approach to the analysis of empirical problems because they study and 'capture' the characteristics of the data. The appropriate statistical tools for data analysis in empirical problems are presented and developed. The course presents the theory of basic continuous and discrete distributions and their usefulness as statistical modeling tools in empirical problems and applications. The sampling distributions that are used in statistical inference are developed and basic probabilistic results are presented. Then, basic estimation methods are introduced and developed, such as the least squares method and the maximum likelihood method. These methodologies are necessary in order to estimate the distribution parameters but also the parameters of statistical and econometric models. Statistical inference, and in particular, the theory and interpretation of confidence intervals and hypothesis testing are developed and presented. The concepts of covariance and</p>

	correlation are introduced in order to study the relationship of two or more random variables. Finally, simple and multiple regression models are presented and developed. Emphasis is given on the application of theory to empirical problems, on the interpretation of results, on the diagnostic tests of residuals and on the selection of appropriate models (model selection).
Recommended reading	<ul style="list-style-type: none"> • Newbold, P., Carlson, W. and Throne, B. (2012). Statistics for Business and Economics, 8th edition, Pearson. • Casella, G. and Berger R.L. (2001). Statistical Inference, 2nd edition, Duxbury Press. • Weisberg, S. (2005). Applied Linear Regression, 3rd edition, Wiley. • Barrow, M. (2006). Statistics for Economics, Accounting and Business Studies, 4th edition, Prentice Hall. • Stine, R. and Foster, D. (2014). Statistics for Business Decision Making and Analysis, Pearson.
Teaching methods	One three-hour lecture per week, study exercises, and programming exercises as homework (to be submitted).
Assessment methods	The final grade is the average of the final examination grade (weight 80%) and the grade of the study and programming exercises to be submitted (weight 20%), provided that the final examination grade is at least 5/10. Otherwise, the final grade equals the final examination grade.
Language of instruction	Greek/English

Software Systems

Course title	Software Systems
Course code	Full Time Program: m81206f Part Time Program: m81206p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 2 nd
Semester/trimester	Full Time Program: 2 nd Part Time Program: 4 th
Number of credits allocated	2.5 ECTS
Name of lecturer	George Lekakos, Associate Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	The course introduces students to the fundamental concepts of programming using the Java programming language. At the first part of the course, students are familiarized with the basics of programming (development of algorithms, Object-oriented design) applied through Java programming. At the second part of the course, the most significant aspects of the Java language are analyzed (classes, methods, variables, tables, control statements) in order to provide students the ability to develop their own Java programs. The expected learning outcome is to enable students to design object-oriented programs and develop programming skills using the Java language through exercises and personal assignments.
Prerequisites	No prerequisites.
Course contents	Fundamental elements of programming languages, Object-Oriented

	modeling, the Java programming language, variables, input and output, comparison operators, logic operators, conditional operators, programming with objects, classes and methods, arrays.
Recommended reading	<ul style="list-style-type: none"> • Course notes • Java: How to program, Deitel and Deitel, Pearson education, Inc., 2018
Teaching methods	Lectures using powerpoint presentations, practical application using IDE's, micro-project and final project programming assignments
Assessment methods	Students performance assessment is based on the grade of the final project assigned to the students (40%) and final written exam (60%).
Language of instruction	Greek / English

Quality Systems Management

Course title	Quality Systems Management
Course code	Full Time Program: m81207f Part Time Program: m81207p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 1 st
Semester/trimester	Full Time Program: 2 nd Part Time Program: 2 nd
Number of credits allocated	2.5 ECTS
Name of lecturer	Cleopatra Deliou, PhD
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<p>The objectives of the course are for students to:</p> <ul style="list-style-type: none"> • understand the necessity of applying quality programs, • become familiar with the requirements of quality standards and the criteria of different quality models, • implement improvement initiatives themselves, • identify ways of approaching quality by analyzing case studies and good practices for implementing Quality Tools and Systems, • apply Quality Tools and Methods on Personal Basis (Personal Quality)
Prerequisites	No prerequisites.
Course contents	<p>1st Section</p> <ul style="list-style-type: none"> • Introduction to Total Quality Management and Personal Quality • Basic concepts of quality and its evolution • Stakeholders Theory • Basic models and quality standards • Evaluation of personal quality characteristics <p>2nd and 3rd Section</p> <ul style="list-style-type: none"> • Presentation of the National Quality Awards and the EFQM Model of Business Excellence • Presentation of the Model criteria at the three levels of excellence and best practices • Presentation of certified companies and institutions at all three levels of excellence

	<ul style="list-style-type: none"> • The role of the quality assessor and the importance of having a quality department • Implementation of Quality Initiatives in the EFQM Excellence Model at different certification levels <p>4th Section</p> <ul style="list-style-type: none"> • Presentation of quality gurus • Basic theories and tools of Total Quality Management • The role of Human Resources Management in quality • The role of Leadership in creating a quality culture • Quality Tool Application: This Employee Self-Assessment <p>5th Section</p> <ul style="list-style-type: none"> • The ISO 9000: 2015 and ISO 22000: 2018 standards • Basic principles of standards and requirements • Comparative analysis of ISO with other standards / models • Differences between ISO 9001: 2008 and ISO 9001: 2015 • Important requirements for the implementation of ISO 9001: 2015 • Risk Management Analysis <p>6th Section</p> <ul style="list-style-type: none"> • The importance of Total Quality Management tools and the Cost of Quality • The basic tools in Quality Management • Application of tools and presentation through relevant examples • Application of tools on a personal level • Categories of Cost of Quality
<p>Recommended reading</p>	<ol style="list-style-type: none"> 1. Evans, J. R., & Dean, J. W. (2003). Total quality: Management, organization, and strategy. 2. Davies, A. J., & Kochhar, A. K. (2000). A framework for the selection of best practices. <i>International Journal of Operations & Production Management</i>, 20(10), 1203-1217. 3. EFQM Excellence Model: Higher Education Version 2003, Adapted from the EFQM Excellence Model 2003, Public and Voluntary Sector version, Sheffield Hallam University. 4. Jarrar, Y. F., & Zairi, M. (2000). Internal transfer of best practice for performance excellence: a global survey. <i>Benchmarking: An International Journal</i>, 7(4), 239-246. 5. Tricker, R. (2014). <i>ISO 9001: 2008 for Small Businesses</i>. Routledge. 6. Phillips, A. W. (2015). <i>ISO 9001: 2015 Internal Audits Made Easy: Tools, Techniques, and Step-by-Step Guidelines for Successful Internal Audits</i>. ASQ Quality Press. 7. Lazarte, M. (2015). ISO 9001: 2015—Just published. <i>International Organization for Standardisation (ISO)</i>. 8. Surak, J. G. (2007). A recipe for safe food: ISO 22000 and HACCP. <i>Quality Progress</i>, 40(10), 21. 9. ISO, E. (2008). 9001: 2008. 2008. <i>Quality management systems—requirements, CEN management centre: rue de Stassart</i>, 36. 10. Jackson, S. (2001). Successfully implementing total quality management tools within healthcare: what are the key actions?.

	<i>International Journal of Health Care Quality Assurance</i> , 14(4), 157-163. 11. Powell, T. C. (1995). Total quality management as competitive advantage: a review and empirical study. <i>Strategic management journal</i> , 16(1), 15-37.
Teaching methods	The lectures of the course are supported by in-class case studies, group and individual quality improvement actions, use of self-assessment tools, and the application of quality standards and models exercises to improve understanding of the conditions and prerequisites of quality compliance in a business environment.
Assessment methods	The assessment will be carried out through individual implementation of quality initiatives based on the EFQM Excellence Model (100%). Participants will prepare the improvement actions and relevant projects needed for the organizations they represent to receive a first level quality certification according to the EFQM model.
Language of instruction	Greek

Supply Chain Management

Course title	Supply Chain Management
Course code	Full Time Program: m81208f Part Time Program: m81208p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 2 nd
Semester/trimester	Full Time Program: 1 st Part Time Program: 3 rd
Number of credits allocated	2.5ECTS
Name of lecturer	Konstantinos Androutsopoulos, Assistant Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	The objective of this course unit is to introduce concepts and methods regarding Logistics Management. The course covers issues related to: Supply chain strategies and operations; Designing Global Supply Chains; planning and coordinating Logistics operations; International Logistics; Distribution and Transportation Systems Decision Making. The course will make it possible for participants to: <ul style="list-style-type: none"> • Acquire a clear understanding of Supply Chain characteristics, operations and performance. • Analyse and solve basic decision making problems in planning Supply Chain operations.
Prerequisites	No prerequisites.
Course contents	<i>Introduction to Supply Chain Management & Basic Operations</i> Definition of Supply Chain Management, Basic Logistics Operations, Facilities and their interrelationships, Logistics Strategy, Categories of Supply Chain Management Decisions, <i>Design of Supply Chains</i>

	<p>Methodological Framework for Designing Global Supply Chains, Factors affecting the design of Supply Chains, Mathematical Models for Determining a Supply Chain Network, Factors Affecting the Off-Shoring decision.</p> <p>Inventory Management: Aggregation in Supply Chains Defining Inventory and its importance in Supply Chain Management, Overview of Inventory Management Decisions, Inventory Aggregation Decisions.</p> <p>Transportation and Distribution Systems Defining Transportation Systems, Basic characteristics of Transportation Systems, Distribution Process in Supply Chains, Distribution Models, Selecting Transportation Services.</p> <p>Level Of Service. Defining the Level of Service, Assessing the Supply Chain performance, Order Processing, Methods for determining the Level of Service</p> <p>Warehousing & Warehouse Management Types of Warehouses, Warehouse Operations, Locating Warehouses, Determining the capacity of a Storage area, Determining the Dimensions of a storage Area.</p>
Recommended reading	<p>Lecture Notes</p> <p>Course Books:</p> <ul style="list-style-type: none"> • Sunil Chopra, Peter Meindl (2019), "<u>Supply Chain Management: Strategy, Planning and Operation</u>", 7th edition, Pearson Education, New Jersey. • D Simchi-Levi (2008), "Designing and Managing the Supply Chain", 3rd Edition, McGraw-Hill/Irwin Publishing. • Ronald H. Ballou (2004), "Business Logistics / Supply Chain Management", 5th Edition, Prentice Hall, New Jersey.
Teaching methods	Lectures. The course's content will be presented using a mixture of lectures, case-studies discussions and in-class presentations. The lectures are further supported by the presentation of numerous practical examples highlighting how theory is applied and used in real-life situations.
Assessment methods	Written exam.
Language of instruction	Greek / English

Production and Operations Management

Course title	Production and Operations Management
Course code	Full Time Program: m81209f Part Time Program: m81209p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 2 nd
Semester/trimester	Full Time Program: 1 st Part Time Program: 3 rd
Number of credits allocated	2.5ECTS

Name of lecturer	Apostolos Burnetas, Professor of UOA
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<p>After completing the course, the student will be able to:</p> <ul style="list-style-type: none"> Analyze multi-stage production processes, calculate capacity, and throughput time, and identify bottleneck stages. Calculate congestion and delays in service systems and assess the effect of alternative system designs. Understand and apply the basic principles of inventory management. Design economic ordering and production policies, and calculate safety stock under demand and lead-time uncertainty.
Prerequisites	No prerequisites.
Course contents	<p>Basic principles of analysis and design of business processes related to production of goods and services.</p> <ol style="list-style-type: none"> Introduction. The role of production and operations management in a supply chain. Process Analysis: Process types and process diagrams, cycle time and process capacity, bottlenecks, throughput time, Gantt charts. Service Systems: Types of service systems, queueing analysis, measures of congestion and delay, single stage service systems, comparison of design alternatives. Inventory Management: Types of inventories, inventory management systems, deterministic demand models, service levels, safety stocks.
Recommended reading	<ol style="list-style-type: none"> Krajewski, L. , Ritzman, L., Malhotra, M. "Operations Management: Processes and Supply Chainis", 12 ed., Pearson, 2012. Lecture Notes.
Teaching methods	Lectures, homework
Assessment methods	Project / Final Exam
Language of instruction	Greek / English

Data Management

Course title	Data Management
Course code	Full Time Program: m81210f Part Time Program: m81210p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 1 st
Semester/trimester	Full Time Program: 1 st Part Time Program: 1 st
Number of credits allocated	2.5ECTS
Name of lecturer	George Lekakos, Associate Professor Andreas Zaras
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<ul style="list-style-type: none"> Understand and learn concepts related to data driven decision making, necessary for working in the field of data science. Learn how to access, manage, and process data form real world data

	<p>sources with the objective to be transformed in a suitable format for business decision making purposes.</p> <ul style="list-style-type: none"> • Learn techniques for creating reports to help executives explore vast amounts of data, identify business problems, and propose relevant solutions. • Learn how to use the state-of-the-art software SAS Enterprise Guide, that will provide strong competitive advantage in the job market locally and globally since it is used by a plethora of organizations throughout the world. • Completion of the first step for obtaining the Certificate in Business Intelligence and Data Mining that is provided by the program in cooperation with SAS.
Prerequisites	No prerequisites.
Course contents	<ul style="list-style-type: none"> • Introduction to data driven decision making during which we will provide definitions about fundamental concepts in the field such as big data, decision support systems, data warehouses, ETL (Extract, Transform and Load) processes, business intelligence, business analytics, artificial intelligence etc. • Theoretical background about accessing, managing, processing, and reporting of data including an introduction to Structured Query Language (SQL). • Use of SAS Enterprise Guide, the state-of-the-art software for accessing, processing, managing, and reporting of data: <ul style="list-style-type: none"> ✓ Introduction to SAS Enterprise Guide. ✓ Data structures. ✓ Accessing data e.g., from spreadsheets, relational databases, raw data (csv, txt). ✓ Producing simple reports. ✓ Producing frequency tables. ✓ Output reports in various formats. ✓ Producing graphs. ✓ Gentle introduction to SQL for creating queries. ✓ Creating simple queries through the graphical user interface of SAS Enterprise Guide. ✓ Creating advanced queries through the graphical user interface of SAS Enterprise Guide. ✓ Joining tables.
Recommended reading	<ul style="list-style-type: none"> • Course notes provided by the instructors. • Anita Hillhouse et al (2020). SAS Enterprise Guide 1: Querying and Reporting (Course Notes), SAS Institute Inc. • Anita Hillhouse and Luna Bozeman (2020). SAS Enterprise Guide 2: Advanced Tasks and Querying (Course Notes), SAS Institute Inc. • Parr-Rud, O. (2014). Business Analytics Using SAS Enterprise Guide and SAS Enterprise Miner - A Beginner's Guide, SAS Institute Inc.
Teaching methods	<ul style="list-style-type: none"> • Power point presentations (covering the theoretical background related to data driven decision making and about accessing, managing, processing, and reporting of data).

	<ul style="list-style-type: none"> • Demonstrations about accessing, managing, processing, and reporting of data using SAS Enterprise Guide software. • Analysis and interpretation of the results drawn from the previous step for business decision making purposes. • Hands on exercises and case studies about accessing, managing, processing, and reporting of data and also about analysis and interpretation of the relevant results for business decision making purposes.
Assessment methods	<ul style="list-style-type: none"> • Class participation (10%). • Final individual exam (90%) about a) data driven decision making (30%) και b) access, manage, process and report of data through the use of SAS Enterprise Guide (70%).
Language of instruction	Greek/ English

Inventory Theory

Course title	Inventory Theory
Course code	Full Time Program: m81211f Part Time Program: m81211p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 1 st
Semester/trimester	Full Time Program: 1 st Part Time Program: 1 st
Number of credits allocated	2.5ECTS
Name of lecturer	Apostolos Burnetas, Professor of UOA
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<p>After completing the course, the student will be able to:</p> <ul style="list-style-type: none"> • Apply time-series models for demand forecasting. • Calculate economic policies for systems with finite production rate and planned shortages. • Calculate optimal supplier selection and optimal policies under quantity discounts. • Design material requirements planning policies. • Calculate economic production and ordering policies for products with time varying demand. • Calculate optimal stocking policies for perishable products with stochastic demand.
Prerequisites	No prerequisites.
Course contents	<p>The course offers students the motivation and tools to identify, model and solve problems of demand forecasting and inventory management, and apply the models and solutions to manufacturing and retail firms.</p> <ol style="list-style-type: none"> 1. Time series forecasting models: Moving average and exponential smoothing, models with constant demand, trend and seasonalities. 2. Constant demand models: finite production rate, planned shortages, quantity discounts.

	<p>3. Time-varying demand models: the Wagner-Whitin algorithm.</p> <p>4. Inventory management for single period perishable products and stochastic demand: newsvendor model.</p>
Recommended reading	<p>1. Axsater, S. "Inventory Control", Springer, 2015.</p> <p>2. Lecture Notes.</p>
Teaching methods	Lectures, homework
Assessment methods	Project / Final Exam
Language of instruction	Greek / English

Analysis and Planning of Transportation and Distribution Systems

Course title	Analysis and Planning of Transportation and Distribution Systems
Course code	Full Time Program: m81212f Part Time Program: m81212p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 1 st
Semester/trimester	Full Time Program: 2 nd Part Time Program: 2 nd
Number of credits allocated	2.5ECTS
Name of lecturer	Konstantinos Androutopoulos, Assistant Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<p>The objective of this course is the analysis and planning of the distribution networks in Logistics Management. After successfully completing the course, the students will be able to:</p> <ul style="list-style-type: none"> ▪ Understand the operation of the Distribution networks in Supply Chains ▪ Understand the configuration of distribution networks and the major issues arising in setting up a distribution network ▪ Develop and solve mathematical models for distribution network planning
Prerequisites	No prerequisites.
Course contents	<p>Transportation Systems. Introduction to transportation systems. Features and categories of transportation services.</p> <p>Introduction to Distribution networks. Mathematical modelling issues in distribution and transportation systems. Distribution problem from a single origin to multiple destinations: definition, characteristics, constraints, mathematical model, solution method.</p> <p>Distribution Network Models (I) : Distribution problem from multiple origins to multiple destinations: definition, characteristics, constraints, mathematical model, solution method. The transportation problem. Transshipment Problem: definition, characteristics, constraints, mathematical model, solution method.</p> <p>Distribution Network Models (II): Vehicle Routing problem with Time windows, definition, characteristics, constraints, mathematical model, solution methods. Case: Fuel Distribution Μελέτη Περίπτωσης.</p> <p>Distribution Network Models (III): Combined Inventory and Routing</p>

	problems. Distribution Centers. Location problems: definition, characteristics, constraints, mathematical models, solution methods. Emergency Response fleet management. Case Study.
Recommended reading	<ul style="list-style-type: none"> ▪ Lecture notes ▪ Books: <ul style="list-style-type: none"> ○ Gianpaolo Ghiani, Gilbert Laporte, and Roberto Musmanno, “Introduction to Logistics Systems Planning and Control”, John Wiley & Sons, Inc., 2004. ○ Joseph Sussman, “Introduction to Transportation Systems”, Artech House Its Library, 2000(ISBN13: Artech House Its Library).
Teaching methods	Lectures. The course's content will be presented using a mixture of lectures, case-studies discussions and in-class presentations. The lectures are further supported by the presentation of numerous practical examples highlighting how theory is applied and used in real-life situations.
Assessment methods	Written exam.
Language of instruction	Greek / English

Platforms, Networks and Innovation

Course title	Platforms, Networks and Innovation
Course code	Full Time Program: m81213f Part Time Program: m81213p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 1 st
Semester/trimester	Full Time Program: 2 nd Part Time Program: 2 nd
Number of credits allocated	2.5 ECTS
Name of lecturer	A. Poulymenakou, Associate Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<ul style="list-style-type: none"> • Understanding key features of digital platforms: architecture, strategies, impact dynamics, the role of services supported by digital platforms, startups based on & supported by digital platforms • Investigate the formulation of strategies and directions of business and administrative management for the opening / closing of mature (technological and operational) digital platforms, regulatory frameworks and governance, dissemination and sharing in relation with issues of data protection and security • Familiarity with issues of management, design and implementation of digital platforms
Prerequisites	No prerequisites.

Course contents/Syllabus	<ol style="list-style-type: none"> 1. From IT infrastructure to digital platforms 2. Overview of Digital Platforms I: Architecture 3. Digital Platforms Overview II: the role of services in the market of digital platforms, startups based on digital platforms as catalysts 4. Digital Platforms Governance I: open platforms and its governing rules 5. Digital Platform Governance II: protecting and disseminating / sharing a technology platform, open platform development and the commercial network/internet 6. Management of Digital Platforms, design and knowledge issues in development and / or upgrade and / or improvement projects, e.g. <ul style="list-style-type: none"> ○ outsourcing, ○ collaborations, ○ design rules, and ○ problem solving
Recommended reading	<ul style="list-style-type: none"> ○ P. Weill and J. Ross (2004) Information Technology Governance, Harvard Business School Press ○ J. Ross, P. Weill and D.C. Robertson, (2006) Enterprise Architecture Strategy, Harvard Business School Press ○ McAfee (2009) Enterprise 2.0, Harvard Business School Press ○ Selected academic papers, business publications, and case studies distributed during lectures
Teaching methods	Lectures, case studies, hands-on in SAP platform (labs)
Assessment methods	The evaluation of the course is based exclusively (100%) on individual student assignment (bibliographic review or case study)
Language of instruction	Greek / English

Platforms and Applications in Business Analytics

Course title	Platforms and Applications in Business Analytics
Course code	Full Time Program: m81214f Part Time Program: m81214p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 1 st
Semester/trimester	Full Time Program: 1 st Part Time Program: 1 st
Number of credits allocated	2.5 ECTS
Name of lecturer	Andreas Zaras Panagiotis Sarantopoulos, Assistant Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<ul style="list-style-type: none"> • Learn and understand concepts related to traditional statistical analysis so as students to be able to collect the proper data, organize and summarize them and draw conclusions about populations through analyzing samples of data. • Learn and understand concepts related to Business Intelligence so students to are able to use relevant software for exploring data, spot anomalies, recognize patterns, trends and associations and finally visualizing data to achieve information dissemination throughout the

	<p>organization.</p> <ul style="list-style-type: none"> • Learn and understand concepts related to Machine Learning so as students are able to formulate and solve data mining related problems with applications in market basket analysis, customer segmentation, campaign management and optimization etc. • Learn how to use the following software: SAS Enterprise Guide, SAS Enterprise Miner, SAS Visual Analytics • Become acquainted with the R programming language for statistical computing and graphics
Prerequisites	No prerequisites.
Course contents	<ul style="list-style-type: none"> • Lectures 1-4: Traditional statistical analysis (Descriptive statistics, inferential statistics, linear correlation, simple and multiple linear regression, categorical data analysis, Decision Support System: SAS Enterprise Guide) • Lecture 5: Data Visualization for Business Intelligence (Decision Support System: SAS Visual Analytics on SAS Viya) • Lectures 6-10: Data Mining/ Machine Learning Techniques (Market basket Analysis, Customer Segmentation through Clustering, Campaign Management through Predictive Analytics, Decision Trees, Model Assessment, Scoring New Data, Decision Support System: SAS Enterprise Miner) • Lectures 11-13: Getting started in R, Basic data structures in R (Vectors and data frames), Loading external data files in R, Basic data analysis (descriptive stats and basic graphs), Saving with script files, Basic and advanced scatterplots, Basic line plots, Heatmaps, Hotspot street maps, Linear regression in R, Understanding the model, Making predictions
Recommended reading	<ul style="list-style-type: none"> • Course notes provided by the instructor. • Stacey Syphus et al, 2015. <i>SAS Enterprise Guide 1: Querying and Reporting Course Notes</i>. Cary: SAS Institute Inc. • Marc Huber, 2012. <i>SAS Enterprise Guide: ANOVA, Regression and Logistic Regression</i>. Cary: SAS Institute Inc. • Peter Christie et al, 2011. <i>Applied Analytics Using SAS Enterprise Miner Course Notes</i>. Cary: SAS Institute Inc. • Kattamuri S. Sarma, 2017. <i>Predictive Modeling with SAS Enterprise Miner: Practical Solutions for Business Applications</i>, SAS Publishing. • Olivia Parr – Rud 2014. <i>Business Analytics Using SAS Enterprise Guide and SAS Enterprise Miner: A Beginner's Guide</i>. SAS Publishing. • Bicole Ball, 2019. <i>SAS Visual Analytics 1 for SAS Viya: Basics</i>. Cary: SAS Institute Inc. • Chapman, C. & Feit, E.M., 2015. <i>R for Marketing Research and Analytics</i>, Springer. • James, G. et al., 2013. <i>An Introduction to Statistical Learning with Applications in R</i>, Springer.
Teaching methods	<ul style="list-style-type: none"> • Power point presentations. • Demonstrations of producing business analytics results using relevant

	<p>software.</p> <ul style="list-style-type: none"> • Analysis and interpretation of the software output for business decision making. • Hands on case studies related to the production and analysis-interpretation of business analytics output for business decision making.
Assessment methods	<ul style="list-style-type: none"> • Class participation: 5% • Final individual exam about traditional statistics: 40% • Final group project about data mining/ machine learning: 55%
Language of instruction	Greek/ English

Business Process Management

Course title	Business Process Management
Course code	Full Time Program: m81215f Part Time Program: m81215p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 1 st
Semester/trimester	Full Time Program: 2 nd Part Time Program: 2 nd
Number of credits allocated	2.5 ECTS
Name of lecturer	A.Poulymenakou, Associate Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<p>The main objective of the course is to introduce basic concepts and techniques related to the business analysis of work systems involved in and supported by IT systems (and technologies). Students will understand how different types of business processes and technologies, within a specific human, work and organizational context, can be studied and analyzed to locate/track and identify opportunities for improvement and innovation in order to implement and apply them.</p> <p>The course emphasizes on techniques for analyzing structures and performance, infrastructure and risks in organizational and social contexts and environments that are enhanced by the technology embedded in them.</p>
Prerequisites	No prerequisites.
Course contents/Syllabus	<ul style="list-style-type: none"> ○ Work Systems, Business Processes, architecture and information systems infrastructure ○ Strategy and vision of Business Process Performance ○ Business Process Strategy - Performance perspective ○ Business Processes and IT Architectures - Performance Management perspective ○ Corporate Governance of Information Infrastructure ○ Laboratories (ARIS toolset / platform, SAP ERP core business process)
Recommended reading	<ul style="list-style-type: none"> ○ P. Weill and J. Ross (2004) Information Technology Governance,

	<p>Harvard Business School Press</p> <ul style="list-style-type: none"> ○ J. Ross, P. Weill and D.C. Robertson, (2006) Enterprise Architecture Strategy, Harvard Business School Press ○ McAfee (2009) Enterprise 2.0, Harvard Business School Press ○ Selected academic articles, business publications, and case studies distributed during lectures
Teaching methods	Lectures, case studies, hands-on in SAP ERP and ARIS toolset (labs)
Assessment methods	<p>The evaluation of the course is based on the following criteria:</p> <ul style="list-style-type: none"> - Class participation (10%) - Individual assignment consisting of two parts: <ul style="list-style-type: none"> ○ Part A: Real Work System Study (70%) ○ Part B: Analysis and Modeling of Core Business Process using the ARIS toolset (20%)
Language of instruction	Greek / English

Customer-centric Information Systems

Course title	Customer-centric Information Systems
Course code	Full Time Program: m81116f Part Time Program: m81116p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 1 st
Semester/trimester	Full Time Program: 2 nd Part Time Program: 2 nd
Number of credits allocated	2.5ECTS
Name of lecturer	George Lekakos, Associate Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<p>The aim of the course is to introduce students in business analytics techniques that are typically utilized in organizations in order to provide an understanding of the needs and preferences of their customers and the prediction of their future behavior.</p> <p>At the end of the course students will be able to:</p> <ul style="list-style-type: none"> ● Apply data analytics techniques towards the understanding of consumer's behavior ● Develop predictive models regarding customers future behavior ● Use efficiently practical data analytics platforms ● Understand and interpret the analysis results providing useful business insights
Prerequisites	No prerequisites.
Course contents	<ul style="list-style-type: none"> ● Introduction to business analytics ● Exploratory Vs Explanatory analysis methods ● Distance metrics ● Clustering, classification, association rules algorithms ● Prediction of behavior and recommender systems ● Evaluation of predictive performance and bias control

Recommended reading	<ul style="list-style-type: none"> • G. Lekakos, «Συστήματα Εξατομίκευσης», Course Notes • Jannach, D. Zanker, M., Felfernig, A., “Recommender Systems: An Introduction”, Cambridge University Press, 2011 • Ricci, F., Lior Rokach, L., Shapira, B., Kanto, P., “Recommender Systems Handbook”, Springer, 2010 • Aninash Kaushik, Web Analytics 2.0, Wiley Publishing, 2010
Teaching methods	Lectures using powerpoint presentations, case study analysis, practical application using analytics tools (rapidminer), micro-project and final project assignments presented by the students.
Assessment methods	Students performance assessment is based on the grade of the final project assigned to the students. The project requires both analysis and interpretation of findings and is presented and orally examined.
Language of instruction	Greek / English

Innovation and Entrepreneurship

Course title	Innovation and Entrepreneurship
Course code	Full Time Program: m81217f Part Time Program: m81217p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 2 nd
Semester/trimester	Full Time Program: 1 st Part Time Program: 3 rd
Number of credits allocated	2.5ECTS
Name of lecturer	Irini Voudouris, Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	This is a course about innovation, entrepreneurship and the challenges faced by entrepreneurs. We will attempt to discuss a variety of contemporary issues by using a mixture of lectures, case studies, guest speakers and brainstorming sessions. Emphasis will be placed on the development and evaluation of a business plan for a start-up. The challenge to participants is to discover their own innovative and entrepreneurial potential and find ways to capitalize on that potential.
Prerequisites	No prerequisites
Course contents	<p>Session 1: Understanding the basics of entrepreneurship.</p> <p>Session 2: Creating and Developing opportunities – Building Business Models.</p> <p>Session 3: IdeaStorm - Understanding the basics of social entrepreneurship.</p> <p>Session 4: Business Planning.</p> <p>Session 5: Financing for start-ups - Entrepreneurship in action.</p> <p>Session 6: Business model presentation, market validation and assessment.</p>
Recommended reading	<ul style="list-style-type: none"> • Neck H., Neck C. and Murray E. (2020) The Practice and Mindset (2nd Edition) Thousand Oaks: SAGE Publishing. ISBN: 9781544354620. • Kuratko, Donald F. (2014), Entrepreneurship: Theory, Process, Practice

	<p>(9th Edition), Cengage/Southwestern Publishers. Hardcover: 624 pages, ISBN-13: 978-1285051758, ISBN-10: 1285051750.</p> <ul style="list-style-type: none"> • Alexander Osterwalder, A. & Pigneur, Y., (2010), Business Model Generation, John Wiley & Sons. Paperback: 288 pages, ISBN-10: 0470876417, ISBN-13: 978-0470876411. • Recommended list of scientific articles.
Teaching methods	The course involves a mixture of lectures, case studies, guest speakers and brainstorming sessions.
Assessment methods	<p>The evaluation is based on two components:</p> <ol style="list-style-type: none"> 1. A team working project, which assesses the ability of students to identify and implement business opportunities. The students work in groups of three to four. Deliverables include: i) two "business ideas" pitching per team, ii) a "business model" presentation, and iii) a complete "business plan". 2. Final written exams. The exam questions will require students to have a comprehensive understanding of the concepts, issues and frameworks developed during the course sessions.
Language of instruction	Greek / English

Business Intelligence

Course title	Business Intelligence
Course code	Full Time Program: m81218f Part Time Program: m81218p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 1 st
Semester/trimester	Full Time Program: 2 nd Part Time Program: 2 nd
Number of credits allocated	2.5ECTS
Name of lecturer	Damianos Chatziantoniou, Associate Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<ul style="list-style-type: none"> • Develop an application in relational systems: design relational schemas, write SQL, use APIs to connect to a relational database within a programming language. • Develop data warehousing applications: defining business goals, identifying data sources, using tools/methods to extract and transform data, designing star schemas and cubes and perform multi-dimensional analysis. Understand data mining concepts. • Understand and apply the additional technologies to bring business intelligence to the big data era.
Prerequisites	No prerequisites.
Course contents	<ul style="list-style-type: none"> • Introduction to Data Management • Fundamentals of Data Management and Relational Systems, SQL • Business Intelligence: Fundamentals, Architecture and Performance • Non-relational Data Management & Big Data Era
Recommended reading	<ul style="list-style-type: none"> • Multidimensional Databases & Data Warehousing, by Christian S. Jensen, Torben Bach Pedersen, and Christian Thomsen.

	<ul style="list-style-type: none"> • Database Systems: The Complete Book, by Hector Garcia-Molina, Jeff Ullman, Jeniffer Widom. • Ερευνητικά άρθρα
Teaching methods	Face-to-face lectures
Assessment methods	Two large projects and written exams
Language of instruction	Greek/English

Developing Competencies for Management and Innovation

Course title	Developing Competencies for Management and Innovation
Course code	Full Time Program: m81219f Part Time Program: m81219p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 2 nd
Semester/trimester	Full Time Program: 2 nd Part Time Program: 4 th
Number of credits allocated	2.5ECTS
Name of lecturer	Dr Ioanna Kinti
Objective of the course (preferably expressed in terms of learning outcomes and competences)	Students will be enabled to exercise, develop and master the fundamental soft skills in professional performance at Work, in Teams, and in Innovation Contexts.
Prerequisites	No prerequisites.
Course contents	Leadership Skills, Team Work Skills, Lifelong Learning Skills, Conflict Resolution and Negotiation Skills, Creative Collaboration in Entrepreneurship and Innovation Teams
Recommended reading	Armstrong's Handbook of Human Resource Management Practice (2020) – Part III People Management Skills
Teaching methods	Lectures, Self-Assessment Exercises, Case Studies, Role Playing
Assessment methods	Class Participation & Final Exam
Language of instruction	Greek/English

Business Intelligence

Course title	Business Intelligence
Course code	Full Time Program: m81218f Part Time Program: m81218p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 1 st
Semester/trimester	Full Time Program: 2 nd Part Time Program: 2 nd
Number of credits allocated	2.5ECTS
Name of lecturer	Damianos Chatziantoniou, Associate Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<ul style="list-style-type: none"> • Develop an application in relational systems: design relational schemas, write SQL, use APIs to connect to a relational database within a programming language. • Develop data warehousing applications: defining business goals,

	<p>identifying data sources, using tools/methods to extract and transform data, designing star schemas and cubes and perform multi-dimensional analysis. Understand data mining concepts.</p> <ul style="list-style-type: none"> • Understand and apply the additional technologies to bring business intelligence to the big data era.
Prerequisites	No prerequisites.
Course contents	<ul style="list-style-type: none"> • Introduction to Data Management • Fundamentals of Data Management and Relational Systems, SQL • Business Intelligence: Fundamentals, Architecture and Performance • Non-relational Data Management & Big Data Era
Recommended reading	<ul style="list-style-type: none"> • Multidimensional Databases & Data Warehousing, by Christian S. Jensen, Torben Bach Pedersen, and Christian Thomsen. • Database Systems: The Complete Book, by Hector Garcia-Molina, Jeff Ullman, Jeniffer Widom. • Ερευνητικά άρθρα
Teaching methods	Face-to-face lectures
Assessment methods	Two large projects and written exams
Language of instruction	Greek/English

Digital Marketing

Course title	Digital Marketing
Course code	Full Time Program: m81220f Part Time Program: m81220p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 2 nd
Semester/trimester	Full Time Program: 1 st Part Time Program: 3 rd
Number of credits allocated	2.5 ECTS
Name of lecturer	Adam Vrechopoulos, Associate Professor Chris Lazaris, Member of the Laboratory Teaching Faculty (Tutorials/Labs)
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<ul style="list-style-type: none"> • Acquisition of integrated theoretical knowledge through an interdisciplinary approach • Understanding of practical applications (i.e. connection of theory with practice) • Training on modern tools and practices • Familiarization with scientific research • Recognition, evaluation and development of strategies • Synthesis of concepts in the context of a Marketing Plan
Prerequisites	No prerequisites.
Course contents	The course aims to cover all the important issues positioned in the scientific sector of Digital Marketing, combining the relevant theoretical background with the new technologies and the evolving business and consumer practices. Indicatively, the course includes the following subjects: Electronic Retailing and Consumer Behaviour (e.g. Multichannel/Omnichannel Retailing and Consumer Buying Behaviour, Design and Effects of Retail Store Atmosphere), Electronic Marketing

	Research (e.g. Marketing Analytics, Experimental Design), Electronic Customer Relationship Management (eCRM), Integrated Marketing Communications (e.g. Electronic Advertising, Social Media, Electronic Sales), Strategic Digital Marketing Planning (Electronic Marketing Plan, Marketing Mix Strategies), Special Topics in Digital Marketing.
Recommended reading	The course does not require and specific textbook. Analytical information about relevant literature (e.g. scientific papers, books, case studies, research results, etc.) and the way of access to these sources are given in the syllabus of the course and in the context of the course lectures.
Teaching methods	The course is conducted through lectures and tutorials/labs. Also, students participate in a team assignment which they also present in the class (i.e. 2 deliverables).
Assessment methods	Written Exams (70%) and Assignment (30%)
Language of instruction	Greek / English

Digital Services' Design

Course title	Digital Services' Design
Course code	Full Time Program: m81221f Part Time Program: m81221p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 2 nd
Semester/trimester	Full Time Program: 2 nd Part Time Program: 4 th
Number of credits allocated	2.5 ECTS
Name of lecturer	George Lekakos, Associate Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<p>The aim of the course is to introduce students to the concept of User Experience (UX) and the parameters that should be taken into account when designing modern services. It also aims at understanding design thinking while emphasizing the identification of emotions that lead to an improved user experience as well as its evaluation in order to achieve the user's engagement with the service.</p> <p>At the end of the course students will be able to:</p> <ul style="list-style-type: none"> • Understand how human-computer interaction works as well as the way the human brain perceives the stimuli it receives • To apply the principles of design thinking in practice • Understand the meaning of the user experience and its dimensions • Evaluate quantitatively and qualitatively prototypes and services • Apply techniques to improve the user experience at the interface level
Prerequisites	No prerequisites.
Course contents	<ul style="list-style-type: none"> • Basic concepts - human as an information processor • Rules and principles for designing easy-to-use services • The role of emotions in creating an improved user experience • Heuristic, cognitive walk, experimental evaluation • Persuasiveness and influence strategies to optimize user effectiveness

	<p>and loyalty</p> <ul style="list-style-type: none"> • Case studies
Recommended reading	<ul style="list-style-type: none"> • Dix, A., Finlay, J., Abowd, G., Beale., R.. Επικοινωνία Ανθρώπου - Υπολογιστή. Μ. Γκιούρδας • K. Chorianopoulos, Ο Προγραμματισμός της Διάδρασης, www.pibook.gr • Jennifer Preece, Yvonne Rogers, Helen Sharp, Interaction Design: Beyond Human-Computer Interaction, John Wiley & Sons, 2002 • Eisenberg, B., vonTivadar, J.Q, Crosby, B., Davis. L. T., a/b Always Be Testing: The Complete Guide to Google Website Optimizer, Wiley Publishing, Inc., 2008. • B.J. Fogg, Persuasive technologies, Morgan Kaufmann, 2003 • R. Gialdini, Influence: science and practice, Pearson International, 2009
Teaching methods	Lectures using powerpoint presentations, case study analysis, practical application using prototyping and UX evaluation tools, final project assignments presented by the students.
Assessment methods	Students performance assessment is based on the grade of the final project assigned to the students. The final grade of the course will result from the grade of the assignment (30%) and the exam (70%)
Language of instruction	Greek / English

Combinatorial Optimization

Course title	Combinatorial Optimization
Course code	Full Time Program: m81222f Part Time Program: m81222p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 2 nd
Semester/trimester	Full Time Program: 2 nd Part Time Program: 4 th
Number of credits allocated	2.5ECTS
Name of lecturer	George Zois, Post-doctoral Researcher Yiannis Mourtos, Associate Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	The aim of this course is to make students acquainted with the basic concepts and tools of Combinatorial Optimisation, the modeling of real cases through such tools and the knowledge of standard algorithmic methods and existing software. The aim is the possibility of applying such tools and methods in different fields where optimal decisions are sought using known techniques and algorithms. At the same time the course favors the development of analytical thinking both in terms of modeling and in terms of problem solving.
Prerequisites	No prerequisites.
Course contents	Combinatorial Optimization proposes models and solution methods for decision making in problems of combinatorial nature, i.e., problems in which some 'decision variables' are discrete or integer. Such problems

	<p>occur in many application areas of Management Science such as production, transport, market design or cooperative practices, network design or investment.</p> <p>This course offers an introduction to seminal concepts and tools of Combinatorial Optimization (matchings, flows, paths) and places particular emphasis on modeling modern cases from multiple application fields through these tools.</p>
Recommended reading	<ul style="list-style-type: none"> • Combinatorial Optimization: Theory and Algorithms, B. Korte, J. Vygen, 2012. • Διακριτή Βελτιστοποίηση, Π. Μηλιώτης, Ι. Μούρτος, Εκδόσεις Οικονομικού Πανεπιστημίου Αθηνών, 2009. • Surveys in combinatorial optimization, Silvano Martello, North-Holland, Amsterdam, 1987. • The traveling salesman problem: a guided tour of combinatorial optimization, E. L. Lawler, Jan Karel Lenstra, A. H. G. Rinnooy Kan, D. B. Shmoys, Wiley 1985.
Teaching methods	The course is taught in six lectures, during which small individual tasks are given, while an optional group work is proposed for algorithm development in a specific programming language.
Assessment methods	Final Exams, Individual assignment, Optional group assignment
Language of instruction	Greek/English

Digital Marketing in Tourism

Course title	Digital Marketing in Tourism
Course code	Full Time Program: m81223f Part Time Program: m81223p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 1 st
Semester/trimester	Full Time Program: 2 nd Part Time Program: 2 nd
Number of credits allocated	2.5ECTS
Name of lecturer	Dr. Katerina Fraidaki
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<p>Attendees, at the end of the course will be able to:</p> <ul style="list-style-type: none"> - Design the digital marketing strategy based on the needs of the market - Study the market using digital tools - Design, apply and evaluate digital campaign made with: google ads, facebook ads - Apply SEO strategy
Prerequisites	No prerequisites.
Course contents	In every lecture, a digital tool for the design, application and evaluation of digital marketing strategy will be presented
Recommended reading	Slides that will follow the lectures
Teaching methods	Slides, live tools presentation, use of collaborative tools for group exercises, videos

Assessment methods	Assignment
Language of instruction	Greek / English

Transportation Systems Management

Course title	Transportation Systems Management
Course code	Full Time Program: m81224f Part Time Program: m81224p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 1 st
Semester/trimester	Full Time Program: 2 nd Part Time Program: 2 nd
Number of credits allocated	2.5ECTS
Name of lecturer	Konstantinos Androutopoulos, Assistant Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<p>The objective of this course is to introduce students to transportation systems planning. The course consists of two parts. The first part is focused on presenting the operational features of transportation systems, and the interaction of transport with the economy and the environment. The second part includes the analysis and modeling of basic decision making problems arising in managing transportation systems. After successfully completing the course, the students will be able to:</p> <ul style="list-style-type: none"> ▪ Understand the operations of a transportation system and its interrelationships with the economic and social environment ▪ Understand the operational features of the transportation modes and the major decisions arising in transportation management ▪ Develop mathematical models for addressing transportation systems planning problems.
Prerequisites	No prerequisites.
Course contents	<p>Introduction: Transportation Systems features. Interrelations with the economy and the environment. The role of energy and safety. Transport demand and supply.</p> <p>Transportation Modes. Road Transport, Rail Transport, Sea Transport, Air Transport.</p> <p>Road Transport Planning Problems. Service Network Design. Vehicle Allocation Problem (Full-truckload). Container Routing Problem.</p> <p>Maritime Transport Logistics (I): Liner Shipping Planning Problems. Industrial and Tramp Shipping planning problems.</p> <p>Maritime Transport Logistics (II): Oil and chemical products Maritime transportation. Port logistics.</p> <p>Air Transport Planning: Strategic Slot Allocation Problem. Gate Assignment</p>
Recommended reading	<ul style="list-style-type: none"> ▪ Lecture notes ▪ Books: <ul style="list-style-type: none"> ○ Joseph Sussman, "Introduction to Transportation Systems", Artech House Its Library, 2000(ISBN13: Artech House Its Library).

	<ul style="list-style-type: none"> ○ Gianpaolo Ghiani, Gilbert Laporte, and Roberto Musmanno, “Introduction to Logistics Systems Planning and Control”, John Wiley & Sons, Inc., 2004. ○ M. Christiansen, K. Fagerholt, B. Nygreen, D. Ronen (2004) Maritime Transportation, in Handbook in OR & MS, Vol. 14, (Eds.) C. Barnhart and G. Laporte, Elsevier B.V (DOI: 10.1016/S0927-0507(06)14004-9) ○ M. Christiansen, K. Fagerholt, B. Nygreen, D. Ronen (2013) Ship routing and scheduling in the new millennium, European Journal of Operational Research 228 (2013) 467–483 ○ M. Christiansen, K. Fagerholt, D. Ronen (2004) Ship Routing and Scheduling: Status and Perspectives. Transportation Science, Vol. 38, No. 1, pp. 1–18
Teaching methods	Lectures. The course's content is presented using a mixture of lectures, case-studies discussions and in-class presentations. The lectures are further supported by the presentation of numerous practical examples highlighting how theory is applied and used in real-life situations.
Assessment methods	Written exam.
Language of instruction	Greek / English

Electronic Commerce

Course title	Electronic Commerce
Course code	Full Time Program: m81225f Part Time Program: m81225p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 2 nd
Semester/trimester	Full Time Program: 2 nd Part Time Program: 3 rd
Number of credits allocated	2.5ECTS
Name of lecturer	Konstantinos Fouskas, Assistant Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<p>The aim of the course is to understand and familiarize students with the integration of e-commerce and e-business in the strategy of existing companies, as well as the development of companies based on Information and Communication technologies.</p> <p>An additional goal is to familiarize students with how to develop and operate business applications of Electronic / Mobile Commerce and Electronic / Mobile Business, by presenting and analyzing best practices and case studies in various business disciplines.</p>
Prerequisites	No prerequisites.
Course contents	<p>The lectures of the course will focus on:</p> <ul style="list-style-type: none"> ● E-business - concepts and categories, technologies and examples ● E-business models ● Finding a digital business idea ● Creating a Business Model

	<ul style="list-style-type: none"> • Business Model Design • Developing a digital business idea and attracting customers • Promotion of digital business idea • Presentation of digital business idea and Financing
Recommended reading	<ul style="list-style-type: none"> • Το Ψηφιακό Μέλλον, Γεώργιος Δουκίδης (επιμέλεια), Εκδόσεις Σιδέρης, 2019 • Ηλεκτρονικό Εμπόριο 2018, 14η Έκδοση, Laudon Kenneth, Traver Carol Guercio, Εκδόσεις Παπασωτηρίου, 2018 • Ψηφιακό Μάρκετινγκ: Από τη θεωρία στην πράξη, Βλαχοπούλου Μάρω, Εκδόσεις Rosili, 2020 • Driving Digital Strategy: A Guide to Reimagining Your Business, Sunil Gupta, Harvard Business Review Press, 2018 • The Startup Owner's Manual: The Step-By-Step Guide for Building a Great Company, Steve Blank, Bob Dorf, Wiley, 2020 • Why Digital Transformations Fail: The Surprising Disciplines of How to Take Off and Stay Ahead, Tony Saldanha, Berrett-Koehler Publishers, 2019
Teaching methods	Lectures
Assessment methods	Work and work presentations: 100%
Language of instruction	Greek/English

Business Strategy

Course title	Business Strategy
Course code	Full Time Program: m81226f Part Time Program: m81226p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 2 nd
Semester/trimester	Full Time Program: 2 nd Part Time Program: 4 th
Number of credits allocated	2.5ECTS
Name of lecturer	Yiannis Spanos, Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<ul style="list-style-type: none"> • To acquire familiarity with the principal concepts, frameworks and techniques of strategic management. • To gain expertise in applying these concepts, frameworks and techniques • To develop the capacity for strategic thinking and associated managerial skills
Prerequisites	None No prerequisites
Course contents	<p>Session 1. Introduction Introduction to the course. The role and nature of strategy. A framework for strategy analysis. Strategy making in practice.</p> <p>Session 2. Analysis of industry and competition How industry structure determines competition, and the level of industry</p>

	<p>profitability. Porter's Five Forces of Competition framework. Intra-industry, competitor, and segmentation analysis.</p> <p>Session 3. Analysis of Resources and Capabilities Resource-based strategies. Identifying and appraising resources and capabilities. The determinants of sustainable competitive advantage. The role of knowledge, and the knowledge based view of the firm.</p> <p>Session 4. Organization Structure and Management Systems for Strategy Implementation Principles of organizational design, alternative structural forms, and management systems for coordination and control.</p> <p>Session 5. Nature and Sources of Competitive Advantage Porter's "generic strategies." The sources of cost and differentiation advantage. Using the value chain to analyze cost and differentiation advantage.</p> <p>Session 6. Corporate Strategies Vertical integration strategies and the scope of the firm. Diversification strategies.</p> <p>In each session, we also study and discuss relevant case studies.</p>
Recommended reading	Robert M. Grant, Contemporary Strategy Analysis (9th ed, Wiley, 2010) Additional academic papers for each session
Teaching methods	Face-to-face lectures and discussion
Assessment methods	Written exams
Language of instruction	Greek/English

Human Resources Management

Course title	Human Resources Management
Course code	Full Time Program: m81227f Part Time Program: m81227p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 1 st
Semester/trimester	Full Time Program: 2 nd Part Time Program: 2 nd
Number of credits allocated	2.5ECTS
Name of lecturer	Dr. Eleanna Galanaki, Assistant Professor Dr. Nikos Pahos, Lecturer
Objective of the course (preferably expressed in terms of learning outcomes and competences)	The aim of the course is to introduce students to the concept and practices of Human Resource Management (HRM), which is one of the most critical business functions. Students that will attend this course will be able to understand the specific HRM functions, and the particular difficulties of managing people.
Prerequisites	No prerequisites.
Course contents	<ol style="list-style-type: none"> 1. Introduction to Human Resource Management 2. Human Resource Management Planning 3. Staffing (Attracting and Selecting Employees) 4. Training and Development 5. Performance Appraisals

	6. Compensation and Rewards
Recommended reading	<ul style="list-style-type: none"> • Torrington D., Hall L., Taylor S., Atkinson C. (2017). Διοίκηση Ανθρώπινων Πόρων. Λευκωσία, Broken Hill Publishers • Παπαλεξανδρή, Ν. και Μπουραντάς, Δ., (2016). Διοίκηση Ανθρώπινων Πόρων. Αθήνα, Εκδόσεις Μπένου • Dessler Gary (2017). Διαχείριση ανθρώπινου δυναμικού. Αθήνα, Εκδόσεις Κριτική • Χυτήρης, Λ. (2018). Διοίκηση Ανθρώπινων Πόρων. Αθήνα, Εκδόσεις Μπένου
Teaching methods	Lectures, group assignments, presentations and case studies
Assessment methods	<ul style="list-style-type: none"> • Individual assignment (80% of the final grade) • Group assignment (20% of the final grade)
Language of instruction	Greek / English

Introduction to Business Analytics using Python

Course title	Introduction to Business Analytics using Python
Course code	Full Time Program: m81228f Part Time Program: m81228p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 1 st
Semester/trimester	Full Time Program: 2 nd Part Time Program: 2 nd
Number of credits allocated	2.5ECTS
Name of lecturer	Associate Professor Nikolaos Korfiatis (Visiting), Norwich Business School, University of East Anglia, Norwich, United Kingdom.
Objective of the course (preferably expressed in terms of learning outcomes and competences)	The goal of this course is to introduce the use of Python in the context of business analytics and in particular the handling of business data across the phases of well-established frameworks in the practice of business analytics. The course will make use of the Cross Industry Standard Model for Data Mining (CRISP-DM) and use python to guide the students between the nexus of business understanding, data understanding, modelling and evaluation of models in both exploratory and predictive analytics contexts.
Prerequisites	No prerequisites.
Course contents	<ol style="list-style-type: none"> 1. Introduction to the Python Programming environment and general language use. The python package ecosystem and Jupyter Notebooks. 2. Handling of data in business analytics settings. Data structures, control flow and loops. Connecting to databases using python. 3. Handling datasets using Pandas, the data quality lifecycle. Augmenting, aggregating and cleaning datasets. Basic descriptive statistics and contingency tables. 4. Unstructured data, web scraping using selenium. Building and inspecting datasets for business analytics.

	<p>5. Supervised learning. Statsmodels and regression frameworks. Econometric models and forecasting.</p> <p>6. Unsupervised learning. Classification and decision trees. ROC curves and model selection.</p>
Recommended reading	<p>The course material will be provided in slides and videos as well as exercise packs from Datacamp.</p> <p>The students can source examples of python use from the following books:</p> <ul style="list-style-type: none"> • McKinney, W., (2017). Python for data analysis: Data wrangling with Pandas, NumPy, and IPython. (2nd Edition). O'Reilly. • Navlani, A., Fandango, A., & Idris, I. (2021). Python Data Analysis: Perform data collection, data processing, wrangling, visualization, and model building using Python. Packt Publishing Ltd. <p>Basic understanding of the CRISP-DM process for business analytics can be sourced from:</p> <ul style="list-style-type: none"> • Liebowitz, J. (Ed.). (2013). Business analytics: An introduction. CRC Press. • Wirth, R., & Hipp, J. (2000). CRISP-DM: Towards a standard process model for data mining. In Proceedings of the 4th international conference on the practical applications of knowledge discovery and data mining (Vol. 1). London, UK.
Teaching methods	<p>The course will be supported by datacamp and requires both synchronous and asynchronous participation. The main content will be provided by Datacamp which will sponsor the participation of the students for this module and is provided only to students taking part of this module. There will be learning units and exercises for each of the parts that the course will cover. A synchronous 3-hour weekly session will be facilitated where the Datacamp material will be introduced and exercises and examples will be provided along with the basic interfaces for solving business analytics problems as described in the course contents.</p>
Assessment methods	<p>The course will be evaluated in three levels.</p> <ol style="list-style-type: none"> 1. An individual assignment which will require the completion of the relevant modules from datacamp as set by the instructor. This will count for 20% of the grade. 2. A further 10% will be calculated by the open assessment score that will be obtained by the datacamp facilitated assessment and will open in the last week of the course. 3. The remaining 70% will be provided by a group assignment which will require the students to form groups of four and replicate and expand an existing python kernel from a list of Kaggle competitions that will be provided by the instructor.
Language of instruction	Greek / English

Project Management

Course title	Project Management
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Course code	Full Time Program: m81229f Part Time Program: m81229p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 2 nd
Semester/trimester	Full Time Program: 2 nd Part Time Program: 2 nd
Number of credits allocated	2.5ECTS
Name of lecturer	George Diakonikolaou, Ph.D. PMP, Visiting Faculty
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<p>Successful students will be able to:</p> <ol style="list-style-type: none"> 1. Understand the difference between project and non-project (functional/operational) work 2. Understand the nature of the project management work. 3. Understand stakeholder requirements and expectations as key elements of the project success. 4. Evaluate different methods of leadership styles for deploying authority and power to successfully reach the project goals. 5. Integrate different planning and control methods to manage projects in a multi-project environment. 6. Understand the value of communication and be able to use a number of approaches to plan communications and effectively engage the project Stakeholders 7. Understand the nature of project risk and the issues that influence effective risk management (threats and opportunities). 8. Understand the importance of teamwork and be able to integrate a number of tools and techniques to actively involve and motivate the project team to achieve the project objectives 9. Know about the importance of budgeting and cash flow for the project 10. Understand the importance of procurement work to the project success
Prerequisites	No prerequisites.
Course contents	<p>The course content is aligned with the Project Management Institute's Standards for Project Management as well as the ISO 21500 "Guidance on Project Management".</p> <p>It follows the latest developments in the sector and covers the following areas</p> <ol style="list-style-type: none"> 1. Interpersonal Skills for Project Managers. These include communication, conflict management, team development, motivation, influence and stakeholder management 2. Process skills for Project Managers. These follow the Project Management Body of Knowledge 6th edition and the Agile Practice Guide 3. Business Skills for Project Managers. These cover areas like Organisational Development and Organisational Culture as well as Company Policies to Support Projects in Organisations.

	<p>The above contents are covered in the following modules:</p> <ol style="list-style-type: none"> 1. The Project Environment 2. The Role of the Project Manager 3. Organisational Issues for Projects 4. Project Integration Management 5. Project Stakeholders Management 6. Project Scope Management 7. Project Schedule Management 8. Project Cost Management 9. Project Quality Management 10. Project Resource Management 11. Project Communications Management 12. Project Risk Management 13. Project Procurements Management <p>These modules are covered in 6 lecture sessions.</p>
<p>Recommended reading</p>	<p>The primary reference for this course is the PMBOK Guide 6th edition. It represents the accumulation of knowledge and best practices in Project Management, published by the Project Management Institute (www.pmi.org), it is an ANSI standard and has sold more than three million copies until now. Also, the ISO 21500, an international standard on project management, is mostly based on the PMI's approach.</p> <p>Other recommended references are:</p> <p>Agile Practice Guide Author: Project Management Institute Publisher: Project Management Institute The importance of this reference is growing as the value to agile approaches to the current working environment.</p> <p>Project Management: A Systems Approach to Planning, Scheduling, and Controlling Author: Harold Kerzner Publisher: Wiley It is considered the "Bible of Project Management". A very insightful and extensive reference to practically all project management issues, mostly from a traditional point of view.</p> <p>Effective Project Management: Traditional, Agile, Extreme, Hybrid Author: Robert K. Wysocki Publisher: Wiley A good reference to compare various approaches for project or product work</p> <p>Fundamentals of Technology Project Management, 2nd Edition Author: Colleen Garton with Erika McCulloch Publisher: MC Press</p> <p>Project Managers Portable Handbook, 3rd Edition Author: David Cleland and Lewis Ireland Publisher: McGraw-Hill</p> <p>Information Technology Project Management, 7th Edition</p>

	<p>Author: Kathy Schwalbe Publisher: Cengage Learning Essential Scrum: A Practical Guide to the Most Popular Agile Process Author: Kenneth S. Rubin Publisher: Addison-Wesley Project Management: The Managerial Process Author: Erik Larson Publisher: McGraw-Hill The Project Management Tool Kit: 100 Tips and Techniques for Getting the Job Done Right Author: Tom Kendrick Publisher: AMACOM</p>
Teaching methods	Mix of presentations and workshops followed by discussions.
Assessment methods	40% coursework (team project) 60% final exam
Language of instruction	Greek / English

Digital Currencies and Electronic Payment Systems

Course title	Digital Currencies and Electronic Payment Systems
Course code	Full Time Program: m81230f Part Time Program: m81230p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 2 nd
Semester/trimester	Full Time Program: 1 st Part Time Program: 3 rd
Number of credits allocated	2.5 ECTS
Name of lecturer	George Lekakos, Assoc. Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<p>The course has a dual purpose: on the one hand to analyze the most important technologies and practices of electronic payments (such as e-banking, e-invoicing, etc.) highlighting the importance of utilizing digital payment systems at both business and national level and from the other to introduce students to the emerging realm of virtual currencies, such as Bitcoin, and blockchain technologies.</p> <p>At the end of the course students will be able to:</p> <ul style="list-style-type: none"> • Understand the technologies and electronic payment systems that a modern business can take advantage of. • Understand the necessary redesign of processes required by the utilization of digital transactions, such as electronic invoicing, as well as the security requirements related to the use of e-payment systems. • Understand the factors that influence the adoption of electronic payment systems (eg e-banking). • Understand the components of digital currency based on blockchain technology, the process of issuing digital currency, proof of work mechanisms, the concept of common consent and decentralized ledgers.

	<ul style="list-style-type: none"> • Understand advanced uses of blockchain, such as guarantee services, asset registration, confirmation and smart contracts. • Understand the potential effects of digital currencies on existing monetary and banking systems.
Prerequisites	No prerequisites.
Course contents	<ul style="list-style-type: none"> • Digital payments: technologies and applications. • Process redesign and assessment of the utilization of electronic payment / transaction systems - case studies. • Factors of adoption and use of electronic payment systems. • Introduction to digital currencies (history, decentralized consensus through proof-of-work, Bitcoin / blockchain principles). • Practical examples (business applications, digital currency projects, case studies). • Innovation and growth: how can digital currencies and blockchains be viewed through innovation frameworks and what are their potential to accelerate economic growth.
Recommended reading	<ul style="list-style-type: none"> • Antonopoulos, A. (2014) Mastering Bitcoin, O'Reilly Publishing. • Lai, V., Li H., (2005) Technology acceptance model for internet banking: an invariance analysis <i>Information & Management</i> 42, pp. 373–386. • Lekakos, G., Vlachos, P., Koritos, C. (2014) “Green is Good but is Usability Better? Consumer Reactions to Environmental Initiatives in e-Banking Services”, <i>Ethics and Information Technology</i>, vol. 16, pp. 103-117. • Nakamoto, S. (2008) Bitcoin: A Peer-to-Peer Electronic Cash System.
Teaching methods	Lectures using powerpoint presentations, case study analysis, micro-project and final project assignments presented by the students.
Assessment methods	The evaluation of the course will be based on the evaluation of the assignment, which will be orally presented.
Language of instruction	Greek / English

Organizational Behaviour

Course title	Organizational Behaviour
Course code	Full Time Program: m81231f Part Time Program: m81231p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 2 nd
Semester/trimester	Full Time Program: 2 nd Part Time Program: 4 th
Number of credits allocated	2.5ECTS
Name of lecturer	Ioannis Nikolaou, Associate Professor Sofia Chatzi, PhD
Objective of the course (preferably expressed in terms of learning outcomes and competences)	The main objective of the course in Organizational Behavior (OB) is the study of human behavior in the workplace. This knowledge is necessary not only for every executive who manages a team, but also for every employee, since it is related to his personal and professional

	<p>development.</p> <p>Upon successful completion of this course, students will be able to:</p> <ol style="list-style-type: none"> 1. Understand organizational behavior in order to have the ability to manage the human factor more effectively. 2. Understand the importance of human resources for the success of modern organizations. 3. Recognize key conceptual frameworks and apply related theories as tools for analyzing organizational behavior and providing development.
Prerequisites	No prerequisites.
Course contents	<p>This course consists of six (6) submodules:</p> <ol style="list-style-type: none"> 1. Perceptions and Stereotypes in the workplace-Communication 2. Psychology of Individual Differences & Psychometric Evaluation 3. Leadership in Organizational Settings 4. Foundations of Employee Motivation 5. Teams and Teamwork 6. Work Stress and Stress Management
Recommended reading	<p>Vakola, M. & Nikolaou, I. (2019). <i>Organizational Psychology & Behavior</i>. Athens: Rosili</p> <p>Lectures/ Scientific Paper</p> <p>Recommended Resources</p> <p>There are a number of relevant sources that students may refer to in addition to the basic required readings. The following are indicative:</p> <ol style="list-style-type: none"> 1. Penney, L. M., David, E., & Witt, L. A. (2011). A review of personality and performance: Identifying boundaries, contingencies, and future research directions. <i>Human Resource Management Review</i>, 21(4), 297-310. 2. Hansen, M. T., Ibarra, H., Peyer, U., & von Bernuth, N. (2013). The Best-Performing CEOs in the World. <i>Harvard Business Review</i>, 91(1/2), 81-95. 3. Nohria, N., Groysberg, B., & Lee, L.-E. (2008). Employee Motivation. <i>Harvard Business Review</i>, 86(7/8), 78-84.
Teaching methods	This course is based on the suggested book, class discussions, lectures, case studies, guest speakers and videos.
Assessment methods	<p>Written Assignment (WA) (weighting-50%): Each student must select a topic related to Organizational Behavior and submit a bibliographic review of the most important theories and theoretical approaches to the topic using literature-based information and supporting his/ her analysis with appropriate references from scientific journals worldwide. All individual submissions must include at least four quality research sources. (5,000-8,000 words).</p> <p>Final Exam (FE) (weighting-50%): Due to the restrictions set by the Covid-19 pandemic, a 'take-home' examination at the end of the semester has been designed to assess all topics covered in OB including lectures, tutorial materials, and relevant text book chapters. A case study is given to all students a few days before the day/ time of the exam, which students should study carefully. The examination instructions and questions will be made available through Eduportal on the day of exams, and students will have a set of three hours to complete these before</p>

	<p>submitting answers in the assessment folder. This is an individual piece of work and, as an open-book task, completely remotely (not in a formal and invigilated examination venue), it is subject to normal DMST coursework regulations (and will be submitted through Turnitin software).</p> <p>Alternatively, final exam is traditionally a closed-book task and consists of a combination of short answer questions, multiple-choice questions, case-studies, and/ or short essays or a combination of these. Exam content covers presentations, book, scholarly articles, exercises discussed in class.</p>
Language of instruction	Greek/ English

Industrial Systems in the Digital Era

Course title	Industrial Systems in the Digital Era
Course code	Full Time Program: m81232f Part Time Program: m81232p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 2 nd
Semester/trimester	Full Time Program: 2 nd Part Time Program: 2 nd
Number of credits allocated	2.5 ECTS
Name of lecturer	Vaggelis Giannikas, Associate Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<p>By the end of this course, the students should be able to:</p> <ol style="list-style-type: none"> 1. Recognise the building blocks of Digital Industrial systems 2. Identify relevant digital industrial initiatives/approaches around the world and discuss their importance for policy makers and practice 3. Assess key enabling technologies for their benefits and limitations 4. Examine business applications across the value chain that are/will be affected by digitalisation
Prerequisites	No prerequisites.
Course contents	<ol style="list-style-type: none"> 1. Digitalisation and digital economy: Why and how is the world moving towards “digitalisation”? 2. Digital industrial systems: How have industrial systems changed due to digitalisation? What do digital industrial systems look/will look like? 3. Policy/Practice initiatives: What do governments and the industry do to further develop digital industrial systems? 4. Technologies enabling digital industrial systems: How do they transform industrial systems? 5. Applications and use cases: How does digitalisation influence/change the value chain?
Recommended reading	<p>Due the contemporary nature of this topic, multiple sources will be used as reading material (academic and news articles, case studies etc). Examples of such sources that serve as a good starting point are:</p> <ul style="list-style-type: none"> • Klaus Schwab (2016): The Fourth Industrial Revolution: what it means, how to respond. Foreign Affairs

	<ul style="list-style-type: none"> • Brian Hartmann, William P. King, and Subu Narayanan (2016). Digital manufacturing: The revolution will be virtualized. McKinsey report • Karen Queen (2018). What is digital manufacturing? The Manufacturer.
Teaching methods	<ul style="list-style-type: none"> • Lectures • Guest talks • Case studies • Group discussion • Student presentations
Assessment methods	Written exam: 80% Presentation: 20%
Language of instruction	Greek / English

Mathematical Programming

Course title	Mathematical Programming
Course code	Full Time Program: m81234f Part Time Program: m81234p
Type of course	Elective
Year of study	Full Time Program: 1 st Part Time Program: 2 nd
Semester/trimester	Full Time Program: 1 st Part Time Program: 4 th
Number of credits allocated	2.5ECTS
Name of lecturer	Yiannis Mourtos, Associate Professor
Objective of the course (preferably expressed in terms of learning outcomes and competences)	<p>This course has several intertwined aims, namely:</p> <ol style="list-style-type: none"> 1. To offer a lucid and in-depth understanding of the main methods and mathematical theory regarding optimisation. 2. To develop the art of model building in mathematical programming via a series of exercises and case-studies, which cover a broad and representative set of applications. 3. To gain familiarity with state-of-the-art commercial solvers in terms of both encoding and solving optimisation problems. 4. To obtain insight into real-life settings and applications.
Prerequisites	No prerequisites.
Course contents	<p>Mathematical programming methods, models and solvers enjoy a long-standing applicability and a recent revival in developing and using them. This course will offer a concise presentation of the major mathematical programming principles and methods in order to then focus mostly on the development of models of real problems, their encoding using algebraic languages and the subsequent use and fine-tuning of commercial solvers. In that manner, it will provide an end-to-end investigation of a typical operations research approach that exploits a verbal description of a real problem to provide a mathematical formalisation and a method finding the optimal solution. Several</p>

	particularities of mathematical programming methods will be discussed while moving along a series of modeling exercises, while also establishing its main application-independent principles that make it an attractive solution approach.
Recommended reading	Lecture notes, hand-outs and slides are provided, together with software documentation and updated journal papers.
Teaching methods	Six 3-hour lectures, during which we interplay between workshops on modelling in appropriate software and mathematical modelling on a white board.
Assessment methods	A compulsory set of exercise will be handed out, possibly in the form of a unified project with intermediate deliverables, and will count for 50% of the final mark, the remaining 50% arising from the final course exam.
Language of instruction	Greek/English

PART III: INFORMATION FOR THE STUDENTS

GENERAL INFORMATION FOR THE STUDENTS

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

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

Meals

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

Medical Services, Insurance / Healthcare

Undergraduate, postgraduate and PhD students of the University who have no other medical and hospital care are entitled to full medical and hospital care in the National Health System with coverage of the relevant costs by the National Health Service Provider. The doctor's office is located in the main building and operates on some working days as announced. A psychiatric counseling service also operates at the University, staffed with a physician specializing in the treatment of mental health issues. More information can be found here <https://www.aueb.gr/en/content/health-care>.

Services/Facilities to Students with Special Needs

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

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

Student Financial Aid – Scholarships and Awards

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

Library and Study Rooms

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

Three Documentation Centers operate within the Library:

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

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

- Its printed collection of books and scientific journals,
- Course books used in classes,
- Its collection of electronic scientific journals
- Its collection of e-books
- Postgraduate theses and doctoral theses that are produced in Athens University of Economics and Business and deposited in digital form at the PYXIDA institutional repository
- Sectoral studies
- Statistical series by national and international organizations
- Audiovisual material
- Information material (encyclopedias, dictionaries)
- Collection of official government publications of the European Union, the OECD and the WCO
- Databases on the issues adopted by the University
- Printed collections of other academic libraries

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

International Programmes and Information on International Student Mobility

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

Finally, AUEB, adopting the internationalization and extroversion strategy, has been successfully participating in the International Credit Mobility Program with the aim of developing international collaborations in education and research with Partner Universities in countries outside the EU via:

a) student mobility b) short-term teaching staff mobility and c) teaching / administrative staff training mobility. The Program was first implemented in the academic year 2015-2016, and since then a total of 52 students and staff members moved from and to 8 Partner Institutions in countries outside the EU (USA, Canada, Singapore, Russia, South Korea, Armenia). More information can be found in the here <https://www.aueb.gr/en/content/erasmus-programme>

Foreign Language Courses

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

Connections with the Job Market and Entrepreneurship

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

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

DASTA is structured in three units:

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

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

Athletic Activities

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

Cultural Activities

To fulfill its purpose of providing a multidimensional study experience at AUEB, the Student Club organizes various cultural activities, such as theater, traditional dance, choir, photography, cinema,

rhetorical club and Model Of United Nations (MUN). More information can be found here <https://www.aueb.gr/en/content/cultural-activities>

Student Organizations and Clubs

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

Alumni Network

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

Volunteer Program

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

Quality Assurance

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

Education and Lifelong Learning Center

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