University of Piraeus
School of Maritime & Industry
Department of Industrial Management & Technology

Course Guide 2024-2025

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Dear students,

We welcome you to the **Department of Industrial Management & Technology (DIMT)** and congratulate you on your success. Our Department began its operation in 1991. It is genuine successor of the "School of Industrial Studies" that was founded back in 1938, evolved to the "Higher Industrial School of Piraeus" in 1958, and was finally renamed as the "University of Piraeus" in June 1989. (See also History of the University).

The DIMT is a dynamic, evolving cell of the University of Piraeus, with goals, vision and a promising future. Its distinctive advantage – and at the same time its added value – is that it combines **management science** with the **technological component** in the field of **industrial enterprise**, thus differentiating it from general business administration studies. Let's try to understand what this means.

Every day we all use products and goods that have been produced through industrial processes and procedures. However, what does industrial production means? Questions like how a product is **designed**, how do we **choose the materials** to use, what **equipment** to choose and how to put it into operation, how to **plan our production** using available resources in an optimal manner, how to manage our **supplies** and how we organize our **distributions**, how we set our strategy in the face of competition, how we manage and **motivate** our executives, how we leverage our **information** and how we **analyze our business data**, how we manage **energy and environmental challenges**, how we make business **decisions under uncertainty**, how we set up **reliable and quality** production units, etc., are required on a daily basis in an industrial enterprise so that we can enjoy various **innovative** and **sustainable** products.

In your undergraduate studies at the DIMT you will have the opportunity to learn and practice the **methods** that provide us with answers to these (and many more) questions and use **modern software tools** to support your decisions, implement strategies and solve problems that require **knowledge and skills** in the contemporary, technologically advanced industry. But above all, you will develop a **broad** and **critical way of thinking** and discover the **challenges** and **fascination** of combining technological and managerial knowledge, which shape both the **modern** scientist and the **successful** business executive.

Our Department, as well as our University in general, will be by your side at every step of this path, providing you with **knowledge** and **opportunities** and opening **windows** for you to discover attractive areas of interest.

From your side, you should be **consistent**, operate with **academic principles**, make every day count and always **evolve**.

I wish you all have a creative academic year!

Professor Dimitrios Emiris

Department Chair

Contents

Objectives and Philosophy

The Department of Industrial Management & Technology of the University of Piraeus was founded in 1989 as Department of Technology and Production Systems. In 2002 was renamed to Department of Industrial Management & Technology while in 2013 included in School of Maritime and Industrial Studies.

University of Piraeus – Industrial Management & Technology

The Department of Industrial Management and Technology aims at training, educating and preparing executives in the science of Production Management, with emphasis on the application of novel technologies to production systems. The aim of the Department, through a modern curriculum, is to provide students with the knowledge of the scientific methodology required for the analysis, design, implementation and organization of suitable systems, in order to effectively address the complex problems arising from the interdependencies of the human factor, raw or other materials, means of production and state-of-the art technology in production.

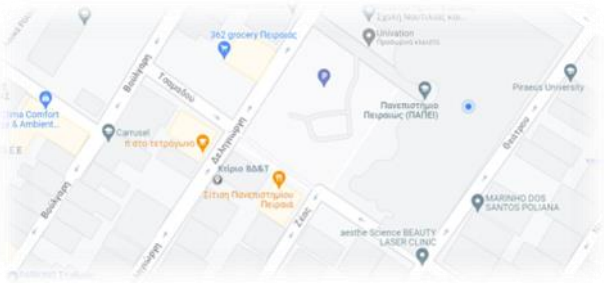
The Department's curriculum is aimed at students who wish to become executives of private and public production units and of enterprises active in the fields of manufacturing and provision of services.

To this end, the undergraduate program includes background courses that cover the core modules of the Physical, Mathematical and Socio-Economic Sciences, as well as courses focused on the main fields of specialization, providing fundamental training and tools for studying phenomena, systems and technologies of modern production. It also introduces the additional and critical dimension of the human factor, its activities, behavior and creativity.

Constant principles in the operation of the Department are:

- Close cooperation with businesses for the purpose of practical student education and business support with studies and research programs.
- Continuous renewal and adaptation of the curriculum to modern scientific and technological developments.
- The exploitation of research programs and the development of research projects aiming at the development of new researchers, the international presence of the Department in scientific developments and the contribution to the developmental needs of the Greek economy.
- Working with the international scientific community.
- Utilization of all modern educational tools and technologies.
- Developing the spirit of cooperation and rewarding the scientific and social work of all stakeholders.

About the Department



The Department of Industrial Management & Technology resides at the main building of the University of Piraeus (80 Karaoli & Dimitriou Str.) and also at the Department's building (107 Deligiorgi Str.). The President's office is at the 3rd floor of the main building and the Department's Secretary office at the 1st floor. The lectures are been held at the classrooms of the ground floor, the 1st, the 2nd and the 3rd floor of the main building of the University, while some elective courses are held in classroom 301 of the Department's building (107 Deligiorgi Str.) or at the building of 21 Gr. Lampraki Str. The Laboratories are housing at the Industrial Management and Technology building at 107 Deligiorgi str. And also at the Neoclassical Building at 78 Tsamadou str. The Professors' offices are housing at the 3rd floor of the main building of the University, the 3rd and 4th floor of at the Industrial Management and Technology building at 107 Deligiorgi str. and at the Universitity building at 21 Gr. Lampraki str. More informations you can find at the website of the Department.

Secretariat of the Department

The Secreteriat of the Department (tex-secr@unipi.gr) held at Office 114 at the 1st floor of the main building of the University. The Secreteriat is responsible for the filing and anouncement of the exam results, the anouncent of graduates, the granting of various certificates etc. The provision of all certificates is given through student application.

Secretariat employees serve the public on specific days and times which are announced at the beginning of each Academic Year.

Students have the possibility to be informed electronically about their progress through the online address https://sis-portal.unipi.gr using codes. From this website students have the possibility to:

- To display details of their courses, lecturers, suggested bibliography, etc.
- To be informed about their exam results.
- To submit electronically the course statements (obligatory and elective).
- Receive student certificates in electronic form.
- To submit applications for the granting of certificates.
- To be informed of the announcements of the Secretariat.

Administrative Bodies & Staff

FACULTY	SUBJECT AREA	PHONE / E-MAIL
Dimitrios Emiris Professor	Management of Automated Production Systems (including robotic systems)	phone: 210 4142318 e-mail: emiris@unipi.gr
Dimitrios Karalekas Professor	Material Technology- Industrial Applications	phone: 210 4142319 e-mail: dkara@unipi.gr
Socrates Moschuris Professor	Supply Chain Management & Industrial Products Handling	phone: 210 4142361 e-mail: smosx@unipi.gr
Dimitrios Sidiras Professor	Experimental and Computational Simulation of Industrial Processes	phone: 210 4142360, 2362 e-mail: sidiras@unipi.gr
Christina Siontorou Professor	Chemical Technology Product Design	phone: 210 4142453 e-mail: csiontor@unipi.gr
Styliani Sofianopoulou Professor	Mathematical Programming in Manufacturing	phone: 210 4142147 e-mail: sofianop@unipi.gr
Alexandros Flamos Professor	Technoeconomics of Energy Systems	phone: 210 4142460 e-mail: aflamos@unipi.gr
Gregory Chondrokoukis Professor	Information Systems Management	phone: 210 4142255, 2618, 2149 e-mail: gregory@unipi.gr
Konstantinos Kostopoulos Professor	Corporate Strategy	phone: 210 4142152 e-mail: kkostop@unipi.gr
Dimitrios Psychoyios Professor	Finance & Investments	phone: 210 4142399 e-mail: dpsycho@unipi.gr
Ioannis Giannatsis Associate Professor	Advanced Product Manufacturing Technologies with a focus on Additive Manufacturing Technologies	phone: 210 4142151 e-mail: ggian@unipi.gr
Nikolaos Rachaniotis Associate Professor	Supply Chain Management	phone: 210 4142148 e-mail: nraxan@unipi.gr

FACULTY	SUBJECT AREA	PHONE / E-MAIL
Tatiana Tambouratzis **Associate Professor**	Information Technology with Emphasis on Applications of Mild Computational Techniques	phone: 210 4142423 e-mail: tatiana@unipi.gr
Pavlos Eirinakis **Associate Professor**	Analytical Methods in Industry	phone: 210 4142390 e-mail: pavlose@unipi.gr
Nikoleta Chatzidai **Assistant Professor**	Modelling and Analysis of Advanced Manufacturing Technologies Structures using Numerical Methods-Finite Elements	phone: 210 4142109 e-mail: nchatzi@unipi.gr
Vassileios Kanellidis **Assistant Professor**	Digital Techniques in Industrial Production Systems	phone: 210 4142165 e-mail: bcanell@unipi.gr

TEACHING STAFF

Aggeliki Geronti	Teaching Staff **(E.DI.P.)**	phone: 210 4142351, 2368 e-mail: ageron@unipi.gr

ADMINISTRATIVE STAFF

Evageli Tasia	Secretariat	phone: 210 4142094 e-mail: ltasia@unipi.gr
Fotini Parayou	Secretariat	phone: 210 4142098 e-mail: fpar@unipi.gr
Evfrosini Alexandri	Postgraduate Studies Secretariat	phone: 210 4142095 e-mail: ealex@unipi.gr
Anastasia-Marina Tryposkoufi	Department Chair's Office	phone: 210 4142164 e-mail: atriposk@unipi.gr

Bodies and Committees of the Department

Head of the Department	Prof. D. Emiris
Deputy Head of the Department	Prof. A. Flamos
Director of MSc	Prof. D. Karalekas
Deputy Director of MSc	Prof. A. Flamos
Head of Doctoral Studies Program	Prof. D. Karalekas
Internship Coordinator	Assoc. Prof. I. Giannatsis
Erasmus Academic Coordinator	Assoc. Prof. I. Giannatsis
Course Guide Coordinator	Assoc. Prof. I. Giannatsis Assist. Prof. N. Chatzidai
Website Management and Digital Communication Coordinator	Assoc. Prof. P. Eirinakis
Undergraduate Academic Advisor	1st year Assoc. Prof. P. Eirinakis Assist. Prof. N. Chatzidai 2nd year Assoc. Prof. I. Giannatsis Assoc. Prof. N. Rachaniotis 3rd year Prof. K. Kostopoulos Assoc. Prof. T. Tampouratzis 4th year Prof. S. Moschuris Prof. A. Flamos 4th year + 1 year Prof. D. Sidiras Prof. Ch. Siontorou 4th year + 2 years Prof. D. Karalekas

Academic Advisor of MSc

Logistics Management

Prof. K. Kostopoulos

Energy & Environmental Management

Prof. A. Flamos

Project Management

Prof. D. Emiris

COMMITTEES

INTERNAL ASSESSMENT TEAM

Prof. Ch. Siontorou (Coordinator)

Assoc. Prof. N. Rachaniotis

Assoc. Prof. I. Giannatsis

Assist. Prof. N. Chatzidai

Associate Members

Prof. K. Kostopoulos

Assoc. Prof. P. Eirinakis

Assist. Prof. V. Kanellidis

Secretariat

A. Tryposkoufi

STRATEGIC PLANNING COMMITTEE

Prof. D. Emiris (Coordinator)

Prof. D. Karalekas

Prof. A. Flamos

Assoc. Prof. K. Kostopoulos

ACADEMIC ETHICS COMMITTEE

Prof. D. Emiris (Coordinator)

Prof. D. Karalekas

Prof. G. Chondrokoukis

PROGRAMME COURSES COMMITTEE

Prof. A. Flamos (Coordinator)

Prof. Ch. Siontorou

Assoc. Prof. N. Rachaniotis

Assoc. Prof. P. Eirinakis

EXAMINATION COMMITTEE

Assoc. Prof. N. Rachaniotis (Coordinator)

Prof. S. Moschuris

Assist. Prof. V. Kanellidis

CLASSIFICATION COMMITTEE

Prof. D. Emiris (Coordinator)

Prof. S. Moschuris

Prof. D. Sidiras

Prof. A. Flamos

Prof. K. Kostopoulos

Assoc. Prof. N. Rachaniotis

Assist. Prof. V. Kanellidis

STUDENT COMPLAINTS & OBJECTIONS COMMITTEE

Prof. A. Flamos (Coordinator)

Prof. Ch. Siontorou

Assoc. Prof. K. Kostopoulos

INDUSTRIAL TRAINING COMMITTEE

Regular Members

Assoc. Prof. G. Giannatsis (Coordinator)

Assist. Prof. N. Chatzidai

Assist. Prof. V. Kanellidis

Substitute Members

Prof. S. Moschuris

Prof. D. Sidiras

Assoc. Prof. T. Tampouratzis

EXTRAVERSION TEAM

Prof. K. Kostopoulos (Coordinator)

Prof. D. Psychoyios

Assoc. Prof. N. Rachaniotis

Assoc. Prof. P. Eirinakis

INFRASTRUCTURE, SAFETY & HEALTH TEAM

Prof. A. Flamos (Coordinator)

Prof. D. Sidiras

Assoc. Prof. I. Giannatsis

Assist. Prof. V. Kanellidis

INTERNAL STUDENT MOBILITY COMMITTEE

Assoc. Prof. I. Giannatsis

Assoc. Prof. T. Tampouratzis

Assist. Prof. N. Chatzidai

AWARDS COMMITTEE

Prof. K. Kostopoulos

Prof. Ch. Siontorou

Prof. A. Flamos

WEBSITE MANAGEMENT AND DIGITAL COMMUNICATION TEAM

Assoc. Prof. P. Eirinakis (Coordinator)

Assist. Prof. V. Kanellidis

Assist. Prof. N. Chatzidai

Research Labs

The Department has six (6) research labs, the Laboratory of Advanced Manufacturing Technologies & Testing (LAM@T), the Laboratory of Simulation of Industrial Processes (LSIP), the Laboratory of Production Management Information Systems (PMIS), the Laboratory of Technoeconomics of Energy Systems (TEESlab), the Management and Economics of Industry Laboratory (EDOE) and the Laboratory of Innovative and Sustainable Supply Chain Management (ISSCM) which support the educational and research activities of the Department.

Details about the Laboratories are shown in the following Table:

LABORATORY	ADDRESS	WEBSITE	CAPACITY
LAM@T	107 Deligiorgi Str., Bld of Industrial Management & Technology, ground floor	https://www.tex.unipi.gr/labs/lamtt/	70 m^2/25 persons
LSIP	107 Deligiorgi Str., Bld of Industrial Management & Technology, 1st floor	https://www.tex.unipi.gr/lsip/?lang=en	70 m^2/30 persons
PMIS	107 Deligiorgi Str., Bld of Industrial Management & Technology, 2nd floor	https://www.tex.unipi.gr/epsp/?lang=en	70 m^2/25 persons
TEESLAB	78 Tsamadou Str., Neoclassical bldg, 1st floor	https://www.tex.unipi.gr/teeslab/?lang=en	30 m^2/8 persons
EDOE	80, Karaoli & Dimitriou str.	https://www.tex.unipi.gr/edoe/?lang=en	-
ISSCM	80, Karaoli & Dimitriou str.	https://www.tex.unipi.gr/isscm/?lang=en	-

The **Laboratory of Advanced Manufacturing Technologies & Testing** (LAM@T) supports the educational and research needs in the areas of (a) the design and development of products and engineering structures, (b) the experimental investigation of the mechanical behaviour of products or structures and (c) the production and study of prototypes. The specific areas of interest of the Laboratory are (i) the applications of analytical and experimental engineering in the development of new products, (ii) the laboratory quality control of the mechanical behaviour of materials and products, (iii) the failure analysis of products and structures, (iv) the simulation of the operation and failure of products and structures, (v) the manufacturing of new materials and products, (vi) the scale modelling using stereolithography prototypes, (vii) the study and optimisation of the mechanical behaviour of products and structures using stereolithography prototypes, (viii) the computer-aided design (CAD) systems and related applications, (ix) the process of product design and development, (x) the industrial design, (xi) the study,

analysis, design and development of products and mechanical components, structures, systems, devices and installations using computer-aided techniques and methods and modern CAD/CAE systems, (xii) the simulation methods and related application techniques, (xiii) the optimisation and simulation of production systems, (xiv) the study and simulation of lighting systems, (xv) the manufacturing of physical prototypes using rapid prototyping techniques and their applications, (xvi) the techniques of products and tools production in small batches, (xvii) the computer-assisted machining (CAM), (xviii) the reverse engineering, (xix) the concurrent engineering and the operation models, (xx) the warehouse management, (xxi) the ergonomics and ergonomic design, (xxii) the robotics, (xxiii) the robotic work cells, (xxiv) the artificial vision, (xxv) the sensors & industrial automation, (xxvi) the management techniques of automated production systems, (xxvii) the intelligent control systems and artificial & computational intelligence, (xxviii) the modelling, simulation & control of dynamic and flexible production systems, (xxix) the SCADA systems, (xxx) the Computer Integrated Manufacturing (CIM).

The **Laboratory of Simulation of Industrial Processes** (LSIP) supports the educational and research needs in the areas of (a) experimental and computational analysis/simulation/optimisation of continuous industrial processes, (b) the integration of processes that constitute typical units of the Greek industrial sectors and (c) the necessary science background for the implementation of (a) and (b). The specific areas of interest of the Laboratory are (i) the visual presentation of physico-chemical phenomena and the measurement of their variables and control parameters for a better understanding of the chapters of the Physical Sciences on which Industrial Processes are based, (ii) the experimental and computational analysis and simulation of continuous industrial processes, with emphasis on the processes of transformation of materials and separation of their components, (iii) the experimental optimisation of continuous processes on a small scale and the transfer of the result to a large scale (scale up), (iv) the experimental decomposition/reconstitution of continuous processes in order to optimize their integration in conditions prevailing in typical plants of the Greek industrial sectors, (v) the experimental control and optimisation of new continuous chemical and biotechnology processes, using economic and technical criteria, (vi) the experimental investigation of process and material failure, (vii) the laboratory testing of physico-chemical properties of materials in relation to their production conditions, (viii) the laboratory quality control of materials and products (excluding their mechanical behaviour), including the economic and technical study of protection and maintenance methods, (ix) the knowledge management in collaboration with experimental and computational process simulators.

The **Laboratory of Production Management Information Systems** (PMIS) supports the educational and research needs in the areas of (a) decision support systems and experienced systems, (b) data management and advanced programming languages and (c) applications of artificial intelligence in production systems. The specific areas of interest of the Laboratory are (i) the introduction of students to computers, (ii) the management of databases and information, (iii) the advanced programming languages, (iv) the modern computer applications (Internet / Intranet & Multimedia), (v) the Decision Support Systems - DSS, (vi) the artificial intelligence in production systems, (vii) the Logistics Information Systems, (viii)) the e-commerce, (ix) the knowledge bases, search engines and empirical systems, (x) the environment design in information systems, (xi) the human factor in the design of technological systems, (xii) the quantitative analysis information systems, (xiii) the modelling and solution of systems using numerical simulation methods. In addition, it has computer equipment that is used by the students of the Department

during the preparation of assignments. The PMIS is available to students for study outside the hours of its scheduled activities.

The **Laboratory of Technoeconomics of Energy Systems** (TEESlab) is a multidisciplinary scientific unit that carries out research on the indicative scientific areas of the technoeconomic analysis & evaluation of energy systems, the energy market modelling & design of new innovative market mechanisms, the management of energy resources, the energy efficiency technologies, the technologies for better utilization of Renewable Energy Sources, the energy system analysis & planning, the security and reliability of energy supply, the energy system modelling, simulation and scenario development, the Distributed Energy Systems & Smart Grids, the analysis and modelling of energy consumer and producer behaviour, the development and application of consultation methods with energy market stakeholders, the Green Economy, the Energy and Climate Policy tools and the Design, Monitoring, Evaluation & Analysis of Energy and Climate Policy. In addition, the laboratory participates in national, European and international research projects and develops strong links with Greek and foreign universities and research centers, as well as with important Greek and foreign stakeholders.

The **Management and Economics of Industry Laboratory** (EDOE) supports the educational and research needs and conducts basic and applied research in the areas of corporate and business strategy, management and organisational behaviour, human resource management, knowledge management and organisational change management, marketing, innovation and entrepreneurship, corporate governance, supervision and regulatory framework, finance, investment, finance, economics and accounting. The Laboratory also collaborates (a) with public sector bodies, local authorities, scientific and social institutions and international organisations, (b) with private organisations and industry in order to promote and exploit the results of research in the operation of businesses or the submission of proposals on issues that coincide with the scientific subjects and research interests of the Laboratory.

The **Laboratory of Innovative and Sustainable Supply Chain Management** (ISSCM) supports the educational and research needs of the Department on issues that fall within its areas of activity. The scientific areas served by the Laboratory are the Digital Supply Chain Transformation, the application of modern technologies and processes in Procurement and Supply Management, the use of cloud computing, Internet of Things (IoT) and blockchain technologies in the Supply Chain, the supply chain traceability technologies, the digitalization of freight transport, the artificial intelligence and machine learning for big data analysis in supply chains, the digital twins and predictive maintenance technology in supply chains, the smart logistics, the sustainability of business supply chains, the sustainable logistics, the organisational change in supply chains towards sustainability, the climate change and supply chains, the sustainable transport fleet management and the humanitarian supply chains. The Laboratory has the mission to support all stakeholders in improving supply chain operations through basic, applied and innovative research and teaching aimed at promoting innovation taking into account sustainability. The main objective is to solve problems related to sustainability and to improve innovation management know-how in supply chains.

Undergraduate Study Program

Program Content and Objectives

The Undergraduate Study Program of the Department of Industrial Management & Technology is a four-year consolidated program leading to a diploma in Industrial Management and Technology. The curriculum corresponds to 240 ECTS.

The Department of Industrial Management and Technology is committed to providing its students with a high level of academic experience that promotes their knowledge and skills in problem solving and self-development, entrepreneurship, teamwork and scientific judgement in order to pursue postgraduate studies and/or to start their professional career in the private or public sector.

Based on the above, the undergraduate study program aims at:

- Creating a strong cognitive background for graduates by combining up-to-date knowledge and experience in industrial management and production.
- Increasing the employability of graduates through their training in the use of modern technological tools and their familiarization with state-of-art research developments in the scientific fields that the Department serves.
- Developing the metacognitive ability of graduates ensuring their smooth adaptation to the technologically-growing global economy in the new era of the 4th Industrial Revolution.
- Developing professionals with interpersonal/social skills that promote collectivity and collaboration both in the narrow academic and the wider social environment.
- Creating new knowledge through inter- and multi-disciplinary research.
- Contributing substantial to the efforts for reconstruction and increase of competitiveness, in cooperation with the respective production organizations of the industrial-business sector of the Greek economy.

More information and a detailed description of the Curriculum can be found at https://www.tex.unipi.gr/courses/?lang=en. The full-time Study Program is structured in 8 semesters with 6 courses per semester. The part-time study program lasts 16 semesters with 3 courses per semester. The courses are conducted in accordance with the decisions of the Senate of the University of Piraeus and the current legislation, circulars and guidelines issued by the Ministry of Education and Religious Affairs.

The grade point average of the diploma results from the evaluation of the courses that worth 5.5 ECTS. The courses that worth 2.5 ECTS are examined with a pass / fail grade.

The University of Piraeus offers Foreign Language courses, in particular English, French and German, to all its undergraduate programs. Courses are mandatory and students are examined with a pass / fail grade.

Learning Outcomes of the Program

Upon completion of their studies the graduates of the Department of Industrial Management and Technology will be capable of:

- Recognizing modern processes of product development and manufacture.
- Managing successfully the administrative functions and technological processes of the industrial business.
- Using modern tools and innovative methods in industrial administration.
- Using modern tools and innovative methods in product and process design.
- Making use of process optimization techniques and decision support and information management systems.
- Applying advanced techniques using new technologies for data extraction.
- Using the tools and methods of statistics, operations research and finance.

- Addressing effectively energy technology issues as well as ways of managing and protecting the environment.
- Designing methods and procedures for the assurance and quality control of industrial products by using modern computing tools.
- Developing a plan and formulating procedures for successfully addressing production planning, control, supply chain and ergonomics issues.
- Critically evaluating and incorporating resource-efficient methodologies in industrial production.
- Conducting effective research by being familiar with research methodologies and research planning in the field of industrial management and production.
- Conducting studies to solve problems that arise in industrial enterprises.
- Cooperating effectively in the management and execution of team projects.
- Coordinating effectively interdisciplinary and multi-disciplinary national and international projects.
- Demonstrating professional ethics and obeying the rules of scientific and business conduct.
- Undertaking high-level postgraduate studies.

Registration of Undergraduate Students

In the first semester of the Department of Industrial Management and Technology of the University of Piraeus are admitted the holders of a secondary school leaving certificate who take part in the written examinations of all general education courses, compulsory courses or cycle of courses and elective courses of one direction conducted at national level.

The deadline for the registration of new entrants to the Department is determined by a Ministerial Decision announced by the media. Successful candidates of the Panhellenic Examinations are invited to register online to the Department they succeeded through the central website of the Ministry of Education and Religious Affairs

At the end of the online registration application process and within a period determined by the Department's Secretariat, the successful candidates must present themselves to the Secretariat in order to be identified and informed about the other procedures for the finalization of their registration, by submitting the documents specified in the relevant announcement for the registration of first-year students posted on the Department's website.

The admission and registration of students belonging to special categories is consistent with the legislation in force.

Classifications

Students may register after succeeding admission tests in Mathematics-Statistics, Physical sciences, Computers and in accordance with the legislation in force.

According to a decision of the Assembly of the Department, which is validated every year, the candidates that pass the admission tests are enrolled in the 3rd semester of the program, exempting the courses examined at the admission tests and having the obligation to attend the remainder of the curriculum. Graduate applications for the classifications are submitted to the Department's Secretariat from 1st to 15th November, while the admission tests are held from 1st to 20th December.

Education

The educational/teaching work of each academic year is carried out in two semesters, the winter and spring semesters, in accordance to the academic calendar. There are three examination periods: January (for the winter semester), June (for the spring semester) and September (for both semesters). Students beyond the

regular duration of studies, may, be examined in the winter or spring semester of each academic year in all courses they have failed, regardless the respective semesters.

The Department of Industrial Management and Technology places particular emphasis on innovation in teaching methods and the integration of modern technologies in the educational process. Teaching is carried out through lectures, workshops, tutorials, seminars, interactive activities (experiential exercises, simulations, presentations by students, etc.), individual and group work of students and research work.

Courses are conducted in person, while there is also the possibility of distance learning through the Microsoft Teams platform. All courses, categorized by semester, are presented in detail at https://www.tex.unipi.gr/courses/?lang=en and hosted on the eclass platform, which provides many learning support features (exercises, assignments, consolidation material, lectures, useful links, etc.). It is suggested that students of the Department, while attending a course, should also register for the electronic version of the course in eclass.

The assessment methods of the courses are listed on the website of each course. They usually include a combination of methods (assignments, exercises, examinations, projects, etc.), which are effectively integrated in a student-centred approach, effectively promoting the achievement of learning outcomes and skills. Special provision is made for the assessment of students diagnosed, prior to their admission to the university, with learning disabilities (e.g., dyslexia) upon their request, accompanied by the relevant supporting documents, at the Department Secretariat.

In addition, 4th year students have the opportunity to participate in the Department's Internship program, in order to gain experience with workplaces, to acquire new knowledge, to participate actively in teamwork and in decision making, to develop their skills, to participate in the planning and completion of projects and to gain work experience. the participation of students in the program enhances the Department's linkage to the market and contributes to the development of cooperation networks.

Regulations of Undergraduate Program Studies

Students of the Department must study the Regulations of Undergraduate Program Studies and the rules of the Department and the University in order to know their rights and obligations.

Other provisions and regulations not included in the Regulations of Undergraduate Program Studies are posted at https://www.tex.unipi.gr/kanonismoi/?lang=en.

Students of the 4th year who have chosen the elective courses Project I and Project II, can consult the Regulations of Projects.

Also, students in their 4th year of study have the right to apply for a re-examination in four (4) courses from previous years of study. The grade subject to correction will be between five (5) and seven (7) and the new grade will apply in all cases. More information can be found at https://www.tex.unipi.gr/kanonismoi/kanonismos-beltiwshs-bathmologias/?lang=en.

Code of Conduct and Good Practice

The Department of Industrial Management & Technology is committed to the application of ethical rules, in compliance with the applicable laws relating to higher education and research, and to the decisions of the relevant bodies of the University of Piraeus. In addition, the Department is committed to continuously improving/upgrading its operations in accordance with international practices.

Services & Facilities

The students of the Department can benefit from a range of services and facilities depending on their interests, while special care has been taken for sensitive social groups such as the disabled and the needy. Information

on student welfare benefits (food, housing, housing allowance, health coverage and European insurance card), accessibility, textbooks, the Library, the Career Office, the Counselling Centre and the Health Care Services can be found at https://www.tex.unipi.gr/paroxes-pros-foithtes/?lang=en.

Academic Advisor

The institution of the Academic Advisor or Study Advisor is provided for in Law 4009/2011 (Government Gazette 195/6-9-2011) on the "Structure, operation, quality assurance of studies and internationalization of Higher Educational Institutions". More specifically, Article 35 defines the role of the Study Advisor, who "guides and supports students in their Study Programmes". In particular, the role of the Academic Adviser focuses primarily on providing:

- Guidance on course planning and improvement of academic performance.
- Assistance in managing academic progress during periods of severe personal or medical problems.
- Information on the regulations and requirements of the curriculum.
- Interface with other University services.

Specific Academic Advisors have been assigned to each year of studies (see Bodies and Committees of the Department). More information about the role of the Academic Advisor can be found at https://www.tex.unipi.gr/paroxes-pros-foithtes/sumvoulos-spoudwn/?lang=en.

Student Complaints and Objections Management

The Department of Industrial Management & Technology implements a Student Complaints and Objections Management Procedure with the main concern of systematically improving the quality of the provided educational and administrative.

For purely academic issues, students may address directly to the lecturers of the Department and/or the Department's Academic Advisor.

For complaints and objections that are not the responsibility of another body or committee (Student Advocate, Ethics Committee, Gender Equality Committee, Data Protection Officer), students of the Department have the right to address complaints or objections to the Student Complaints and Objections Management Committee of the Department.

The procedure is simple and involves the completion of the Complaint Form, which is available in hard copy from the Department's Secretariat and via the Department's website.

Electronic Services

Upon completion of registration in the Department, each student must activate his/her account in the URegister application in order to access his/her personal student account and the electronic services provided by the Department and the University. After registering in URegister, each user has access to the mypassword service, from where he/she can manage the account and the provided contact details.

The electronic services include the academic identity, the e-Secretariat, the eclass and the EVDOXOS TEXTBOOK MANAGEMENT SERVICE.

The University's premises are covered by a free wireless wi-fi network (ssid: unipi), to which anyone can connect to use Internet navigation services. Authorized users also have access to the Eduroam International Academic Network, which enables users from the global academic community to remotely and securely access the services provided by their academic institution. Use of the eduroam network requires the issue of a personal code.

The VPN (Virtual Private Network) service is offered to the entire academic community of University of Piraeus. It allows users, when connected to the Internet through alternative providers, to access services

available exclusively through the institution's network, such as using library subscriptions to access online journals and articles.

Microsoft Imagine is provided by Microsoft and gives students and faculty of the University of Piraeus the ability to download and use Microsoft software free of charge through their personal codes. The software distributed to the students through the Azure DevTools for Teaching service. Access to the service is provided to the students at http://dreamspark.unipi.gr/ through their personal codes. Microsoft Office 365 Education Plus software is also available to all students and staff of the University through https://delos365.grnet.gr, using their personal codes and the okeanos service, that offers free to innovative cloud computing services.

All eligible undergraduate first-year students can join the εύρυ-where BROADBAND INTERNET CONNECTION OF STUDENTS that concerns an action of the General Secretariat of Telecommunications and Post (GSRT) and the National Research and Technology Network (GRNET SA). More information is provided at https://www.eury-where.gr/.

More information on the above electronic services can be found at https://www.tex.unipi.gr/hlektronikes-uphresies/?lang=en.

Student Activities

Alongside academic studies, the University offers its members the opportunity to participate in cultural groups (theatre group, musical ensembles, contemporary dance group, literary circle), student associations (Plato, AIESEC, AEGGE, ESTIEM Local Group Piraeus), student groups and other activities. Information can be found on the University's main website and at the following https://www.tex.unipi.gr/undergraduate/drasthriothtes-foithtwn/.

Quality Assurance

The Department of Industrial Management and Technology recognizes quality as the primary means of achieving a high level of academic and research work. To that end, the quality culture of the Department is manifested by the commitment of its staff and its students. The academic and administrative staff of the Department work and collaborate in accordance with its values, embrace its vision and mission and contribute to the achievement of its strategic goals. They recognize and adopt good practices and participate in continuous improvement processes.

The quality policy of the Department, the vision, mission and quality strategy, the target setting and the planning of quality actions, the reports of internal and external evaluations, the academic accreditation proposal and the quality assurance certificate are posted at https://www.tex.unipi.gr/quality-assurance/?lang=en.

Evaluations play a crucial role in quality assurance in the Department, providing important information on the performance of the curriculum and the relevance of the educational activities. At the end of each semester, students are asked to evaluate the semester's courses by completing a questionnaire that includes sections on the course, learning outcomes, the instructor and adjunct faculty, labs and assignments, if any, as well as the course workload and the degree of student engagement with course activities. The results of the assessments are made public at the end of the semester on each course's website, and the summary report is made public annually on the evaluation website.

It should be noted that, apart from the evaluation of courses and lecturers, the Department annually evaluates its Internship and mobility programmes, student attendance and performance, satisfaction of lecturers and administrative staff, graduates and alumni. The results are made public on the evaluation website.

Employment Perspectives of Graduates

The curriculum of the Department equips students with the necessary knowledge and skills to work in many professional fields and jobs.

Graduates of the Department are registered with the Chamber of Economics and can work as senior managers in the private and public sector in economic and administrative sectors.

According to the results of the Graduate Absorption Study for the period 2019-2022, 46% of graduates enter the labour market within 12 months of graduating, while 73% find a satisfactory job within 36 months of graduating. Of those who declared themselves employed, 68.1% work in the private sector and 17.5% are self-employed or own a business.

In the domestic market, 34% of graduates are employed in industry (food & beverages, chemicals and pharmaceuticals, petroleum products, engineering & components), 32% of graduates work in services (logistics, banking, tourism, business consultants) and 24% went into other sectors (IT, shipping, etc.). Jobs are mainly in sales, accounting and procurement departments, as well as in production, promotion, human resources and research & development.

On the external market, 65% of graduates are employed in the European Union, of which 46% in industry (production supervisor, project manager, production planner, quality manager) and 38% in services (regulatory affairs specialist, strategy manager, risk analyst).

76% of graduates go on to postgraduate studies and 13% to doctoral studies.

Full-time Study Program

Curriculum courses are divided into compulsory (C) and elective (E).

1st Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
COMPUTER SCIENCE LABORATORY	C	3	2,5	P. Eirinakis, A. Geronti
ECONOMICS I	C	4	5,5	M. Tselekounis
FINANCIAL ACCOUNTING	C	4	5,5	G. Papanastasopoulos
INTRODUCTION TO COMPUTERS	C	4 (+2 tutorial course)	5,5	T. Tambouratzis, V. Kanellidis, A. Geronti
INTRODUCTION TO PHYSICAL SCIENCES	C	4	5,5	D. Sidiras, C. Siontorou
MATHEMATICS I	C	4 (+2 tutorial course)	5,5	M. Fillipakis, V. Kanellidis

2nd Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
E-BUSINESS AND MULTIMEDIA	C	4 (+2 tutorial course)	5,5	G. Chondrokoukis, V. Kanellidis, A. Pseftelis
ECONOMICS II	C	4	5,5	Th.M. Chletsos
INDUSTRIAL TECHNOLOGY LABORATORY	C	3	2,5	D. Sidiras, C. Siontorou, N. Chatzidai, A. Geronti
INTRODUCTION TO ENGINEERING MECHANICS	C	4	5,5	N. Chatzidai
MATHEMATICS II	C	4 (+2 tutorial course)	5,5	M. Fillipakis, V. Kanellidis
PROCESSES I	C	4 (+2 laboratory)	5,5	D. Sidiras,

				A. Geronti

3rd Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
CHEMICAL INDUSTRIES I	C	4	5,5	C. Siontorou
INDUSTRIAL MANAGEMENT	C	4	5,5	K. Kostopoulos
INTRODUCTION TO MECHANICS OF MATERIALS	C	4 (+2 tutorial course)	5,5	D. Karalekas, N. Chatzidai
PROCESSES II	C	4	5,5	D. Sidiras, A. Geronti,
STATISTICS	C	4	5,5	N. Rachaniotis
FOREIGN LANGUAGE	C	4	2,5	*Member of the Foreign Languages staff*

4th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
CHEMICAL INDUSTRIES II	C	4	5,5	D. Sidiras, C. Siontorou
COST ACCOUNTING	C	4	5,5	V. Zisis
DATA PROCESSING – PROGRAMMING-LANGUAGES	C	4 (+2 tutorial course)	5,5	T. Tambouratzis, V. Kanellidis A. Geronti
OPERATIONS RESEARCH I	C	4	5,5	*Academic Fellow*
PRODUCTION SYSTEMS DESIGN	C	4	5,5	N. Rachaniotis
FOREIGN LANGUAGE	C	4	2,5	*Member of the Foreign Languages staff*

5th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*

FINANCIAL MANAGEMENT I	C	4	5,5	D. Psychoyios
INFORMATION SYSTEMS	C	4	5,5	G. Chondrokoukis, V. Kanellidis, A. Pseftelis
OPERATIONS RESEARCH II	C	4	5,5	*Academic Fellow*
PRODUCTION PLANNING & CONTROL	C	4	5,5	D. Emiris
SUPPLY CHAIN MANAGEMENT	C	4	5,5	S. Moschouris
FOREIGN LANGUAGE	C	4	2,5	*Member of the Foreign Languages staff*

6th Semester

Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
ENGINEERING ECONOMICS	C	4	5,5	A. Flamos
ERGONOMICS	C	4	5,5	G. Giannatsis
PROJECT MANAGEMENT	C	4	5,5	D. Emiris
QUEUEING THEORY AND SYSTEMS SIMULATION	C	4	5,5	P. Eirinakis
PROCUREMENT & SUPPLY MANAGEMENT	C	4	5,5	S. Moschouris
FOREIGN LANGUAGE	C	4	2,5	*Member of the Foreign Languages staff*

7th Semester

Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
COMPUTER-AIDED PRODUCT DESIGN	C	4	5,5	G. Giannatsis
ENERGY TECHNOLOGIES & THE ENVIRONMENT	C	4	5,5	A. Flamos
QUALITY ASSURANCE AND CONTROL	C	4	5,5	P. Eirinakis

RESEARCH METHODOLOGY	C	3	2,5	C. Siontorou, A. Geronti,
SELECTION	E	*See the list of elective courses*		
SELECTION	E			

7th Semester Elective Courses

Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
ARTIFICIAL INTELLIGENCE	E	4	5,5	T. Tambouratzis
BUSINESS ANALYTICS	E	4	5,5	P. Eirinakis
ENERGY & CLIMATE POLICY	E	4	5,5	A. Flamos
ENVIRONMENTAL PROTECTION TECHNOLOGIES	E	4	5,5	*Academic Fellow*
INDUSTRIAL TRAINING I	E		5,5	*Industrial Training Office*
INTRODUCTION TO MODELLING, SIMULATION & OPTIMISATION OF SYSTEMS	E	4	5,5	*Academic Fellow*
MATERIALS SELECTION IN PRODUCT DESIGN	E	4	5,5	D. Karalekas, N. Chatzidai
NATURAL RESOURCES MANAGEMENT & THE ENVIRONMENT	E	4	5,5	D. Sidiras, N. Chatzidai
PROJECT I	E		5,5	*Supervising Faculty member*
RECYCLING: ECONOMIC AND TECHNOLOGICAL ISSUES	E	4	5,5	*Academic Fellow*
SPECIAL TOPICS IN SUPPLY MANAGEMENT	E	4	5,5	S. Moschouris

8th Semester

Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*

COMPUTER-AIDED PRODUCT MANUFACTURING	C	4	5,5	D. Karalekas, D. Emiris, N. Chatzidai
CONTEMPORARY TOPICS IN INDUSTRIAL MANAGEMENT AND TECHNOLOGY	C	3	2,5	S. Moschouris, I. Giannatsis, P. Eirinakis, N. Chatzidai
PRODUCT DEVELOPMENT AND INNOVATION	C	4	5,5	D. Karalekas
STRATEGIC MANAGEMENT	C	4	5,5	K. Kostopoulos
SELECTION	E	*See the list of elective courses*		
SELECTION	E			

8th Semester Elective Courses				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
BIOTECHNOLOGY	E	4	5,5	C. Siontorou
COMPUTATIONAL METHODS / TOOLS IN INDUSTRIAL MANAGEMENT	E	4	5,5	*Academic Fellow*
ENERGY TRANSITION & SUSTAINABILITY	E	4	5,5	*Academic Fellow*
FINANCIAL MANAGEMENT II	E	4	5,5	D. Psychoyios
INDUSTRIAL TRAINING II	E		5,5	*Industrial Training Office*
INTERNATIONAL MANAGEMENT	E	4	5,5	*Academic Fellow*
KNOWLEDGE AND CHANGE MANAGEMENT	E	4	5,5	K. Kostopoulos
MARKETING	E	4	5,5	*Academic Fellow*
PRODUCTION SYSTEMS INDUSTRY 4.0	E	4	5,5	*Academic Fellow*
PROJECT II	E		5,5	*Supervising Faculty member*

RISK MANAGEMENT IN PRODUCTION SYSTEMS	E	4	5,5	N. Rachaniotis
SPECIAL TOPICS OF ADVANCED MANUFACTURING TECHNOLOGIES	E	4	5,5	G. Giannatsis
SPECIAL TOPICS IN OPERATIONS RESEARCH	E	4	5,5	S. Sofianopoulou
TOTAL QUALITY MANAGEMENT	E	4	5,5	*Academic Fellow*
WEB BASED INFORMATION SYSTEMS	E	4	5,5	G. Chondrokoukis, A. Pseftelis

Part-time Study Program

Curriculum courses are divided into compulsory (C) and elective (E).

1st Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
COMPUTER SCIENCE LABORATORY	C	3	2,5	P. Eirinakis, A. Geronti
INTRODUCTION TO COMPUTERS	C	4 (+2 tutorial course)	5,5	T. Tambouratzis, V. Kanellidis, A. Geronti
MATHEMATICS I	C	4 (+2 tutorial course)	5,5	M. Fillipakis, V. Kanellidis

2nd Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
INDUSTRIAL TECHNOLOGY LABORATORY	C	3	2,5	D. Sidiras, C. Siontorou, N. Chatzidai, A. Geronti
MATHEMATICS II	C	4 (+2 tutorial course)	5,5	M. Fillipakis, V. Kanellidis
PROCESSES I	C	4	5,5	D. Sidiras,

				A. Geronti

3rd Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
ECONOMICS I	C	4	5,5	M. Tselekounis
FINANCIAL ACCOUNTING	C	4	5,5	G. Papanastasopoulos
INTRODUCTION TO PHYSICAL SCIENCES	C	4	5,5	D. Sidiras, C. Siontorou

4th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
E-BUSINESS AND MULTIMEDIA	C	4 (+2 tutorial course)	5,5	G. Chondrokoukis, V. Kanellidis, A. Pseftelis
ECONOMICS II	C	4	5,5	Th. M. Chletsos
INTRODUCTION TO ENGINEERING MECHANICS	C	4	5,5	N. Chatzidai

5th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
INTRODUCTION TO MECHANICS OF MATERIALS	C	4 (+2 tutorial course)	5,5	D. Karalekas, N. Chatzidai
STATISTICS	C	4	5,5	N. Rachaniotis
FOREIGN LANGUAGE	C	4	2,5	*Member of the Foreign Languages staff*

6th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*

DATA PROCESSING – PROGRAMMING-LANGUAGES	C	4 (+2 tutorial course)	5,5	T. Tambouratzis, V. Kanellidis A. Geronti
OPERATIONS RESEARCH I	C	4	5,5	*Appointed Lecturer*
FOREIGN LANGUAGE	C	4	2,5	*Member of the Foreign Languages staff*

7th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
CHEMICAL INDUSTRIES I	C	4	5,5	C. Siontorou
INDUSTRIAL MANAGEMENT	C	4	5,5	K. Kostopoulos
PROCESSES II	C	4	5,5	D. Sidiras, A. Geronti,

8th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
CHEMICAL INDUSTRIES II	C	4	5,5	D. Sidiras, C. Siontorou
COST ACCOUNTING	C	4	5,5	V. Zisis
PRODUCTION SYSTEMS DESIGN	C	4	5,5	N. Rachaniotis

9th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
OPERATIONS RESEARCH II	C	4	5,5	*Appointed Lecturer*
PRODUCTION PLANNING & CONTROL	C	4	5,5	D. Emiris
FOREIGN LANGUAGE	C	4	2,5	*Member of the Foreign Languages staff*

10th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
PROJECT MANAGEMENT	C	4	5,5	D. Emiris
QUEUEING THEORY AND SYSTEMS SIMULATION	C	4	5,5	P. Eirinakis
FOREIGN LANGUAGE	C	4	2,5	*Member of the Foreign Languages staff*

11th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
FINANCIAL MANAGEMENT I	C	4	5,5	D. Psychoyios
INFORMATION SYSTEMS	C	4	5,5	G. Chondrokoukis, V. Kanellidis, A. Pseftelis
SUPPLY CHAIN MANAGEMENT	C	4	5,5	S. Moschouris

12th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
ENGINEERING ECONOMICS	C	4	5,5	A. Flamos
ERGONOMICS	C	4	5,5	G. Giannatsis
PROCUREMENT & SUPPLY MANAGEMENT	C	4	5,5	S. Moschouris

13th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
ENERGY TECHNOLOGIES & THE ENVIRONMENT	C	4	5,5	A. Flamos
QUALITY ASSURANCE AND CONTROL	C	4	5,5	P. Eirinakis

SELECTION	E	*See the list of elective courses*

13th Semester Elective Courses				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
ARTIFICIAL INTELLIGENCE	E	4	5,5	T. Tambouratzis
MATERIALS SELECTION IN PRODUCT DESIGN	E	4	5,5	D. Karalekas, N. Chatzidai
SPECIAL TOPICS IN SUPPLY MANAGEMENT	E	4	5,5	S. Moschouris
TOTAL QUALITY MANAGEMENT	E	4	5,5	G. Giannatsis, A. Bousdekis

14th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
PRODUCT DEVELOPMENT AND INNOVATION	C	4	5,5	D. Karalekas
STRATEGIC MANAGEMENT	C	4	5,5	K. Kostopoulos
SELECTION	E	*See the list of elective courses*		

14th Semester Elective Courses				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
ANALYSIS TECHNIQUES FOR CONTEMPORARY PRODUCTION SYSTEMS	E	4	5,5	*Not offered this year*
BIOTECHNOLOGY	E	4	5,5	C. Siontorou
FINANCIAL MANAGEMENT II	E	4	5,5	D. Psychoyios
KNOWLEDGE AND CHANGE MANAGEMENT	E	4	5,5	K. Kostopoulos

WEB BASED INFORMATION SYSTEMS	E	4	5,5	G. Chondrokoukis, A. Pseftelis

15th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
COMPUTER-AIDED PRODUCT DESIGN	C	4	5,5	G. Giannatsis
RESEARCH METHODOLOGY	C	3	2,5	C. Siontorou, A. Geronti
SELECTION	E	*See the list of elective courses*		

15th Semester Elective Courses				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
BUSINESS ANALYTICS	E	4	5,5	P. Eirinakis
ENERGY & CLIMATE POLICY	E	4	5,5	A. Flamos
INDUSTRIAL TRAINING I	E		5,5	*Industrial Training Office*
NATURAL RESOURCES MANAGEMENT & THE ENVIRONMENT	E	4	5,5	D. Sidiras, N. Chatzidai
PRODUCTION SYSTEMS INDUSTRY 4.0	E	4	5,5	*Not offered this year*
PROJECT I	E		5,5	*Supervising Faculty member*

16th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
COMPUTER-AIDED PRODUCT MANUFACTURING	C	4	5,5	D. Karalekas, D. Emiris, N. Chatzidai

CONTEMPORARY TOPICS IN INDUSTRIAL MANAGEMENT AND TECHNOLOGY	C	3	2,5	S. Moschouris, G. Giannatsis, P. Eirinakis, N. Chatzidai
SELECTION	E	*See the list of elective courses*		

16th Semester Elective Courses				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
COMPUTATIONAL METHODS / TOOLS IN INDUSTRIAL MANAGEMENT	E	4	5,5	D. Emiris, A. Bousdekis
ENVIRONMENTAL PROTECTION TECHNOLOGIES	E	4	5,5	G. Giakoumakis
INDUSTRIAL TRAINING II	E		5,5	*Industrial Training Office*
INTERNATIONAL MANAGEMENT	E	4	5,5	*Not offered this year*
MARKETING	E	4	5,5	V. Kanellidis
PROJECT II	E		5,5	*Supervising Faculty member*
RISK MANAGEMENT IN PRODUCTION SYSTEMS	E	4	5,5	N. Rachaniotis
ROBOTICS AND MECHATRONICS	E	4	5,5	*Not offered this year*
RECYCLING: ECONOMIC AND TECHNOLOGICAL ISSUES	E	4	5,5	G. Giakoumakis
SPECIAL TOPICS IN OPERATIONS RESEARCH	E	4	5,5	S. Sofianopoulou, A. Geronti
SPECIAL TOPICS OF ADVANCED MANUFACTURING TECHNOLOGIES	E	4	5,5	G. Giannatsis

1ST SEMESTER

COMPUTER SCIENCE LABORATORY

P. EIRINAKIS, A. GERONTI

The course aims at introducing common office applications to the students and providing them with the corresponding, basic data analysis and presentation skills, which are required for completing educational/research exercises and assignments at several other courses.

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

- Understand and execute numerical, logical and statistical functions
- Use software capabilities to group, analyze, and visualize data through diagrams/charts and pivot tables
- Prepare electronic documents, reports and presentations for their assignments.

ECONOMICS I

M. TSELEKOUNIS

The course is an introduction to Economics and aims to familiarize students with the basic microeconomics. The lesson is organized and shaped in such a way that students understand the functioning of the markets, the decision-making processes of consumers and producers and their behavior in the markets.

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

- Demonstrate basic knowledge of microeconomics and understand basic concepts of economic science
- Highlight and study economic issues
- Explain how economic factors (individuals, households, enterprises, industry, governments, etc.) make decisions and choices
- Solve problems related to economic decisionmaking
- Explain the basic functions of an economic system
- Use microeconomic tools
- Develop critical thinking and skills in analysis and synthesis
- Understand the causes and analyze microeconomic phenomena on scientific terms

FINANCIAL ACCOUNTING

G. PAPANASTASOPOULOS

The course is an introduction to accounting and aims at familiarizing students with the elements that make up the assets of a business (Assets, Equity, Liabilities), as well as the elements that determine its financial result (Income, Expenses).

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

- Understand the difference between accounting and filling as well as their relation
- Identify the meaning and content of the financial statements, the categories of accounts and the notion of accounting event
- Discriminate between charge and credit in balance sheets
- Link and journalize transactions in balance sheets
- Comprehend the whole range of financial transactions
- Develop a double-entry method and understand how the enterprise assets change by accounting events

INTRODUCTION TO COMPUTERS

T.TAMBOURATZIS, V. KANELLIDIS, A. GERONTI

The course is an introduction to current computer sciences, with emphasis on networks, the internet and the worldwide web, the markup languages for websites, and the use of basic computing tools (excel) for data analysis and presentation.

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

- Demonstrate knowledge on basic computer architectures
- Demonstrate an understanding on the basic concepts of the internet and the worldwide web
- Design a webpage using HTML
- Interpret and represent data on various numerical systems
- Understand and execute logical and numerical operations
- Use Excel capabilities to group, analyze, and visualize data
- Demonstrate basic knowledge on algorithms, understand and monitor or/and develop simple algorithms in pseudo-code

INTRODUCTION TO PHYSICAL SCIENCES

D. SIDIRAS, C. SIONTOROU

The course is an introduction to physical sciences, scientific methodology and industrial production. The skills developed in the classroom are reinforced with case studies and exercises. The course consists of two (2) sections taught in parallel: section A΄ and section B΄. Section A΄ introduces students to the basic concepts of chemical industrial production while Section B΄ presents vector calculus and kinematics.

The main objective of the course is to provide students with basic knowledge that will help them in the technological courses of the curriculum. In particular, the course aims to familiarize students with: (a) basic principles and calculations in chemical engineering; (b) methods for determining critical parameters of physical and chemical processes to be used in modeling; (c) applying vectorial calculus to solving kinematics problems; (d) basic knowledge in curvilinear and relative motion.

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

- Solve mass balance problems in physical and chemical processes
- Use basic principles of chemical thermodynamics - kinetic

- Solve chemical equilibrium problems
- Use basic methods (computational and physical simulation) to study electrochemical systems
- Use vector calculus in the analysis of dynamic systems
- Solve curvilinear and relative motion problems by vector analysis
- Use models for basic industrial processes

MATHEMATICS I

M. FILLIPAKIS, V. KANELLIDIS

The main objective of the course is to familiarize students with the basic concepts of mathematics used in the other courses of the curriculum.

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

- Know and understand basic analysis method of mathematical analysis and linear algebra (indicatively: functions of one variable (continuity, differentiation, integration),, matrices, determinants, linear systems, inner product, characteristics values, linear systems-defining, vectors, eigenvalues / eigenvectors)·
- Choose the appropriate mathematical concepts and representations for each problem at hand. In addition to develop mathematical thinking and be able to analyze and adapt acquired knowledge for applications in the industry.
- Solve algebra problems (tables, linear systems-defining, vectors, eigenvalues / eigenvectors)
- Solve probability problems (combinatorial, reserved probability, independent events)
- Demonstrate the skills necessary to attend other courses of the curriculum with a computing part
- Formulate and solve computing problems using the mathematical tools taught in the course
- Know, handle and understand Mathematica, Matlab and Octave programs on applications of mathematical analysis and linear algebra for applications in the industry.

2ND SEMESTER

E-BUSINESS - MULTIMEDIA

G. CHONROKOUKIS, V. KANELLIDIS, A. PSEFTELIS

The course aims to introduce students to the administrative and business functions of the digital age and covers a wide range of administrative opportunities and risks in virtual markets. The course consists of the theoretical part (lectures) and the laboratory part.

During the course, students:

- Develop knowledge about e-business and e-commerce infrastructure, e-business management with new business models, etc.

- Acquire knowledge on e-business strategies, the development of competitive advantage online and the necessary organizational strategy (eg, change management, assimilation of e-business within the organization, etc.).
- Study the e-business environment - legal, ethical and security issues as well as marketing and advertising issues

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

- Understand the concepts of e-business and e-commerce
- Describe e-business and e-commerce technologies and analyze their significance in business
- Recognize emerging trends in online business models
- Describe the functions of an online business and the ways in which the information flows within it
- Design a successful business operation strategy
- Create value by properly managing knowledge in an online business
- Evaluate the techniques and strategies of e-marketing and online advertising
- Provide guidance in design, communication and leadership of change

ECONOMICS II

TH. M. CHLETSOS

The aim of the course is to provide students with basic knowledge on the measurement and the determination of fundamental economic parameters, as well as on the function of an economy.

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

- Demonstrate basic knowledge on the function of an economic system and on the use of macroeconomic tools for problem solving
- Understand the causes and analyze macroeconomic phenomena on scientific terms
- Use objective criteria to evaluate theoretical approaches and exploit macroeconomic analysis tools
- Study specific macroeconomic issues and make suggestions/proposals for solving specific problems
- Demonstrate adequate knowledge of the complex economic reality and its study
- Use macroeconomic tools to solve complex problems

INDUSTRIAL TECHNOLOGY LABORATORY

D. SIDIRAS, C. SIONTOROU, N. CHATZIDAI, A. GERONTI

The course involves laboratory practice as a continuation of the 1st course on Introduction to Physical Sciences. Its main goal is to familiarize students with scientific and research methodology. In the lab, students become familiar with the experimental and computational simulation of representative topics of modern industrial production.

The course is conducted in the Laboratory of Simulation of Industrial Processes. In particular, the course seeks to familiarize students with: (a) the basic principles of experimental design, (b) the basic principles and calculations in chemical engineering, (c) the modeling of industrial processes, (d) the methods of determining

critical parameters of physical and chemical processes for modeling; (e) simulation (physical and computational) and processing of results; (f) modeling, validation and modification of models using experimental results, (g) decision-making based on techno-economic criteria.

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

- Use the basic principles of chemical thermodynamics and kinetics to describe systems and solve problems
- Understand the concept of chemical equilibrium and solve related problems
- Describe systems of unit operations and unit processes and use basic methods (computational and physical simulation) to study them
- Use models for basic industrial processes
- Process experimental results and use them to configure, validate and modify models
- Use techno-economic criteria for decision making

INTRODUCTION TO ENGINEERING MECHANICS

N. CHATZIDAI

This course intends to introduce students to mechanics which provides the conditions of rest or movement of bodies that are stressed by external forces.

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

- Analyze force vectors in plane and space
- Obtain the centroid and determine equivalent force systems in two dimensions
- Construct equilibrium equations for determining reactions in plane frames
- Determine the internal forces in simple span trusses
- Can apply knowledge to any problem and demonstrate the skills necessary to attend other relevant courses of the curriculum

MATHEMATICS II

M. FILLIPAKIS, V. KANELLIDIS

The course is essentially a continuation of Mathematics I (1st semester) aiming at familiarizing students with the basic concepts of mathematics used in the other courses of the curriculum.

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

- Solve first-order differential equations
- Study applications of differential equations in engineering, thermodynamics, kinetics, etc., relevant to the other subjects of the curriculum
- Estimate the independent solutions of a differential equation
- Solve higher order differential equations as well as systems of differential equations
- To use proper integrals and Laplace transformations in problems of mechanics, thermodynamics, kinetics, etc

- Use the Lagrange multiplier method to optimize function under constraints
- Use double and triple integrals in engineering problems
- know the concepts of sequence, series of real numbers and be able to use Taylor series In order to attend the rest of the Department's courses with a computer part
- Demonstrate the skills necessary to attend other courses of the curriculum with a computing part
- Formulate and solve computer problems by using the mathematical tools taught in the course

PROCESSES I

D. SIDIRAS, A. GERONTI

The course aims to familiarize students with:

- The basic chemical processes and flow diagrams of representative manufacturing processes
- Scaling up from bench to pilot and industrial scale
- Scale economies and externalities in industrial combos
- Material and energy balances at steady and non-steady state conditions
- The chemical processes in environmental protection
- Material saving with recycling
- Energy saving with thermochemical and electrochemical systems
- The dynamic physicochemical systems, robustness, sensitivity, risk, economic and technical optimization
- The correlation between manufacturing parameters and product quality
- The optimization of production capacity
- Laboratory and simulation applications

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

- Solve mass balance problems at steady and non-steady state conditions
- Present basic processes in flow charts
- Solve chemical equilibrium problems
- Solve capacity optimization problems
- Problem solving in chemical production and environmental protection

3RD SEMESTER

CHEMICAL INDUSTRIES I

C. SIONTOROU

Prerequisites: INTRODUCTION TO PHYSICAL SCIENCES (1st sem.)

The course aims to familiarize students with production and products of the inorganic chemical industry: mining products, acids and fertilizers, ceramics, iron and steal, gases

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

- Demonstrate knowledge and handle the basic chemical technology concepts of industrial production of broad-use inorganic materials/products
- Use the methods presented for solving problems in inorganic systems
- Demonstrate knowledge on design and operational parameters of inorganic industry
- Handle the methods used in the determination of techno-economic production parameters for yielding products conforming to the required specifications

INDUSTRIAL MANAGEMENT

K. KOSTOPOULOS

Industrial Management focuses on the basic management operations and on the fundamentals of organizational behavior. The first part of the course analyzes the individual employee, with an emphasis on the personality traits, the values and the attitudes of the employee, as well as on different motivation and decision-making practices. The second part relates to the effectiveness of organizational teams, examining group dynamics, team leadership, and the specific conflict management and negotiation procedures. The final part investigates the corporation as an organizational system, focusing on design and division of labor issues, the contemporary organizational structures and on the importance of organizational culture. During lectures particular emphasis will be placed on the use of case studies, scenarios and role playing exercises in order to develop students' skills and their ability to apply different management theories and tools.

Using current literature, relevant case studies and audiovisual material, students will understand scientific concepts and will develop related skill regarding:

- The different perspectives of scientific management, the different types of corporations and organizations, as well as the basic management operations.
- The role and the traits of individual employees within modern corporations (attitudes, personality, values, decision making processes, motivation practices).
- The role and key performance features of teams as the basic unit within organizations (group dynamics, leadership styles and leadership behaviors, communication and conflict resolution processes).
- The nature of contemporary organizations as systems (organizational environment, principles of organizational design and novel organizational structures, organizational culture, control and performance appraisal practices).

INTRODUCTION TO MECHANICS OF MATERIALS

D. KARALEKAS, N. CHATZIDAI

Prerequisites: INTRODUCTION TO ENGINEERING MECHANICS (2nd sem.)

The aim of the course is to introduce students to fundamentals of mechanics of deformable materials and to the basic tools for stress, strain and deformation analysis. Methods for determining the stresses, strains and deformations produced by applied loads are presented.

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

- Analyze and design components and structural members subjected to tension, compression, torsion, bending and combined loads using fundamental concepts of stress, strain, elastic and inelastic behavior.
- Recognize the nature of a components loading, classify its response and determine where supplemental material can be found to aid in analysis of its response

PROCESSES II

D. SIDIRAS, A. GERONTI

The course aims to familiarize students with the basic concepts of unit operations involved in the production of goods. Special emphasis is given in fluid mechanics, thermodynamics and energy and mass balance.

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

- Solve mass balance problems in basic operations
- Solve energy balance problems in basic operations
- Compose the sequence of industrial unit processes used in the production of goods
- Solve material balance problems at steady state conditions in integrated industrial sub-systems
- Handle adequately fluid mechanics and thermodynamics issues

STATISTICS

N. RACHANIOTIS

Prerequisites: MATHEMATICS I (1st sem.)

The aim of the course is to introduce to the students the most important distributions of random variables and their parameters, the use of basic descriptive statistics and the use of statistical inference tools.

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

- Use probability distributions, descriptive statistics and statistical inference tools to draw conclusions about the properties of a population from the study of relevant samples
- Use and process quantitative data
- Use statistical tools in other courses of the curriculum

FOREIGN LANGUAGE

The course is designed to familiarize students with English, French or German terminology in their field of study and international environment.

4TH SEMESTER

CHEMICAL INDUSTRIES II

D. SIDIRAS, C. SIONTOROU

The course completes the 2nd semester course on "Chemical Industries I" with processes and products of the organic industrial branches. The course is presented in two sections. Section A΄ includes: coal, hydrocarbons, petroleum products, petrochemicals, polymers, textiles, dyes and explosives. Section B΄ includes: pharmaceutical products, biomolecules, fats, oils, soap, food and alcoholic beverages.

Case studies focus on topics of (a) chemical technology and flow charts (b) process operating parameters that influence the quality and properties of the final products, (c) water and materials saving, (d) industrial by-product exploitation and recycling, (e) environmental emissions.

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

- Demonstrate knowledge on the basic chemical technology concepts of industrial production of broad-use organic materials/products
- Use the methods presented for solving problems in organic systems
- Demonstrate knowledge on design and operational parameters of organic industry
- Design processes for the industrial production of organic materials/products
- Handle the methods used in the determination of techno-economic production parameters for yielding products conforming to the required specifications

COST ACCOUNTING

V. ZISIS

Cost Accounting is based on the concepts presented during the 1st semester course on Financial Accounting and deepens on specific financial accounting issues. This course is considered to be essential in the everyday application of different accounting practices but also in the understanding of the information given by the accounting numbers.

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

- Have broadened their horizons in the analysis of financial statements and the critical approach of accounting numbers and methodologies
- Be able to analyze different accounting methods of valuation and disclosure in the financial statements
- Be familiar with terms and conditions such as inventories, fixed assets and depreciation methods, securities, etc
- Have an overview of the entire accounting system and will be able to understand the procedures and rules for preparing the financial statements of large enterprises
- Be able to understand the importance of a large number of accounting figures in the financial statements of the enterprises

DATA PROCESSING – PROGRAMMING - LANGUAGES

T. TAMBOURATZIS, V. KANELLIDIS, A. GERONTI

The course aims to familiarize students with the basic concepts of programming and with the use of MATLAB for problem solving.

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

- Use MATLAB to solve problems (modeling, programming, optimization)
- Develop logic in their programs using the program commands and sequences
- Design programs based on functions
- Develop more sophisticated programs using tables and data structures
- Manage data files in their programs

OPERATIONS RESEARCH I

APPOINTED LECTURER

The aim of the course is to familiarize students with the basic concepts of decision making using Operations Research.

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

- Describe real decision making problems and determine the steps that they are going to use in order to solve these problems (problem modeling, methodological approaches and algorithms, interpretation of results, decision implementation)
- Describe how they will use the results of the problem data processing
- Identify previous cases that are relevant and can help solve the problem
- Analyze decision making problems and construct mathematical models describing them, taking into account all the parameters and constraints governing the problem of decision
- Choose and apply methodologies appropriate to each case to solve decision problems
- Use the right mathematical software and develop applications on the specific software tools to solve the problems
- Analyze the results of the solution of the mathematical model and propose the solution or solutions to the problem
- To argue for the choice of solution or decision

PRODUCTION SYSTEMS DESIGN

N. RACHANIOTIS

The "Production Systems Design" is part of the Operations Management and more specifically of Production Management, i.e. the science dealing with the concepts, problems and managerial methods of a basic production system. The manufacture of products or services is one of the main business functions (such as marketing and financial control). Production, directly or indirectly, involves many factors (employees, machines, materials, facilities, financial resources, customers, suppliers, etc.) and can take place at different locations, e.g. in factories that may even be in different countries. The involvement of numerous factors increases the complexity of problems related to planning, programming and production control. Their scientific analysis ensures their effective handling.

Decisions on production are an essential part of the operational decisions related to and affecting the structure and operation of the entire business. In particular, these decisions relate to and are affected by decisions concerning other functions. Such functions are, inter alia, the commercial function that links the business with demand and the financial function, which ensures the financial resources required for business

operation. Harmonizing the individual business divisions and management to achieve the best result for the business as a whole is the highest goal of the company's management.

The subject of Production Management includes aspects of planning, programming, control and, in general, the organization of factors and activities related to the production process, i.e., the process by which some resources (human labor, machinery, first materials, energy, information) are transformed into products or services (or contribute to their production).

The course examines the problems of Production Management concerning the design of production systems. In particular, the course focuses on making decisions about production with long-term implications for the system and its environment, which involve significant resources, i.e., strategic decisions. Such decisions are about what product or service will be produced, how much, where and how it will be produced, etc. In this context, the productive enterprise is conceived as a system consisting of elements that cooperate in an environment of opportunities and threats for a common purpose, while its individual functions are manifestations of a collective effort, related to each other. Knowing in particular the strategic issues that concern (or should concern) such a system, the problems that arise and the scientific way of approaching them, make the executive who possesses it a particularly useful factor for the survival and development of the business. These include product / service design, capacity planning, time study, site selection and layout planning.

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

- Have an insight into the key strategic planning issues of a production business
- Be familiar with basic tools and techniques for analyzing relevant issues
- Acquire a total / systemic view of the productive business
- Be able to design production systems (capacity, production location, production method, etc.)
- Be able to recognize the environmental parameters that affect the design of production systems
- Be familiar with the impacts of production on climate change

FOREIGN LANGUAGE

The course is designed to familiarize students with English, French or German terminology in their field of study and international environment.

5TH SEMESTER

FINANCIAL MANAGEMENT I

D. PSYCHOYIOS

The course will provide students the necessary knowledge and tools for solving specific problems that the modern business faces. It aims to present students issues concerning: investment assessments, business finance, capital cost, operational and financial leverage, capital structure. The presentation is geared to the data in the developed markets, especially the US and Europe, with extensive references made to the Greek reality.

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

- What are the roles and goals of Financial Management?
- What are the main financial functions of a business?

- What dividend policy should a modern business take and what is the excellent capital structure in the modern business environment?
- What investments should a company choose and finance?
- In what ways is it possible to measure the risk and profitability of an investment?

INFORMATION SYSTEMS

G. CHONDROKOUKIS, V. KANELLIDIS, A. PSEFTELIS

The aim of the course is to understand the information systems and their role in the modern organizations and also to understand the technologies for information management and the process of creating information systems to support entrepreneurship and business operations.

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

- Understand the role of information systems
- Understand the relationship between IT systems and business strategies
- Identify different types of information systems and online environments
- Understand the ethical and social issues related to information systems
- Describe the technologies that are the basic information infrastructure
- Design a website strategy to promote websites
- Use information systems to extract information, decision support and e-learning
- Design and build relational databases

OPERATIONS RESEARCH II

APPOINTED LECTURER

The aim of the course is to present the basic mathematical programming problems.

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

- Understand administrative problems as an optimization problem
- Understand the decision-making process
- Model with appropriate mathematical or graphical formulation various problems related to administrative and operational research
- Solve linear, integer and mixed integer programming problems.
- Use combined optimization to solve problems that are formatted using graphs.
- Use dynamic programming to resolve complex in formatting problems
- Interpret optimization results

PRODUCTION PLANNING & CONTROL

D. EMIRIS

Production Planning and Control examines the issues of organizing and controlling the operation of installed production systems and, in particular, the analysis and solving short and long-term production and supply chain problems that are both tactical and operational. It is a core course in the Department's curriculum. It combines economic and technical approaches in a single logic and combined with the course "Production Systems Design" provides the knowledge of the overall management of industrial operation from the short to the long term.

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

- Define the concept of production management and understand how it is applied to enterprises that manufacture products and/or provide services
- Assess factors and decision making mechanisms in production
- Plan and control the production process
- Quantitate material requirements standards and production capacity
- Understand the concepts of modern inventory management methods
- Identify the critical performance points of the production process and be able to manage any deviations from production patterns
- Manage time and aggregate planning issues
- Manage basic project management issues
- Use the cognitive background of the course in their future careers in areas such as: logistics, project management, sales & marketing, product development, production systems, ERP

SUPPLY CHAIN MANAGEMENT

S. MOSCHOURIS

Supply chain management is the management of the acquisition, transformation and delivery processes that enable and direct the flows of products and services -as well as the supporting reciprocal flows of information and funds –along a chain leading from the sources of the original inputs up to the end customers, all aimed at achieving the best possible customer service at the lowest possible cost.

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

- Understand the critical impact of supply chain management on the financial performance and sustainability of a business
- Understand the structure of supply chains and the different ways in which supply chains can become competitive on the market
- Use the logistics strategy to improve the business
- Analyze the importance of added value and suggest actions to enhance value creation
- Identify the strengths of international logistics in a global market
- Assess the risks of loss of focus on meeting the demand of the end customer
- Formulate and combine efficiently different choices regarding inventory management and orders on a case-by-case basis

- To properly develop the process of organizing and carrying out the processes related to transport and distribution

FOREIGN LANGUAGE

The course is designed to familiarize students with English, French or German terminology in their field of study and international environment.

6TH SEMESTER

ENGINEERING ECONOMICS

A. FLAMOS

This course deals with the main techno-economic parameters which affect the viability of a technological system (technological change, technology diffusion, learning, etc.) and analyzes methodologies and economic decision-making tools.

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

- Recognize the principles of Engineering Economics and identify the critical techno-economic parameters of a system
- Evaluate the economic viability of a system
- Choose the best alternatives for their companies and organizations
- Depending on their position in a company, develop well documented recommendations or make informed decisions regarding the aforementioned issues

ERGONOMICS

G. GIANNATSIS

Ergonomic knowledge is essential both in our professional and everyday life. This course introduces the capabilities and limitations of the human body and the way this knowledge can be used in product design & development for creating products that are both easy to use and attractive, as well as in workplace design for accomplishing high levels of work productivity and occupational safety. In this context, the course analyses elements of the structure and function of the human body and the factors that harm it, while providing advice on the prevention of occupational accidents and occupational diseases that improve the everyday life of the human being. To better understand the human decision-making process and our cognitive limits part of the course focuses on basic cognitive processes and the basic function/characteristics of associated systems such as the brain, sensory organs and the musculoskeletal and nervous system. Processes associated with human energy production and consumption through physical activity are also discussed.

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

- Demonstrate knowledge on the basic ergonomics methods and applications
- Understand and manage occupational safety issues
- Use the basic ergonomic analysis tools and ergonomic design techniques for products, jobs and workplaces

PROJECT MANAGEMENT

D. EMIRIS

The course involves the study and practical training in Project Management, through the unified study of projects from their conception to their completion. It examines cognitive areas, methodologies, tools and approaches to Project Management. The stages of initial project evaluation and selection are presented at first, as well as the need to align projects with the business strategy. Then, the complete project management plan is presented step-by-step, including statutes, management plans of the physical object, time and cost, and risk management. Throughout the course, specialized techniques complementing the cognitive domains are presented, while the techniques are applied to indicative projects supported by appropriate software (MS Project). The course has a practical orientation as it studies real cases and is centrally located in the curriculum.

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

- Demonstrate knowledge on the necessary basic concepts, methodologies and techniques of modern project management so that they would have no problem when dealing with a project
- Understand the need to harmonize project management with the strategy, values and goals of an organization as well as the multidimensional impact that projects have on the overall environment
- Be familiar with the most widely and globally accepted techniques and standards that facilitate project management and are the common international language of understanding on these issues
- Present the methodological framework for the selection, development, execution and monitoring of projects
- Demonstrate sufficient training in PM processes and be able to deepen in their study
- Demonstrate an incentive for professional PM certification

QUEUEING THEORY AND SYSTEMS SIMULATION

P. EIRINAKIS

The subject of the course is the introduction to Classical Queueing Theory and Simulation Methods. In Queuing Theory, the basic concepts are presented, with emphasis on the structural characteristics of the systems, the evaluation of their effectiveness and their practical applications. The course presents Poisson processes and systems with one or more service stations, infinite or finite population and infinite or finite waiting positions. For presenting the analytical relationships, emphasis is given on the way these arise from Markov's general equilibrium relations and Little's Law.

Simulation introduces the basic concepts, definitions and the central concept of discrete events simulation methods through many examples. The course presents the methods of generating random numbers and the "dimensions" of the simulation (based on a fixed time step, events, entities, etc.). The course includes the demonstration of software use, with the main aim of recognizing the basic concepts and definitions that have been discussed theoretically and in exemplary tables.

Within the course, through many examples and its successful completion, the student becomes familiar with the theory and the basic concepts, so that he/she can:

- Identify in practice the problems that can be addressed by either Queueing Theory methods or Simulation methods, analyze their structure and characteristics, and identify the requirements in data and parameters

- Easily learn any Queueing and Simulation Analysis software, having understood the theoretical and conceptual framework.
- Proceed to deepening stochastic processes in industrial processes

PROCUREMENT & SUPPLY MANAGEMENT

S. MOSCHOURIS

Supply management constitutes the body of integrated activities that focuses on the acquisition of materials, equipment, and services needed to reach organizational goals. It has the responsibility to plan, implement, and manage the internal and external dimensions that constitute the supply system of an enterprise or a non for profit organization.

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

- Demonstrate knowledge on basic thematic units of supply management
- Apply the methodologies presented to address problems arising from the acquisition of materials and services by businesses and organizations

FOREIGN LANGUAGE

The course is designed to familiarize students with English, French or German terminology in their field of study and international environment.

7TH SEMESTER

COMPUTER-AIDED PRODUCT DESIGN

G. GIANNATSIS

The course introduces students to the design of products/assemblies/machines and to modern design concepts such as Design for manufacturing & Assembly. The importance of design and the connection to modern automated production methods are also presented. Following the theoretical introduction to product design, elements of technical/engineering drawing and basic functions of CAD (Computer Aided Design) software are briefly presented. Modern techniques and tools for the geometric data representation and processing that are employed in modern CAD software are, also, presented in detail. Besides the theoretical analysis, students are systematically trained in product design using industry-leading mechanical CAD packages such as Pro-Engineer software. The course presents to students the potential of modern CAD tools and trains them to their use so that they would be able as future executives of industrial enterprises to perform bid evaluations, select the appropriate hardware/software for CAD/CAE, efficiently incorporate CAD/CAE systems in industrial operation etc.

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

- Demonstrate knowledge on the capabilities of modern CAD tools
- Use modern CAD tools so that, as f as future executives of industrial enterprises, they can participate in tender evaluation, in selection of corresponding products, drafting specifications for CAD software supplies, etc.

- Demonstrate knowledge on the engineering processes and techniques and the ways in which they are linked to production
- Demonstrate knowledge on the basic mathematical background of industrial design and product analysis technologies
- Demonstrate knowledge on production planning methodologies (DFM-DFA)
- Demonstrate knowledge on the nature and codes of the engineering plan

ENERGY TECHNOLOGIES & THE ENVIRONMENT

A. FLAMOS

The energy system includes the infrastructure for the conversion of primary energy sources into energy forms that can be transferred, distributed, stored and utilized by the end used. The most important elements of an energy system relate with its infrastructure, size and structure of its subsectors as well as the type and use of different energy forms in it. In the above framework, this course presents the structure of the energy system, the parameters that affect its evolution and basic approaches of evaluating its "quality".

Aim of the course is to develop the appropriate knowledge base that will allow graduates to:

- Identify potential opportunities of green economy (improvement of the efficiency of conventional systems, exploitation of renewable energy, energy policy instruments)
- Evaluate them
- Choose the best options for their companies and organizations
- Develop well documented recommendations or take informed decisions (depending on their position) regarding the above mentioned issues.

QUALITY ASSURANCE AND CONTROL

P. EIRINAKIS

Prerequisites: STATISTICS (3rd sem.)

The aim of the course is to familiarize students with the concept of quality assurance in process systems as well as the implementation of quality management standards. Students are also trained in the use of statistical quality control tools, such as control maps, average values and variations, defect rates and number of defects, as well as in the assessment of quality indicators.

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

- Understand the terms of quality and its characteristics
- Demonstrate knowledge on the basic principles of statistics and probabilities
- Create, process and evaluate quality control charts
- Understand sampling principles
- Apply quality assurance systems to production systems according to ISO 9000 standards series

RESEARCH METHODOLOGY

C. SIONTOROU, A. GERONTI

The aim of the course is to familiarize students with the main concepts of research methodology, the basic know-how for the drafting of small-scale scientific projects and the usual techniques and software used in writing, searching, results processing, data acquisition, referencing, categorization, etc. Also, students will develop the necessary skills to meet the requirements of structure, content, bibliography, appearance and presentation of a scientific work (paper, literature review, thesis, technical text, etc.).

Using examples, case studies and relevant audiovisual material, students will be able to understand scientific texts as they develop skills related to:

- the use of language as the primary and essential communication tool with which scientific knowledge is transmitted from the author to the reader
- the formulation of the problem to be investigated and the hypotheses regarding the possible causal factors that contribute to the problem, the decomposition of the problem into sub-units and parameters, the determination of the study limits regarding the problem and the methodological approach of the sub-units and parameters of the problem
- search techniques for data, knowledge and information
- the evaluation of bibliographic sources and data
- the effective use of IT tools (search software, results processing, data presentation, referencing and citations).
- the drafting and elaboration of a small-scale project (data/information search, organization of data/information, presentation, documentation, inference)
- writing texts in a scientifically correct way, presenting/analysing the topic of the work in all its pre-defined dimensions
- the application of ethics and morality in writing
- the documentation of the work so as to contribute to the advancement of knowledge on the subject presented
- the oral presentation of scientific work and/or technical study
- the organization, coordination and elaboration of group work (planning, assignment of roles, schedules, style harmonization, presentation)

Elective Courses

ARTIFICIAL INTELLIGENCE

T. TAMBOURATZIS

The course presents the possibilities and perspectives of artificial intelligence as it analyzes a series of core issues such as problem representation, problem solving techniques, use of logic in problem solving, mechanical learning and optimization.

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

- Demonstrate knowledge on basic issues of artificial intelligence
- Be familiar with the use of knowledge representation methods with propositional and categorical logic, as well as with retrospective rules
- Demonstrate knowledge on the basic structures of search algorithms

- Have developed basic intelligent agent programming plans
- Know in depth the features of an expert system
- Be trained in programming

BUSINESS ANALYTICS

P. EIRINAKIS

Every product and service, but also every project, production process, business operation, consumer behavior, etc. generates an abundance of data. This data is a wealth of knowledge that is often completely untapped. Modern companies, having fully understood the value that this knowledge can give to an organization, are increasingly turning in the direction of collecting and exploiting the data they have at their disposal. This course provides through practical training (using MS Excel) the fundamental tools, methodologies and techniques for the preparation, enrichment, analysis and investigation of data, but also for predicting the future course of critical quantities. In this way, business analytics allows the timely diagnosis of trends and the recognition of opportunities, thus supporting project management as well as in general the making of operational and strategic decisions.

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

- Understand the potential of data analytics in business applications.
- Know the fundamentals of statistics and data analytics required for business analytics.
- Use different data sources, including data sources for big data.
- Create dynamic data analysis and presentation of results tools using MS Excel.
- Familiarize with searching "open" datasets.

ENERGY & CLIMATE POLICY

A. FLAMOS

Integrated study of energy systems requires knowledge of their impact on the environment, and in particular on the aggravation of the greenhouse effect, which is constantly subjected to new binding decisions with a direct impact on their structure and development. These binding decisions have a significant impact on industry. Under these circumstances, industry needs to respond to appropriate technology choices, energy resource management and the use of appropriate energy and climate policy tools to maintain its competitiveness. In this context, this course analyzes the basic policy tools (tariff subsidies, application of standards, certificates, emissions trading, etc.) and examines the interactions resulting from their implementation.

The objectives of the course are to develop the appropriate cognitive background in designing and implementing key energy and climate policy tools that will allow graduates to:

- Understand the evolution of the wider energy and climate policy framework at national, European and international level
- Understand the design features and the operation of key energy and climate policy tools
- Evaluate the available policy tools in terms of effectiveness, efficiency and the potential for their exploitation by businesses and organizations

ENVIRONMENTAL PROTECTION TECHNOLOGIES

G. GIAKOUMAKIS

The course presents issues related to: natural resources categorization, analysis of renewable and non renewable sources, categorization of waste, qualitative and quantitative composition of wastes, solid waste management (collection and transportation, reduction at source, recycling, composting, incineration, waste disposal sites), wastewater management (physical, chemical, biological water quality parameters), general principles of wastewater processing (primary, secondary, tertiary processes), detailed description of wastewater processes (chemical sedimentation, electrodialysis, ion exchange, recovery by evaporation, adsorption) and special emphasis given to adsorption and the use of adsorptive materials as well as to simulation – modeling of adsorption processes. The course also presents air pollution and air quality (measurement units, sources of pollutants, air pollutants classification, air pollution control methods), European and national policy framework with emphasis on the Waste Framework Directive and its recent national harmonization, waste management and climate change. In addition, Environmental Management Systems (ISO 14001, EMAS, Environmental Management System Certification Process) are described, while case studies of Greek Enterprises certified according to the Environmental Management Standards are presented.

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

- To distinguish waste into categories based on their qualitative and quantitative composition
- Demonstrate knowledge on issues of solid waste and wastewater management
- Evaluate solid waste treatment methods
- Manage wastewater
- Evaluate wastewater treatment methods
- Demonstrate knowledge on adsorption technologies and adsorbents
- Use simulation - modeling in adsorption processes
- Demonstrate knowledge on issues of pollution and air quality
- Select recycling and energy saving methods
- Demonstrate knowledge on environmental management systems
- Implement Environmental Management Standards to Greek Enterprises

The course aims to provide students with the basis for their further, professional or academic, specialization in this rapidly developing subject.

INDUSTRIAL TRAINING I

INDUSTRIAL TRAINING OFFICE, G. GIANNATSIS

The course enables 4th year students to gain experience with workplaces, to acquire new knowledge, to participate actively in teamwork and in decision making, to develop their skills, to participate in the planning and completion of projects and to gain work experience.

In addition, the participation of students in the program enhances the Department's linkage to the market and contributes to the development of cooperation networks.

Also, Industrial Training is an appropriate means of assessing the students' cognitive background and skills in order to (a) enable students to take appropriate actions to improve their career prospects and (b) enable the Department to make appropriate interventions in order to improve the teaching processes.

More information can be found at https://praktiki.unipi.gr/index.php/tmhmata/vdt.

INTRODUCTION TO MODELLING, SIMULATION & OPTIMISATION OF SYSTEMS

APPOINTED LECTURER

The course "Introduction to Modeling, Simulation, and Optimization of Systems" aims to introduce students to methods of modeling, simulation, and optimization of physical systems and processes. Students will acquire skills to develop mathematically equivalent systems of various fields of engineering, energy, and economics. Through simple applications, the course aims to understand basic concepts and properties of various modeling and simulation methods (e.g., analytical models, numerical models, statistical models, etc.). In addition, students will be exposed to common categories of software for model development (e.g. Excel, MATLAB, scripting languages) gaining experience in running simulations and analyzing their results. To this end, the course will include hands-on simulation laboratory hours, during which students will be responsible for developing, configuring and running simulations, as well as presenting the induced conclusions.

MATERIALS SELECTION IN PRODUCT DESIGN

D. KARALEKAS, N. CHATZIDAI

The course aims to introduce students to the principles to be considered in order to select one or more materials when designing a product or a group of products. In addition, the dual role of materials, ie the need to be functional from a technical point of view, but also to create the properties of the product, will be emphasized.

The aim of the course is to provide students with basic knowledge to help them to:

- Understand the materials and their production processes
- Understand the properties of the materials
- Choose the materials that best meet the design requirements
- Familiarize themselves with tools for comparing and selecting materials

NATURAL RESOURCES MANAGEMENT & THE ENVIRONMENT

D. SIDIRAS, N. CHATZIDAI

The course presents topics related to: natural resources categorization, renewable and non renewable energy resources, reserves, depletion time, conventional energy sources and environmental impact (coal, lignite, oil, natural gas), energy consumption and environmental impact, increasing energy consumption scenarios, necessity for developing alternative energy sources, types of renewable resources, economy and the environment, the material balance model, resources flow, the recovery of raw materials, subsidy, multicriteria analysis, break-even point, presentation of the methods for life cycle analysis and life cost cycle, biomass

exploitation and biomass energy, presentation and analysis of the carbon footprint and water footprint concepts in Greek enterprises. Many case studies from Greek enterprises are presented.

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

- Effectively manage natural resources
- Provide definitions, distinguish and analyze the categories of natural resources
- Examine the technical and economic dimension of natural resource management
- Provide various ways for exploiting natural resources and present their correlation with environmental parameters
- Use inventory depletion models, dead-end analysis and multicriteria analysis
- Demonstrate knowledge on methodologies for the recycling and recovery of waste biomass
- Demonstrate knowledge on industrial / energy / environmental use of natural resources

PROJECT I

SUPERVISING FACULTY MEMBER

The courses “Project I” (winter semester) and "Project II" (spring semester) form a single activity that lasts one academic year, equivalent to 11 ECTS. This elective is only available to four-year students who have successfully completed at least 30 courses during their previous years of study. Within the framework of this activity, the student, under the supervision of a faculty member of the Department studies a research topic. He/she is guided and supervised in the search, study and evaluation of bibliography, in the composition and writing of the report, as well as in the oral presentation of the report.

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

- Have studied in depth a specific topic from the scientific domains of the Department
- Have used their relevant knowledge acquired during their studies
- Have developed a skill for synthesis
- Have learned to search for appropriate scientific information from the relevant scientific literature
- Have acquired skill in writing a scientific text
- Have acquired competence in organizing and presenting the topic of the work
- Have gained experience in the research process
- Have gained experience in laboratory research (if the project concerns laboratory work)

RECYCLING: ECONOMIC AND TECHNOLOGICAL ISSUES

APPOINTED LECTURER

The course introduces students to modern methods, technologies and systems for recycling and their application for environmentally friendly waste management in the context of sustainability, environmental protection and saving of natural resources and energy. Particular emphasis is placed on the interdisciplinarity of the subject, as well as on critical social and economic parameters.

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

- Choose the appropriate recycling technology based on techno-economic and social criteria
- Draw basic mathematical models to describe the different processes
- Evaluate and utilize alternative waste-management models

SPECIAL TOPICS IN SUPPLY MANAGEMENT

S. MOSCHOURIS

The course presents special issues of supply management. The integrated approach to these issues makes a decisive contribution to solving many of the problems that modern business faces.

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

- Understand basic procurement principles, such as globalization, e-procurement, etc.
- Understand the use of information systems in supply
- Demonstrate knowledge on the basic principles of negotiating with suppliers and can effectively handle related situations
- Demonstrate knowledge on key elements of contracts (training, pricing, etc.)
- Handle supply and supply contracts
- Understand issues related to capital equipment purchasing

8TH SEMESTER

COMPUTER-AIDED PRODUCT MANUFACTURING

D. EMIRIS, D. KARALEKAS, N. CHATZIDAI

In the context of the present course, the student is introduced to the Computer-Aided Manufacturing (CAM) tools and techniques for the discrete manufacturing sector. The first section of the course is dedicated to the presentation of basic manufacturing processes, emphasizing the family of cutting processes and machining. The introductory section is followed by a presentation of the Computer Numerical Control (CNC) technology and of the APT programming language. From an organizational point of view, the basic characteristics of Group Technology and Flexible Manufacturing Systems are discussed. The final section of the course examines the field of Additive Manufacturing/3D Printing which is the most recent development in the field of Computer-Aided Manufacturing.

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

- Will have been trained on basic machining
- Will be familiar with the technologies used to assist production using PC and CAM systems.
- Will be more aware of the basic manufacturing technologies
- Will be familiar with modern prosthetic and 3D printing technologies as well as the capabilities they offer

CONTEMPORARY TOPICS IN INDUSTRIAL MANAGEMENT AND TECHNOLOGY

M. MOSCHOURIS, G. GIANNATSIS, P. EIRINAKIS, N. CHATZIDAI

The aim of the course is to draw students' attention to a variety of issues related to the practical application of Advanced Technologies and Management Methodologies that govern modern Industries and Production Units.

In the previous semesters, the students have been presented / taught and have acquired (mainly theoretical) knowledge in the basic methodologies of Management Science as well as in the basic Technologies of modern Production Systems. This course complements the above scientific background by presenting to students the application of the previously taught techniques in practice, by means of lectures / speeches / reports on certain real problems / case studies faced by various (industrial) companies. These presentations will be carried out by invited executives of relevant companies and / or leading researchers, academics, etc.

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

- will become familiar with the present-day industrial environment and the challenges it faces
- will study in depth problem analysis and problem solving
- will successfully apply the techniques taught in real situations

PRODUCT DEVELOPMENT AND INNOVATION

D. KARALEKAS

This course is an introduction to modern product design and development processes. The course covers the major aspects of product development: Product Planning, Customer Needs, Product Specifications, Concept Generation, Concept Selection, Concept Testing, Product Architecture, Industrial Design, Prototyping, Design for Safety, Design for Environment, and Intellectual Properties. Most of the principles that are presented concern mainly products but can also be applied to services or software products. Particular emphasis is given to capturing customer needs and converting them into product design and development specifications. During the weekly lectures, relevant case studies are presented and analyzed, while students are asked to complete a project related to the study of the development of a product based on the topics covered in the course.

Using up to date bibliography, case studies and relevant audiovisual material, students will develop skills regarding:

- Their capabilities in designing and developing new innovative products
- The coordination of numerous projects and interdisciplinary teams for achieving the common purpose called "final product"

STRATEGIC MANAGEMENT

K. KOSTOPOULOS

This course studies the competitiveness of modern enterprises as a result of their capacity to analyze their internal and external environment, to set goals, and to design and implement strategies for achieving sustainable competitive advantage. The aim is to understand the basic concepts and theoretical approaches of strategic management, the tools for analyzing the internal and external organizational environment, as well as to specify effective corporate and competitive strategies. Further, the different strategy implementation, evaluation and control choices will be examined. During lectures various case studies and experiential exercises will be used with an aim to develop students' skills and their ability to understand and apply theories of strategic management.

Using current literature, relevant case studies and audiovisual material, students will understand scientific concepts and will develop related skill regarding:

- The different approaches of strategic management and related practices of implementing business strategies
- The techniques and tools for analyzing firm's external and internal environment
- The processes of developing strategies at the corporate and business level of analysis
- The methods of implementing, assessing and controlling firm strategies

Elective courses

BIOTECHNOLOGY

C. SIONTOROU

Emerging technologies in the areas of medical, environmental and molecular biotechnology will be discussed in the context of their potential impact on the directions of current products and services, product development, research techniques, and manufacturing processes. Through lectures, laboratories and a team project, students will gain an understanding of the biotechnology concepts and tools and how the rapidly evolving background science is being commercialized to advance global social, economic and environmental development.

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

- Understand the extent and significance of worldwide biotechnology industry
- Use the science and technology that supports the main biotechnology sectors
- Acknowledge the possibilities granted by biotechnology for the production of goods
- Understand bioethical issues
- Demonstrate knowledge on the policy making process in national and international level
- Use the biotechnology methods and tools so that to work in this sector after their graduation
- Manage quality systems and food safety
- Understand, from the managerial viewpoint, the tradeoff between innovation and investment risk in the biotechnology sector
- Understand and manage biosafety issues

Upon successful completion of the laboratory part, students will be able to:

- Construct and use models for the quality control of biotechnology products
- Treat and evaluate lab results from the control of materials of biological origin (enzyme kinetics, biosensor monitoring, simulation of bioprocesses, measuring of environmental parameters, molecular modeling)

COMPUTATIONAL METHODS/TOOLS IN INDUSTRIAL MANAGEMENT

APPOINTED LECTURER

The aim of the course is to familiarize students with the implementation and use of basic computational

methods and tools for industrial management. The course focuses on descriptive, predictive, and prescriptive analytics methods with the use of machine learning algorithms and on their integration for solving modern industrial problems. Specific focus is given on the implementation of such methods with the use of the Python programming language. Python offers a plethora of libraries that can be used to build such computational tools for solving real-life scenarios. In the context of this course, students will become familiar with basic use of Python, as well as with libraries for data analytics that can be combined to solve complex problems.

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

- analyze an industrial case study and choose the appropriate computational tools and methods;
- design a computational method which combines various machine learning algorithms for data analytics;
- apply a computational method and use existing tools for descriptive, predictive, and prescriptive analytics;
- expand their ability to use Python and understand the basic programming principles along with Python's sophisticated functions.

ENERGY TRANSITION & SUSTAINABILITY

APPOINTED LECTURER

The course "Energy Transition and Sustainability" approaches energy transitions from multiple perspectives to discover the opportunities and barriers of different transition strategies for sustainable development. The goal is for students to be able to identify and explain the unintended consequences of energy transitions, as well as ways to address them in order to achieve a sustainable energy transition. Relevant issues include, but are not limited to, changes in land use from the installation of renewable energy sources (RES) and the rehabilitation of former lignite sites, feedstock use and end-of-life management of RES and storage systems, unequal distribution of the benefits of the energy transition, restructuring of the electricity market (creation of new markets and professions versus economic pressures on existing energy industries), etc. Through interactive and group work, students will be asked to identify the challenges and opportunities offered by different transition strategies, focusing on aspects such as sustainability, social justice and environmental impacts. In this way, students will acquire decision-making skills under uncertainty, making them useful managers in business and decision-makers.

FINANCIAL MANAGEMENT II

D. PSYCHOYIOS

This course provides an advanced coverage of the principles of investment analysis and wide ranging topics in portfolio management. It aims to bring state-of-the-art practices in the finance industry to the classroom and supplement it with theories and recent empirical findings in this area.

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

- Understand the functioning of the financial system and the money and capital markets
- Demonstrate knowledge on the financial products that exist and their usefulness
- Calculate the "fair" price of a share or bond
- Assess whether and to what extent it is possible to predict the course of the Stock Exchange
- Demonstrate knowledge on the basic principles of portfolio theory
- To measure the risk and performance of a security or portfolio

INDUSTRIAL TRAINING II

INDUSTRIAL TRAINING OFFICE, G. GIANNATSIS

The course enables 4th year students to gain experience with workplaces, to acquire new knowledge, to participate actively in teamwork and in decision making, to develop their skills, to participate in the planning and completion of projects and to gain work experience.

In addition, the participation of students in the program enhances the Department's linkage to the market and contributes to the development of cooperation networks.

Also, Industrial Training is an appropriate means of assessing the students' cognitive background and skills in order to (a) enable students to take appropriate actions to improve their career prospects and (b) enable the Department to make appropriate interventions in order to improve the teaching processes.

More information can be found at https://praktiki.unipi.gr/index.php/tmhmata/vdt.

INTERNATIONAL MANAGEMENT

APPOINTED LECTURER

The course aims at understanding the dimensions of management science in the international environment, by analysing the incentives and advantages arising from the process of internationalisation of firms, the strategies of entry into international markets, the theories of international trade, the importance of the mechanisms of cooperation and control of operations of the internationalised firm, as well as the role of subsidiaries and their importance for the development of the host countries. Through a combination of interactive exercises, case studies, analysis of journal articles, audiovisual materials, and a group project, the course will help students to identify the key cultural, political, economic and technological developments affecting the internationalization of industrial firms and to evaluate opportunities and risks for managers in an international environment.

KNOWLEDGE AND CHANGE MANAGEMENT

K. KOSTOPOULOS

This course examines organizational knowledge as one of the most important resources of modern corporations, playing a pivotal role in the successful implementation of organizational change and in the achievement of sustainable competitive advantage. This course, therefore, aims at understanding and applying concepts and management practices that refer to the effective acquisition, processing, and use of knowledge resources in a way that allows organizations to learn, innovate, and adapt to changes occurring in their internal and external environment, and achieve high performance. The different stages and processes of managing organizational change will also be analyzed. During lectures various case studies and experiential exercises will be used with an aim to develop students' skills and their ability to understand and apply theories of knowledge and change management.

Using current literature, relevant case studies and audiovisual material, students will understand scientific concepts and will develop related skill regarding:

- The different approaches towards managing organizational knowledge and the corresponding practices of knowledge-based projects within modern organizations

- The role and characteristics of current knowledge-based organizations
- The interrelationship between knowledge resources and organizational learning, and the management of tensions and (seemingly) conflicting strategic goals
- The processes and stages of change management and practices of managing resistance to change

MARKETING

APPOINTED LECTURER

This course adopts the view that Marketing is a holistic process, which includes the planning, development, and pursuit of programmes, processes and activities that may drive a firm's vision, mission, and strategic planning. In this class, students will be challenged to understand Marketing's responses to important questions contemporary firms need to tackle with such as "Which needs do we fulfil?", "Which customers do we need?", "Which products or services should we offer?", "How do we price our products/services?", "Which is the message the company needs to send/receive?", and "Which are the necessary collaborations we should be targeting at?".

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

- Understand key contemporary marketing concepts and skills
- Gain, analyze, and draw conclusions from market and broader environmental data
- Use contemporary marketing tools (e.g., 4P for marketing definition, personas for UX, social media etc.)
- Develop relevant marketing strategies (e.g., segmentation, targeting, and positioning) to reach firm's goals
- Understand and use Analytics for marketing decisions

PRODUCTION SYSTEMS INDUSTRY 4.0

APPOINTED LECTURER

The course presents to the students the technological transformation of the production systems that is defined internationally with the term Industry 4.0 - 4th Industrial Revolution. Students will gain an understanding on the ecosystem of technologies that affect the context of the 4th Industrial Revolution as well as the issues that arise during their selection, integration and management in the modern production process.

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

- Understand the basic principles of digital transformation as well as the basic design principles of Industry 4.0
- Distinguish between individual technologies, their capabilities and how they can be integrated into a productive system
- Choose the right mix of technologies under specific constraints
- Describe the changes brought about by the 4th Industrial Revolution in the business field
- Evaluate the maturity of a company for its transition to the Industry 4.0 era

PROJECT II

SUPERVISING FACULTY MEMBER

The courses “Project I” (winter semester) and "Project II" (spring semester) form a single activity that lasts one academic year, equivalent to 11 ECTS. This elective is only available to four-year students who have successfully completed at least 30 courses during their previous years of study. Within the framework of this activity, the student, under the supervision of a faculty member of the Department studies a research topic. He/she is guided and supervised in the search, study and evaluation of bibliography, in the composition and writing of the report, as well as in the oral presentation of the report.

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

- Have studied in depth a specific topic from the scientific domains of the Department
- Have used their relevant knowledge acquired during their studies
- Have developed a skill for synthesis
- Have learned to search for appropriate scientific information from the relevant scientific literature
- Have acquired skill in writing a scientific text
- Have acquired competence in organizing and presenting the topic of the work
- Have gained experience in the research process
- Have gained experience in laboratory research (if the project concerns laboratory work)

RISK MANAGEMENT IN PRODUCTION SYSTEMS

N. RACHANIOTIS

The subject of the course is the identification, assessment and treatment of risks that threaten business continuity in all stages of production and supply of modern businesses. More specifically, the potential risks related to the individual processes of production systems (procurement, production, storage, transport, response to demand) and the related approaches regarding the planning, control and management of production systems as a whole are presented and analyzed. Special emphasis is given to risk management of production systems that are part of wider/internationalized supply chains (globalized supply chains). Finally, mitigation and risk management strategies are presented as well as the best practices adopted by innovative companies to manage risks in production/supply processes.

SPECIAL TOPICS OF ADVANCED MANUFACTURING TECHNOLOGIES

G. GIANNATSIS

The course covers developments in the field of production technologies, especially in the manufacturing sector of the industry. Specific modules presented in the course are: Basic manufacturing technologies and their features, Computer Integrated Manufacturing, Flexible production systems, Basic automation and control technologies, Rapid manufacturing and additive manufacturing, Micro / nano-scale manufacturing technologies, Virtual Modeling and Simulation, Reverse Engineering and Geometric Data Transfer Standards.

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

- Be familiar with advanced analytical and manufacturing design tools,

- Possess advanced knowledge of issues concerning the development, design, techno-economic evaluation and environmental burden of production of traditional and innovative products, which entails a critical understanding of theories and principles pertaining to a very broad and interdisciplinary field,
- Have advanced skills and will be able to demonstrate the skill and innovation required to solve complex and unpredictable production problems with modern technologies,
- Take responsibility for managing the professional development of individuals and teams by providing both research and development advice.

SPECIAL TOPICS IN OPERATIONS RESEARCH

S. SOFIANOPOULOU

The aim of the course is to familiarize students with the concepts of decision making using Operations Research.

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

- Describe real decision making problems and determine the steps that they are going to use in order to solve these problems using mainly commercial software packages (problem modeling, methodological approaches and algorithms, interpretation of results, decision implementation)
- Describe how they will use the results of the problem data processing
- Identify previous cases that are relevant and can help solve the problem
- Analyze decision making problems and construct mathematical models describing them, taking into account all the parameters and constraints governing the problem of decision
- Choose and apply methodologies appropriate to each case to solve decision problems
- Use the right mathematical software and develop applications on the specific software tools to solve the problems
- Analyze the results of the solution of the mathematical model and propose the solution or solutions to the problem
- Argue for the choice of solution or decision
- Work on Operations Research problems with intensive computer practice

TOTAL QUALITY MANAGEMENT

APPOINTED LECTURER

This course provides students with knowledge on the concepts, methods and characteristics of Total Quality Management (TQM). The course presents the history of TQM, analyses the concept of quality and highlights the role of leadership, human resources and education in the business strategy.

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

- Understand the significance of TQM for any business
- Deal with TQM strategic planning
- Demonstrate knowledge on the basic operations used for achieving the continuous quality improvement process

- Understand the role of leadership in TQM
- Understand the role of education in TQM
- Understand the different expressions of the quality concept used to highlight the quality parameters in products and services
- Demonstrate skills on TQM tools and on the methods/techniques used to measure quality
- Understand the broad business environment according to TQM principles (suppliers, society, environment, state, customers, employees, …)
- Design and manage quality assurance systems and certification and accreditation projects

WEB BASED INFORMATION SYSTEMS

G. CHONDROKOUKIS, A. PSEFTELIS

This course covers the fundamental principles of global web-based information systems and key issues related to information management, implementation of applications and access to global web data through interfaces. Students are trained in the design and development of web-based applications. The course presents the strategy of digital marketing and its applications with the help of information systems, IT tools and Internet models / applications (electronic, mobile marketing and social media marketing). Emphasis is given to modern IT tools and technologies for the management of marketing decision making in the digital environment.

Program Objectives

The objective of the Postgraduate Program of Studies (MSc) is the scientific training and the development of expertise in the Industrial Management & Technology field. The programme is organized into three specializations:

- Logistics Management
- Energy and Environmental Management
- Project Management

Core scientific and educational objectives of the three specializations are the following:

Logistics Management

The specialization aims at helping the participants obtain the specialized knowledge and personal skills that are required for a successful career in the Logistics and Supply Chain Management sector. This is achieved through the study of established methods and theories from the area of Logistics Management, as well as through the study of technological innovations and new techniques from the fields of data analytics, sustainable logistics and advanced storage, distribution and production technologies and the use of ERP Systems.

Energy and Environmental Management

In order to efficiently address present-day challenges associated with environmental management, energy management and sustainable development, a multi-disciplinary approach, that considers all technical, economic, social and management aspects of the corresponding issues, is required. The specialization aims at providing all the required knowledge regarding tools, methodologies and practices that permit the holistic study of the aforementioned issues as well as the effective transformation of enterprises and organizations in ways that are compatible with the current Circular Economy and Sustainable Development frameworks.

Project Management

The specialization aims at providing to the students the knowledge and skills to effectively manage projects from their initial design phase to their successful completion. The study program combines the study of quality aspects and case studies from actual practice, employing various analytical and quantitative techniques. The program is, also, structured in a way that takes into account the different knowledge backgrounds of individual students and facilitates them in obtaining the most from their studies. Special emphasis is given to the development of personal skills associated with team cooperation and the combined exploitation of the different scientific methods and technical approaches required for the successful implementation of complex projects.

Learning Outcomes

The learning outcomes of the postgraduate study program, in terms of the general competencies, specific knowledge and the skills that students will acquire after completing the program, are listed below.

General competencies

The program graduates will be able to:

- Apply the knowledge acquired and the skills developed during the program to analyze and solve problems with economic, technological and social criteria, through an interdisciplinary approach and based on scientific/professional ethics
- Plan, develop and conduct/handle projects, independently or in collaboration, as well as interdisciplinary activities and/or activities in an international environment
- Collect, evaluate, process, communicate and use data/information and, further, critically evaluate methods, techniques and results in order to improve the decision-making process, selection of actions and implementation of strategies
- Develop continuously their professional competences and expand their knowledge base.
- Continue their studies at a higher academic level

Specific knowledge

In Logistics Management

The knowledge acquired by the program graduates allows them to:

- Design, optimize and operate an efficient, holistic and multi-layered supply chain
- Use comprehensive and efficient quantitative tools to support decision making in complex, ever-changing supply chain environments
- Understand and have a critical position into trends in supply chain digitization and sustainability efforts due to climate change impacts
- Analyze and improve business process flow
- Make decisions and lead change that will deliver creative solutions that ensure prompt delivery of goods and services in an ever-changing global environment

In Energy and Environmental Management

The knowledge acquired by the program graduates allows them to:

- Recognize and evaluate the opportunities and challenges of the green economy (utilization of RES, rational use of energy, circular economy models, utilization of modern financing mechanisms for energy and environmental projects, development of green entrepreneurship, etc.)
- Select the best sustainable solutions for the businesses and organizations in which they operate
- Utilize quantitative and qualitative methods to address complex problems related to the management of energy and environmental resources, as well as energy transition issues
- Recognize the environmental systems that affect business activities and apply modern environmental ecosystem management methodologies (environmental policy formulation and implementation tools, environmental management strategies, natural resource management)
- Develop evidence-based reports and/or make informed decisions regarding the above issues

In Project Management

The knowledge acquired by the program graduates allows them to:

- Gain an in-depth understanding of the importance of modern Project Management in business, understand why projects must be aligned with corporate strategy throughout a project's lifecycle, and interpret how projects contribute to the achievement of corporate goals
- Organize, manage and administer projects using internationally recognized, accepted and effective Project Management techniques
- Understand, evaluate and adopt approaches, techniques and methodologies to optimize projects in every aspect, such as physical object, time, cost, production factors, etc.
- Explain and manage communications in the context of Project Management and in each discipline, such as Stakeholder Management, Scope Management, Risk Management, Change Management, etc.
- Understand and effectively apply the process-oriented nature of Project Management and apply the relevant standards
- Use and adopt modern Project Management software and through them they can plan, monitor, create reports, make forecasts, assess risks, propose corrective actions, etc.
- Work in teams and have a critical approach to common project problems as well as develop appropriate results through justification and consensus
- Argue competently, analyze based on evidence and effectively present their positions as project managers and contribute to the national economy and entrepreneurship

Skills

The program graduates will be able to:

- Analyze, formulate and manage problems
- Manage information and make decisions
- Analyze, design, develop and operate techno-economic systems
- Work in an interdisciplinary and multi-cultural/international environment
- Demonstrate a broad scientific background and combine knowledge from different fields
- Utilize personal and professional skills in leadership, project management and communication
- Engage in research, generate new ideas and innovate
- Operate with principles of social, professional and ethical responsibility and demonstrate sensitivity to gender issues

Students selection and admission requirements

Applications may be submitted online following the publication of a call for applications.

To be eligible for admission at the MSc program, prospective students must possess an undergraduate/bachelor degree from a Greek university-level educational institution or a similar acknowledged foreign educational institution, as provided in the current Greek legal framework.

Application procedure involves the submission of a set of required documents and certificates as well as a short interview discussion with a selection committee. Submitted applications are evaluated according to the following criteria:

- Knowledge background, both in terms of undergraduate studies and language skills (advanced knowledge of English language is a prerequisite).
- Complete set of skills and competences, associated with prior work experience and studies.
- Analytic and synthetic abilities.
- General and specific character traits as evaluated through the interview process.

Candidates who obtain the largest evaluation scores at the above, are accepted at the MSc program.

Duration and program of studies

The MSc program of study is structured into three (3) semesters. It involves the study of both compulsory and elective courses, as well as the conduct of a dissertation/diploma thesis. Upon successful completion of the whole program students are awarded 90 ECTS credits.

The Department of Industrial Management and Technology places particular emphasis on innovation in teaching methods and the integration of modern technologies in the educational process. Teaching is carried out through lectures, workshops, tutorials, seminars, interactive activities (experiential exercises, simulations, presentations of topics by students, etc.), individual and group work of students and research work.

Courses are conducted in physical, while there is also the possibility of distance learning through the Microsoft Teams platform. Course lectures are provided weekly and in the Greek language. Course assessment methods include a combination of methods (assignments, exercises, examinations, projects, etc.), which are effectively integrated in a student-centred approach, effectively promoting the achievement of learning outcomes and skills. Special provision is given in the examination of students with learning difficulties upon their request, accompanied by the relevant supporting documents, to the Postgraduate Secretariat.

Further information regarding the study programs per specialization and the corresponding courses are provided in the MSc webpage https://texmaster.unipi.gr/en/.

In addition, students of the 3rd semester can participate in the Internship program of the MSc and the mobility programs of the University of Piraeus.

Tuition Fees

For the attendance of the MSc the payment of tuition fees is foreseen. The tuition fee of the MSc amounts to 5.800,00 € (2.000 € in the 1st Semester, 2.000 € in the 2nd Semester and 1.800 € in the 3rd Semester).

Regulation of Postgraduate Studies

Students of the MSc must study the Regulations of Studies and the general rules of the Department and the University in order to know their rights and obligations.

Students of the 3rd semester who are working on their thesis can consult the Guide for the Composition of a Postgraduate Thesis.

Also, 3rd year students participating in the Internship programme can consult the Internship Regulations.

The Department is committed to the application of ethical rules, in compliance with the applicable laws concerning higher education and research and the relevant decisions of the competent bodies of the University of Piraeus. Furthermore, the Department is committed to the continuous improvement/upgrading of its operation in accordance with international practices.

Benefits & Facilities

Students of the MSc Program have can use the services provided by the University of Piraeus. Information about the student services (health coverage and European insurance card), accessibility, the Library, the Career Office, the Counselling Centre and the Health Care Services can be found in the Services section of the website https://texmaster.unipi.gr/en/.

In addition, students of the MSc Program can access a range of benefits and facilities depending on their interests, while special care has been taken for sensitive social groups such as the disabled and the needy. In particular, the programme provides the following:

- Academic Advisor

The role of the Academic Advisor is to assist and advise students to complete their studies and their individual goals in the most rational and efficient way and to propose solutions, as far as possible, to problems that arise and prevent the successful completion of their studies.

Students may discuss with their Academic Advisor any issue in their academic life that may affect their studies. The suggestions of the Academic Advisor are not binding and do not guarantee an a priori solution to every problem.

Academic Advisors by specialization are listed in the Graduate Program Bodies and Committees section of the Graduate Program Guide. The process of support and advice from the Advisors is carried out through all possible means of communication. More information can be found at the Regulation for the Academic Advisor.

- Student Complaints & Objections Management

The MSc Program of the Department of Industrial Management & Technology implements a Student Complaints and Objections Management Procedure with the main concern of systematically improving the quality of the provided educational and administrative.

For purely academic issues, students may address directly to the lecturers of the MSc Program and/or the Academic Advisor.

For complaints and objections that are not the responsibility of another body or committee (Student Advocate, Ethics Committee, Gender Equality Committee, Data Protection Officer), students of the Department have the right to address complaints or objections to the Student Complaints and Objections Management Committee of the MSc Program.

The procedure is simple and involves the completion of the Complaint Form, which is available in hard copy from the Postgraduate Studies Secretariat and via the MSc Program website. More information can be found at the Regulation of the Complaints and Appeals Procedure.

- Scholarships

The MSc Program provides a number of scholarships per academic semester to students who pay tuition fees, based on academic criteria and by decision of the Assembly. The highest average grade point average of all courses successfully passed in each semester of study will be taken into account for the ranking of scholarship candidates. For more information, please refer to Article 9 of the Regulations of Postgraduate Studies.

The MSc Program also provides the right to an excellence scholarship to newly admitted students who will pay tuition fees. Postgraduate students who apply to the call issued by the MSc are also entitled to apply for a scholarship for the 1st year of study if they meet the following criteria:

- Degree grade of eight (8) or higher from a Greek university or the equivalent of 8/10 for a higher education degree from a foreign institution, and/or
- Graduation score in the top 10% of the class of (to be certified by an official document from the relevant registry) or a score above 90% on the GMAT (quantitative) or GRE (quantitative)

More informations can be found in Article 9 of the Regulations of Postgraduate Studies.

According to the new law on the "Regulation of the issues related to the procedure of free study in a Postgraduate Program with tuition fees", the beneficiaries of exemption can read the conditions and the procedure in the Government Gazette 4899/16-9-2022. The application for exemption under Article 86 of Law No. 4957/2022 is carried out after the completion of the selection process of students to the MSc and after a relevant announcement by the Directorate of the MSc.

- Electronic Services

Upon completion of registration in the Department, each student must activate his/her account in the URegister application in order to access his/her personal student account and the electronic services provided by the Department and the University. After registering in URegister, each user has access to the mypassword service, from where he/she can manage the account and the provided contact details.

The electronic services include the academic identity, and the eclass. The University's premises are covered by a free wireless wi-fi network (ssid: unipi), to which anyone can connect to use Internet navigation services. Authorized users also have access to the Eduroam International Academic Network, which enables users from the global academic community to remotely and securely access the services provided by their academic institution. Use of the eduroam network requires the issue of a personal code.

The VPN (Virtual Private Network) service is offered to the entire academic community of University of Piraeus. It allows users, when connected to the Internet through alternative providers, to access services available exclusively through the institution's network, such as using library subscriptions to access online journals and articles.

Microsoft Imagine is provided by Microsoft and gives students of the University of Piraeus the ability to download and use Microsoft software free of charge through their personal codes. The software distributed to the students through the Azure DevTools for Teaching service. Access to the service is provided to the students at http://dreamspark.unipi.gr/ through their personal codes. Microsoft Office 365 Education Plus software is also available to all students and staff of the University through https://delos365.grnet.gr, using their personal codes and the okeanos service, that offers free to innovative cloud computing services.

- ### Industrial Training

The main objective of the Internship Program is to offer valuable practical experience to our students in real working conditions through a wide network of collaborating companies, therefore linking theory with practice.

The Internship Program contributes on one hand to the better utilization and assimilation at a professional level of the knowledge and skills acquired by the postgraduate students during their studies and on the other hand provides opportunities to enhance their scientific training with professional skills and qualifications.

In addition, they gain experience, personal maturity and professional, team and social awareness which are essential life skills. Professional networking with institutions and market players enhances the smooth integration of graduates into the country's productive system.

More details can be found at https://texmaster.unipi.gr/en/internship-program/.

- ### Student Mobility (Erasmus+)

The students of the Msc have the opportunity to participate to the Student Mobility (Erasmus+) program of the University of Piraeus. For more information you can contact the ERASMUS Supervising Faculty Member or through the webpage https://www.unipi.gr/en/erasmus-2/.

- ### Participation in conferences, workshops and educational visits

The students of the Msc have the opportunity to participate free of charge in international conferences and workshops and/or present papers at them. The relevant updates are posted in the announcements of the MSc Program website.

Also, Msc students can participate free of charge in educational visits, excursions and other activities organized by the Msc program and/or the course instructors. The relevant updates are posted in the announcements of the MSc Program website.

Quality Assurance

The quality assurance policy of the MSc Program is fully harmonized with the quality assurance policy of the Department of Industrial Management and Technology and the University of Piraeus and focuses on the continuous improvement of the quality of postgraduate studies, educational, research and administrative work.

The MSc is committed to the implementation of a quality policy that supports its academic character and orientation, promotes its purpose and objectives, sets, implements and monitors quality objectives, defines the means, actions and ways of achieving them and implements the appropriate internal and external quality procedures, with the ultimate goal of continuous improvement. The Department's quality policy, the vision, mission and quality strategy of the MSc, the target setting and planning of quality actions, the reports of internal and external evaluations and the proposal for academic accreditation and the quality assurance certificate are posted at https://www.tex.unipi.gr/diasfalisi-poiotitas-pms/?lang=en.

Evaluations play a crucial role in quality assurance in the MSc, providing important information on the performance of the curriculum and the relevance of the learning activities. At the end of each semester, students are asked to evaluate the semester's courses by completing a questionnaire that includes sections on the course, learning outcomes, the lecturer and adjunct faculty, laboratories and assignments, if any, as well as the course workload and the degree of student engagement with course activities. The results of the evaluations are made public at the end of the semester and the summary report is made public annually.

It is noted that, apart from the evaluation of courses and lecturers, the MSc Program evaluates annually the Internship and mobility programs, student attendance and performance, satisfaction of lecturers and administrative staff, graduates and alumni. The results are made public annually.

Link to the Labour Market and Employability of Graduates

The primary objective of the MSc is to support the high employability of its graduates and offer a strong link with the labour market. To this end, a successful Internship Program has been designed and implemented with the participation of a large number of Greek and multinational companies (https://texmaster.unipi.gr/en/internship-program/), while a number of other relevant activities are also carried out (e.g., visits to companies, participation in career days, workshops and speeches by senior executives, networking with important professional bodies, integration of quantitative and information systems and software as well as professional skills in the curriculum).

In the context of the continuous improvement of its educational services as well as its interface with the labour market, the Program conducts an Alumni survey every three years or all three specializations of the programme: Logistics Management, Energy and Environmental Management, and Project Management & Product Development. The results of the recent survey (https://texmaster.unipi.gr/en/employment/) indicate the great contribution of the MSc to the employment rate of the graduates (77% upon graduation, 16% after 6 months, 7% after 1 year or more) as well as to their subsequent professional development (82% of the participants consider that the MSc contributed a lot to very much to their development), while they also show the strong link of the MSc with the needs of the labour market (90% of the participants consider that the MSc has a strong to very strong link with the labour market).

Bodies and Committees of the Postgraduate Studies Programme

Director of MSc	Prof. D. Karalekas
Deputy Director of MSc	Prof. A. Flamos
Coordination Committee of MSc	Prof. D. Karalekas, Director of MSc Prof. S. Sofianopoulou, Member Prof. D. Emiris, Member Prof. A. Flamos Member Prof. K. Kostopoulos, Member
Internship Coordinator	Assoc. Prof. G. Giannatsis
Erasmus Academic Coordinator	Assoc. Prof. G. Giannatsis
Academic Advisor of MSc	Logistics Management Prof. K. Kostopoulos Energy & Environmental Management Prof. A. Flamos Project Management Prof. D. Emiris
Postgraduate Studies Secretariat	E. Alexandri

ACADEMIC ETHICS COMMITTEE	PROGRAMME COURSES COMMITTEE
Prof. D. Emiris (Coordinator)	Prof. A. Flamos (Coordinator)
Prof. D. Karalekas	Prof. C. Siontorou
Prof. G. Chondrokoukis	Assoc. Prof. N. Rachaniotis
	Assoc. Prof. P. Eirinakis
STUDENT COMPLAINTS & OBJECTIONS COMMITTEE	**INDUSTRIAL TRAINING COMMITTEE**
Prof. A. Flamos (Coordinator)	*Regular Members*
Prof. C. Siontorou	Assoc. Prof. G. Giannatsis (Coordinator)
Assoc. Prof. K. Kostopoulos	Assist. Prof. N. Chatzidai
	Assist. Prof. V. Kanellidis
	Substitute Members

Prof. S. Moschuris

Prof. D. Sidiras

Assoc. Prof. T. Tampouratzis

The administrative bodies of the Department are listed in detail in Section Bodies and Committees of the Department.

Postgraduate Study Program

The MSc programme consists of core/compulsory (C) and elective (E) courses.

Logistics Management

1st Semester				
Course Title	*Course Category*	*Teaching hours (weekly)*	*ECTS*	*Instructors*
Analytical Methods	C	3	6	S. Sofianopoulou
Supply Chain Management	C	3	6	S. Moschouris
Logistics Information Systems	C	3	6	G. Chondrokoukis
Selection	E	*See the list of elective courses*		
Selection	E			
Elective Courses				
Computational Tools for Problem Analysis and Solving	E	3	6	G. Giannatsis
Operations Cost Analysis	E	3	6	S. Sofianopoulou
Inventory Management	E	3	6	N. Rachaniotis
ERP Systems for Supply Chain Management	E	3	6	D. Emiris
Project Management	E	3	6	D. Emiris
Skills Seminars				
Personal Skills Development	-	-	-	K. Kostopoulos

2nd Semester				
Course Title	*Course Category*	*Teaching hours (weekly)*	*ECTS*	*Instructors*
Procurement And Supply	C	3	6	S. Moschouris
Warehouse Management and Material Handling	C	3	6	N. Rachaniotis
Transportation and Distribution Systems	C	3	6	S. Sofianopoulou

Selection	E	*See the list of elective courses*		
Selection	E			
Elective Courses				
Financial Management	E	3	6	D. Psychoyios
Environmental Standards & Certifications	E	3	6	C. Siontorou, N. Chatzidai
Zero Waste Management & Circular Economy	E	3	6	D. Sidiras
Strategic Management & Entrepreurship	E	3	6	K. Kostopoulos
ERP Systems for Supply Chain Management	E	3	6	D. Emiris
Advanced ERP Systems for Supply Chain Management – SAP Applications	E	3	6	D. Emiris
Packaging of Materials & Products	E	3	6	D. Karalekas, N. Chatzidai
Skills Seminars				
Personal Skills Development	-	-	-	K. Kostopoulos

3rd Semester				
Course Title	*Course Category*	*Teaching hours (weekly)*	*ECTS*	*Instructors*
Dissertation	C	-	12	*Supervising Faculty Member*
Selection	E	*See the list of elective courses*		
Selection	E			
Selection	E			
Elective Courses				
Managing Knowledge and Organizational Change	E	3	6	K. Kostopoulos
Human Resource Management	E	3	6	K. Kostopoulos

Industry 4.0 Systems	E	3	6	K. Karalekas, V. Kanellidis
Equipment and Facility Maintenance	E	3	6	P. Eirinakis
Humanitarian Logistics	E	3	6	N. Rachaniotis
Urban/City Last Mile Logistics	E	3	6	S. Moschouris
Digital Transformation and Operations Management	E	3	6	G. Chondrokoukis
Sustainable and Globalized Supply Chains	E	3	6	A. Kotios
Advanced ERP Systems for Supply Chain Management – SAP Applications	E	3	6	D. Emiris
Project Management in Practice	E	3	6	D. Emiris, P. Eirinakis, N. Chatzidai
Internship	E	-	[6]	*Internship Coordinator*
Skills Seminars				
Research Methodology	-	-	-	C. Siontorou

Energy and Environmental Management

1st Semester				
Course Title	*Course Category*	*Teaching hours (weekly)*	*ECTS*	*Instructors*
Economics of Energy and Environment	C	3	6	A. Flamos
Structure, Operation & Transition of the Energy System	C	3	6	C. Siontorou
Renewable Energy Sources	C	3	6	A. Flamos, D. Sidiras
Selection	E	*see list of elective courses*		
Selection	E			
Elective Courses				
Climate Change & Ssustainability	E	3	6	C. Siontorou, N. Chatzidai
Computational Tools for Problem Solving and Analysis	E	3	6	G. Giannatsis
Project Management	E	3	6	D. Emiris
Skills Seminars				
Personal Skills Development	-	-	-	K. Kostopoulos

2nd Semester				
Course Title	*Course Category*	*Teaching hours (weekly)*	*ECTS*	*Instructors*
Energy Policy Instruments	C	3	6	A. Flamos
Energy Saving & Demand Management	C	3	6	N. Chatzidai
Zero Waste Management & Circular Economy	E	3	6	D. Sidiras
Selection	E	*see list of elective courses*		
Selection	E			

Elective Courses				
Environmental Standards & Certifications	E	3	6	C. Siontorou, N. Chatzidai
Strategic Management & Entrepreneurship	E	3	6	K. Kostopoulos
Quality and Risk Management	E	3	6	D. Emiris
Skills Seminars				
Personal Skills Development	-	-	-	K. Kostopoulos

3rd Semester				
Course Title	*Course Category*	*Teaching hours (weekly)*	*ECTS*	*Instructors*
Dissertation	C		12	*Supervising Faculty Member*
Energy Markets & Regulation	C	3	6	D. Psychoyios
Selection	E	*see list of elective courses*		
Selection	E			
Elective Courses				
Alternative Fuels and Power to X applications	E	3	6	D. Sidiras
Equipment and Facility Maintenance	E	3	6	P. Eirinakis
Modeling and Optimisation of Energy & Environmental Systems	E	3	6	A. Flamos, C. Siontorou
Industry 4.0 Systems	E	3	6	D. Karalekas, V. Kanellidis
Internship	E	-	[6]	*Internship Coordinator*
Skills Seminars				
Research Methodology	-	-	-	C. Siontorou

Project Management

1st Semester				
Course Title	*Course Category*	*Teaching hours (weekly)*	*ECTS*	*Instructors*
Project Management	C	3	6	D. Emiris
Human Resource Management	C	3	6	K. Kostopoulos
Innovation and Product Development Management	C	3	6	D. Karalekas
Selection	E	*see list of elective courses*		
Elective Courses				
Operations Cost Analysis	C	3	6	S. Sofianopoulou
Managing Knowledge and Organizational Change	E	3	6	K. Kostopoulos
Climate Change & Sustainability	E	3	6	C. Siontorou, N. Chatzidai
Inventory Management	E	3	6	N. Rachaniotis
Skills Seminars				
Personal Skills Development	-	-	-	K. Kostopoulos

2nd Semester				
Course Title	*Course Category*	*Teaching hours (weekly)*	*ECTS*	*Instructors*
Project Planning and Control	C	3	6	D. Emiris
Strategic Management & Entrepreneurship	C	3	6	K. Kostopoulos
Financial Management	C	3	6	D. Psychoyios
Quality and Risk Management	C	3	6	D. Emiris
Selection	E	*see list of elective courses*		
Elective Courses				

Big Data and Business Analytics	E	3	6	P. Eirinakis
Procurement and Supply	E	3	6	S. Moschouris
Zero Waste Management & Circular Economy	E	3	6	D. Sidiras
Skills Seminars				
Personal Skills Development	-	-	-	K. Kostopoulos

3rd Semester				
Course Title	*Course Category*	*Teaching hours (weekly)*	*ECTS*	*Instructors*
Dissertations	C	-	12	*Supervising Faculty Member*
Project Management Certification	C	3	3	D. Emiris
Agile Project Management	C	3	3	D. Emiris
Selection	E	*see list of elective courses*		
Selection	E			
Elective Courses				
ERP Systems in Project Management – Applications with SAP	E	3	6	D. Emiris
Project Management in Practice	E	3	6	D. Emiris, P. Eirinakis, N. Chatzidai
Digital Transformation and Operations Management	E	3	6	G. Chondrokoukis
Modeling and Optimisation of Energy & Environmental Systems	E	3	6	A. Flamos, C. Siontorou
Equipment and Facility Maintenance	E	3	6	P. Eirinakis
Internship	E	-	[6]	*Internship Coordinator*

Skills Seminars				
Research Methodology	-	-	-	C. Siontorou

Syllabus

Logistics Management

1ST SEMESTER

ANALYTICAL METHODS

S. SOFIANOPOULOU

At the core of the course lies decision making in Logistics through quantitative models and techniques. The issues discussed in the course arise at strategic, tactical and operational level. A variety of models as well as solution techniques are presented. Special emphasis is given in Mathematical Programming Models – Linear and Integer, Network, and Queuing Theory models.

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

- They have knowledge and will understand the problems related to the decision-making process
- Formulate a problem from the fields of Management and Decision making science and Logistics using mathematical models, identify its variables, the optimization objective and the restrictions to which the variables are subject to.
- Be able to make use of the appropriate models to use in each case, depending on the problem, data and existing constraints.
- To use basic available computer tools in solving optimization problems with Operations Research tools.
- Interpret the results/solution of mathematical models, make decisions and analyze alternative scenarios – using sensitivity analysis.

SUPPLY CHAIN MANAGEMENT

S. MOSCHOURIS

The aim of the course is to obtain skills and up-to-date knowledge on basic areas pertaining to supply chain management.

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

- be familiar with basic concepts of logistics
- understand the significant impact of supply chain management on financial performance and viability of an enterprise.

LOGISTICS INFORMATION SYSTEMS

G. CHONDROKOUKIS

The application of Information Systems (IS) is wide and varied. This course focuses on their application as a mechanism to support business management and decision-making, as well as the use of IS in the majority of business areas. The use of modern IT tools and techniques and the implementation of the latest trends in the field of the Supply Chain lead to significant improvements in the operation of a business and contribute to the drastic reduction of Logistics costs, which constitute a significant percentage of the value of a final product.

After attending the course, students will acquire knowledge in the management of modern e-business and Logistics Information Systems.

COMPUTATIONAL TOOLS FOR PROBLEM SOLVING AND ANALYSIS

G. GIANNATSIS

The specific course focuses on the presentation and study of computational tools and techniques for modeling and analyzing unstructured business problems and decision-making issues. Spreadsheet software applications are used as the main analysis tool, due to their widespread use in the business environment as well due to the significant, often unexploited, capabilities for data analysis and processing that they provide. The tools employed are based on a wide range of methods for quantitative analysis and decision analysis, from the areas of Management Science, Applied Statistics and Decision Analysis.

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

- develop models for exploratory analysis and study of practical business problems,
- apply sound scientific techniques in practical problem-solving and analysis, and
- efficiently use the corresponding spreadsheet software tools for performing the above in a time-efficient manner.

OPERATIONS COST ANALYSIS

S. SOFIANOPOULOU

The aim of the course is the acquisition of Knowledge and skills in the application of the modern methodology of Activity Based Costing (ABC) to the processes of a company. ABC was originally developed to solve the problem that many managers could perceive through their experience but could not demonstrate through traditional costing systems. Today, ABC systems are recognized as the most modern (state-of-the-art) cost control technique, finding application in a wide range of activities and businesses worldwide.

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

- be familiar with the basic concepts of Activity Based Costing methodology.
- to know and operate a powerful and integrated decision support system which will be based on ABC method as it is applied with its principles.
- understand that the smooth operation, development and above all the profitability of the business depends on the acquisition and retention of satisfied customers and on the correct measurement and correct allocation of costs.

INVENTORY MANAGEMENT

N. RACHANIOTIS

The aim of the course is to study inventory control models, both deterministic and stochastic, as well as the analysis of methods on how to minimize the inventory cost in a firm.

Upon successful completion of the course, the students will be able to manage efficiently and effectively their firm's stock by simultaneously reducing the inventory level and increasing the level of service to their customers.

ERP SYSTEMS FOR SUPPLY CHAIN MANAGEMENT

D. EMIRIS

The course benefits of the main advantage of ERP systems, that is, business process integration. With this approach one achieves addressing issues pertinent to Logistics, as well as, teaching how business processes interact and exchange information to make decisions. The Business Processes which are presented and used during the Course are related to the corresponding SAP Module:

- Sales (SD – Sales and Distribution)
- Production (PP – Production Planning and Control)
- Procurement (MM) – Materials Management)
- Storage (WM – Warehouse Management)
- Financial Management (FI/CO – Financial Management / Controlling)

In a nutshell, the aim of the course is to provide to the students both the theoretical concepts and the practical skills in integrated ERP systems with emphasis in Logistics. More specifically, the course aims to demonstrate all the mechanisms which an ERP Systems offers, to support the business decision-making process along with the Logistics processes. Furthermore, students will come across with a variety of real - daily basis Project Management Process problems and difficulties, which should overcome using ERP's functionalities.

PROJECT MANAGEMENT

D. EMIRIS

The course is preparatory for practice and advanced study in project management and administration. It is intended to introduce the student to the basic principles of management and scheduling, project organization, progress monitoring, but also to create the necessary background for specialized study in the individual areas of knowledge as well as for practical training in the field of project management information systems (PMIS). Emphasis is placed on real problems so that it is possible to match theoretical concepts with practical representations and documented case studies.

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

- Learning the basic concepts, methodologies and techniques of modern project management
- Understanding the necessity of aligning project management with the strategy, values and targets of an organization as well as the feeling of the multidimensional impact that projects have on the context they are executed in
- Developing the perception and critical thought for projects that have been or about to be executed and acquiring coherent evaluation criteria for these projects
- Getting acquainted with the most widely spread and globally accepted techniques and standards that facilitate project management and formulate a common international language of communication in these subjects

- Presenting the methodological framework for selecting, developing, executing and monitoring projects and learning one of the most popular project management software
- Encouraging further reading and investigation of this interdisciplinary subject and developing the motivation for professional involvement.

PERSONAL SKILLS DEVELOPMENT

K. KOSTOPOULOS

The aim of the course is to understand the importance of developing soft skills as a critical success factor in the modern business environment. In this context, this seminar series seeks to help students identify and develop their communication and presentation skills, their teamwork competencies, as well as their creativity, negotiation, and decision making skills through the use of experiential exercises, business games and simulations, self-assessment tests, and role-playing.

Upon successful completion of the course, the students will be able to develop a set of skills and increase their understanding of key concepts referring to:

- The process of effective communication and presentation both within and across the organization.
- The design and management of teams.
- Idea development techniques.
- Decision making practices.
- Negotiation, conflict management, and providing feedback practices across different levels of hierarchy.

2ND SEMESTER

PROCUREMENT AND SUPPLY

S. MOSCHOURIS

The aim of the course is to obtain skills and up-to-date knowledge on subject areas pertaining to procurement and supply.

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

- be familiar with basic concepts of procurement and supply
- apply tools and methodologies to manage problems relating to the acquisition of materials and services from enterprises and organizations.

WAREHOUSE MANAGEMENT AND MATERIAL HANDLING

N. RACHANIOTIS

The aim of the course is the acquisition of Knowledge and skills in basic thematic units of Warehouse Management and the physical Distribution Networks of the modern enterprises.

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

- familiarize with the basic concepts of storage of goods in warehouses and modern distribution centers, as well as the Distribution of goods to end customers.
- understand the important effect of Warehousing on customer service and the financial impact and performance on the distribution channel of a business.
- understand the catalytic effect of the Distribution Network on customer service and financial performance and sustainability of a business.

TRANSPORTATION AND DISTRIBUTION SYSTEMS

S. SOFIANOPOULOU

The aim of the course is to discuss and analyse the means of integration and operation of transportation and distribution systems within the context of logistics systems. There is a specific emphasis on the organization and management of "physical" transport flows for the planning of the production and goods movement processes, as well as the means to adapt to market fluctuations.

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

- analyze and apply the concepts of demand, supply and cost of freight transport services,
- compare the alternative modes of transport that ensure the movement of goods in the supply chain of companies
- evaluate the alternative ways of organizing the distribution systems of the companies,
- solve problems and make decisions about the company's freight and distribution strategy
- assess the impact of transport policies and decisions on the performance of businesses and their supply chain.

FINANCIAL MANAGEMENT

D. PSYCHOYIOS

Financial decisions are of fundamental importance for modern economies and have significant explicit or implicit influence on both corporations and private investors. Finance has now become one of the most successful and active fields of research and application in management and economics. The theoretical basis of finance is strongly diverse integrating fields such as microeconomics, macroeconomics, accounting, mathematics, statistics, operational research, information technology, decision sciences, etc. This course aims at familiarizing students to the theory and practice of financial management. At the beginning, the course introduces students to the Accounting statements, the Financial Markets and their products. Then it deals with the three key decisions in corporate finance concerning: Investments, Financing and Dividends. The presentation is focused on developed markets, such as those of US and Europe, but reference is also made to emerging markets and the Greek markets.

On completing the course the participants will:

- Understand the key issues affecting corporate finance decisions.
- Retrieve Financial data and information from Accounting Statements
- Appreciate the risk-return trade-off
- Evaluate investments using different methodologies

- Assess the value of listed and unlisted companies
- Understand the advantages and disadvantages of using different forms of equity and debt.

ENVIRONMENTAL STANDARDS & CERTIFICATIONS

C. SIONTOROU, N. CHATZIDAI

The course will introduce environmental management systems (ISO9004, ISO14001, ISO14040, EMAS, etc.), environmental management system development processes in a company or an organization, and the certification processes. Various environmental management tools will be presented, such as life cycle analysis and policy tools, as well as case studies related to tourist destination certification, urban area management and design, environmental impact studies of mining units, airports, etc.

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

- Distinguish materials/procedures/processes in the manufacture/fabrication of products and/or the provision of services with negative environmental impact.
- Understand and manage certification issues (benefits, costs, process, responsibilities, body selection, continuous improvement, etc.)
- Design improvements to products and/or services in order to enhance their environmental friendliness.
- Prepare small-scale life cycle assessment studies for products and/or services.
- Apply environmental management business tools (environmental impact studies, analysis, valuation and monitoring tools, ecological design).

ZERO WASTE MANAGEMENT & CIRCULAR ECONOMY

D. SIDIRAS

The aim of the course is the contact of the students with the zero waste circular economy. Aims to waste prevention using zero waste innovative companies. Aims to go from the traditional waste management to innovative zero waste systems. Demonstrates the repair and the reuse. Supports the recovery of the waste incineration energy. Aims to the sustainability. Studies the low carbon technology. Aims to the recycling of chemicals and other materials. Investigates the combustion of the Refuse Derived Fuels (RDF) in the cement industry.

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

- Stimulate the zero waste circular economy concept.
- Communicate with more specialized scientists and technicians on issues related to waste preventions using zero waste innovative companies.
- Recommend the transition from the traditional waste management to innovative zero waste systems.
- Establish the repair and the reuse options.
- Support the recovery of the waste incineration energy.
- Describe the sustainability concept.
- Support the low carbon technology.
- Stand for the recycling of chemicals and other materials.

- Investigate the combustion of the Refuse Derived Fuels (RDF) in the cement industry.

STRATEGIC MANAGEMENT & ENTREPRENEURSHIP

K. KOSTOPOULOS

The aim of the course is to understand how different types of organizations design, formulate, and implement value-creating strategies to achieve competitive advantage and superior performance relative to their rivals. The course will therefore focus on the strategy making processes by first analyzing an organization's external environment and internal organization to determine its resources, capabilities, and core competencies—the sources of its "strategic inputs". Further, we will examine the strategy formulation process by discussing business- and corporate-level strategies, paying particular attention to current issues such as ambidextrous and innovation-based strategies, mergers and acquisitions, and global-focused strategies. Finally, we will study the strategy implementation process by analyzing corporate governance, organizational structure, and entrepreneurship as vehicles to realize value from strategic choices.

Upon successful completion of the course, the students will be able to develop a set of skills and increase their understanding of key concepts referring to:

- The role and value of strategic management in achieving high competitiveness and superior long-term performance.
- The practices of analyzing a firm's competitive environment by using different models and tools.
- The different dimensions of a firm's internal environment and importance of its interplay with the external environment.
- The different choices in terms of formulating a successful competitive strategy for attaining above-average, sustainable returns.
- The critical success factors of corporate-level strategies and their importance for a firm's viability and growth.
- The different forms of strategy implementation and their effect of realizing strategy gains.

ERP SYSTEMS FOR SUPPLY CHAIN MANAGEMENT

D. EMIRIS

The course benefits of the main advantage of ERP systems, that is, business process integration. With this approach one achieves addressing issues pertinent to Logistics, as well as, teaching how business processes interact and exchange information to make decisions. The Business Processes which are presented and used during the Course are related to the corresponding SAP Module:

- Sales (SD – Sales and Distribution)
- Production (PP – Production Planning and Control)
- Procurement (MM) – Materials Management)
- Storage (WM – Warehouse Management)
- Financial Management (FI/CO – Financial Management / Controlling)

In a nutshell, the aim of the course is to provide to the students both the theoretical concepts and the practical skills in integrated ERP systems with emphasis in Logistics. More specifically, the course aims to demonstrate all the mechanisms which an ERP Systems offers, to support the business decision-making process along with the Logistics processes. Furthermore, students will come across with a variety of real - daily basis Project Management Process problems and difficulties, which should overcome using ERP's functionalities.

ADVANCED ERP SYSTEMS FOR SUPPLY CHAIN MANAGEMENT – SAP APPLICATIONS

D. EMIRIS

The course presents special and advanced topics of design, planning and management of the Supply Chain using the ERP SAP system, and focuses on business process integration, covering its entire spectrum. The business operations that are addressed in the course lectures and the respective ERP modules are tabulated below:

- Sales (SD – Sales and Distribution)
- Production (PP – Production Planning and Control)
- Procurement (MM – Materials Management)
- Project Management (PS – Project System)
- Storage (WM – Warehouse Management)
- Financial Management (FI/CO – Financial Management / Controlling)

The aim of the course is to provide to the students with an understanding of the mechanisms and the ways an ERP system employs in taking complex and complete decisions related to Supply Chain operations. Discrete objectives are summarized in the students gaining a broad knowledge spectrum corresponding to complex business problems, such as, in particular:

- Planning and execution of complex, realistic business operations of the Supply Chain
- Identification of integration points between supply chain functions and verification of relationships during their planning
- Project modeling and management
- Special supply chain transactions
- Executive reporting.

PACKAGING OF MATERIALS AND PRODUCTS

D. KARALEKAS

With the rapid development of the packaging industry and its applications in recent years, there was a need to acquire specialized knowledge about the necessary characteristics that packaging must have in order to function properly and meet important requirements during the transportation and handling of products. Packaging is a dynamic space directly related to the market, technology, supply chain, quality control and the environment.

The main purpose of the course is to introduce and provide practical knowledge to the participants in special matters of selecting the appropriate packaging for the transport and distribution of the products, with

the main objective of making the best use of the space used in the means of transport while minimizing the environmental loads that arise.

PERSONAL SKILLS DEVELOPMENT

K. KOSTOPOULOS

The aim of the course is to understand the importance of developing soft skills as a critical success factor in the modern business environment. In this context, this seminar series seeks to help students identify and develop their communication and presentation skills, their teamwork competencies, as well as their creativity, negotiation, and decision making skills through the use of experiential exercises, business games and simulations, self-assessment tests, and role-playing.

Upon successful completion of the course, the students will be able to develop a set of skills and increase their understanding of key concepts referring to:

- The process of effective communication and presentation both within and across the organization.
- The design and management of teams.
- Idea development techniques.
- Decision making practices.
- Negotiation, conflict management, and providing feedback practices across different levels of hierarchy.

3RD SEMESTER

DISSERTATION

SUPERVISING FACULTY MEMBER

It is an in-depth investigation of a topic that is part of the cognitive field of the MSc. The Dissertation can be either research or bibliographical. It is carried out by postgraduate students under the supervision of a lecturer of the MSc. After the completion of the second semester of studies, students choose a topic and a supervisor. The choice of the topic is based on the student's interests and after consultation with the supervisor. Further information can be found at https://www.tex.unipi.gr/wp-content/uploads/2024/02/msc-thesis-guide.pdf.

MANAGING KNOWLEDGE AND ORGANIZATIONAL CHANGE

K. KOSTOPOULOS

The aim of the course is to understand why and under which conditions and mechanisms knowledge is considered as one of the most important resources of modern organizations, leading to successful implementation of organizational changes, generation of innovation, and attainment of sustainable competitive advantage. This course, therefore, aims at understanding and implementing concepts and management practices that refer to the effective acquisition, processing, and use of knowledge resources in a way that allows organizations to learn, innovate, adapt to changes occurring in their internal and external environment, and achieve high performance.

Upon successful completion of the course, the students will be able to develop a set of skills and increase their understanding of key concepts referring to:

- The different approaches towards managing organizational knowledge and the corresponding practices of completing knowledge-based projects within modern organizations.
- The mechanisms and processes of acquiring and utilizing knowledge assets for attaining innovative outcomes and managing (technological and organizational) changes.
- The different strategies available for establishing and managing collaborations and alliances for managing knowledge resources and organizational change.
- The interrelationship between knowledge resources and organizational learning, and the management of tensions and (seemingly) conflicting strategic goals.
- The key success factors of project teams designed to manage key knowledge assets and organizational change.

HUMAN RESOURCE MANAGEMENT

K. KOSTOPOULOS

The aim of the course is to understand how human resource management operates as a critical condition for the design and implementation of an organization's strategy, for achieving competitive advantage, and for attaining positive organizational performance. The course will be therefore analyzing the management practices and concepts implemented for high job performance and satisfaction, for achieving high motivation in complex tasks, and for the effective management of employee's personality and behavior. Further, we will analyze team and organizational performance by emphasizing on topics such as leadership, communication, group dynamics, conflict management and negotiations, and current forms of organizing work.

Upon successful completion of the course, the students will be able to develop a set of skills and increase their understanding of key concepts referring to:

- The role of human resources in an organization's strategy and performance.
- The practices of managing a diverse workforce in relation to their personality, behavior, motivation, and emotions.
- The practices and behaviors of effective leadership in highly dynamic environments.
- The critical success factors of teamwork, focusing on managing conflicts and on understanding the role of power and politics.
- The different forms of organizing work and the role of organizational culture.

INDUSTRY 4.0 SYSTEMS

D. KARALEKAS, V. KANELLIDIS

Modern world is characterized by the emergence of a new production model that is internationally identified by the term Industry 4.0. The core of this model is based on the increased digitization of production processes, in which physical objects are integrated with the information network, allowing the decentralization of production and its adaptation to the prevailing external conditions in real time. Key feature of this new model is the extensive further automation of production systems in order to increase their speed, flexibility and efficiency, without jeopardizing sustainability and/or safety. The scope of the course is to present in detail this new model that combines both elements of new technologies and forms of organization, such as cyber-physical systems, decentralized production systems, 'smart' logistics/manufacturing systems, 'smart' energy systems, advanced work support systems, etc.

Upon successful completion of the course, the students will have understood the concept of Industry 4.0 and the associated technologies involved, analyzing and discussing relevant topics such as:

- Industrial Internet of Things – IIoT
- Advanced/'Smart' Manufacturing
- 'Smart' Factory & Products
- Preventive diagnostics techniques and facility maintenance
- Digital Twins, Augmented Reality, etc.

EQUIPMENT AND FACILITY MAINTENANCE

P. EIRINAKIS

The aim of the course is to analyze key concepts about Management, Organization, Operation and Alternative Maintenance and Spare Parts Policies in a company. Topics that addressed in the course include (a) modern trends in corrective, preventive, total productive maintenance (TPM), and reliability centered maintenance as well as the effect of maintenance in energy saving, environmental protection and personnel safety, (b) current trends, options, and guidelines for drafting and managing the best maintenance service contract when outsourcing to contractors (OUTSOURCING) and (c) application of computerized tools for maintenance and spare parts management.

Upon successful completion of the course, the students will:

- understand the alternative ways of maintenance and the way they are designed and organized in a business as well as management activities for the required spare parts
- become familiar with the alternative options in outsourcing maintenance and drafting the corresponding contracts
- understand how to apply computer assisted tools in maintenance activities
- understand the need of adopting modern organizational practices for equipment and facilities management where the concept of availability, reliability, energy saving, and operator safety prevails
- successfully apply the techniques taught in real situations.

HUMANITARIAN LOGISTICS

N. RACHANIOTIS

Logistics/ supply chains play a central role in all humanitarian operations. The fundamental task of a supply chain is to deliver the appropriate supplies, in quality condition, in the right amounts, to the locations at the time that they are needed. However, humanitarian logistics is faced with unique challenges: Humanitarian and non-governmental organizations (NGOs) typically operate in hard environments with limited resources. Their supply chains must be on one hand ready to respond and be deployed within a 72 hours' time-window from the time of a disaster, delivering supplies in order to prevent loss of life and human suffering, under great uncertainty due to disruptions; on the other hand they must be capable to operate longer-term development programs. In both cases, the critical infrastructure, including the transportation and communication systems, may have been severely damaged.

Upon successful completion of the course, students will become familiar with the environment of humanitarian supply chains, where there are multiple stakeholders, conflicting incentives, limited resources,

complexity and risk. They will become familiar with the challenges in humanitarian supply chains and their connection to commercial supply chains. Finally, they will gain an insight into logistics support in humanitarian emergencies and will be able to identify benefits, good practices and key challenges in organizing logistics before (mitigation and preparedness), during (response) and after (recovery and development) a humanitarian disaster.

URBAN/CITY LAST MILE LOGISTICS

S. MOSCHOURIS

The aim of the course is to acquire knowledge in the main thematic sections of City Logistics, and the practices applied at an international level, as well as the evolutions that will exist in the near future.

Upon successful completion of the course, the students will:

- be familiar with basic concepts of city logistics
- understand the impact of Urban Logistics on the operation and sustainability of today's urban centers and megacities, as well as on the prospects of modern businesses.

DIGITAL TRANSFORMATION AND OPERATIONS MANAGEMENT

G. CHONDROKOUKIS

The course aims to help graduates of the MSc as future executives of Logistics and Supply Chain Management departments in using and applying cutting-edge technologies, mainly technologies of the 4th Industrial Revolution, in efficiently managing business operations in complex production/distribution systems.

Upon successfully completing the course, students will be able to effectively manage their companies' business operations using cutting-edge technologies such as the Internet of Things, Artificial Intelligence, Big Data and Analytics and, finally, Distributed Ledger Technologies.

SUSTAINABLE AND GLOBALIZED SUPPLY CHAINS

A. KOTIOS

The aim of the course is to describe the phenomenon of global supply chains and the factors that influence their evolution. Teaching focuses on analyzing the environmental impact of supply chain decisions, with particular emphasis on the impact of green transport and new trends in logistics sustainability in the context of increasing urbanization and e-commerce. Particular emphasis is placed on the challenges associated with suppliers from other parts of the world and the responsibility companies have to ensure that their suppliers act in accordance with national and international regulations and corporate social responsibility (CSR) practices. It studies practical alternatives to optimize CO_2 emissions using data analysis. It examines "fast" and "green" delivery in the new digital age, the relationship of consumers to sustainable products and services, and the environmental costs of express e-commerce. Finally, it presents CSR principles based on global sustainable governance, international standards, international agreements and initiatives (UN, OECD, EU, ISO 26000, etc.).

Upon successful completion of the course, the students will be able to assess the sustainability of global supply chains, identify the opportunities and risks associated with them, formulate strategies and

proposals for the "greening" of these chains. They will also master the principles, processes and tools for the sustainable management of supply chains, the use of new anti-pollution and digital technologies to ensure sustainability, as well as the political and institutional framework governing global supply chains.

ADVANCED ERP SYSTEMS FOR SUPPLY CHAIN MANAGEMENT – SAP APPLICATIONS

D. EMIRIS

The course presents special and advanced topics of design, planning and management of the Supply Chain using the ERP SAP system, and focuses on business process integration, covering its entire spectrum. The business operations that are addressed in the course lectures and the respective ERP modules are tabulated below:

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- Identification of integration points between supply chain functions and verification of relationships during their planning
- Project modeling and management
- Special supply chain transactions
- Executive reporting.

PROJECT MANAGEMENT IN PRACTICE

D.EMIRIS, P. EIRINAKIS, N. CHATZIDAI

The course presents how the principles, tools and techniques of Project Management are applied in practice in a broad spectrum of applications. In this context, the creation, structure and operation of a Project Management Office (PMO) is presented as useful software tools for its development. In addition, students will have the opportunity to immerse themselves in the importance of negotiations in Project Management and practice through related games. Moreover, students will examine the different financial instruments available for project financing. Finally, through a series of presentations by distinguished market executives, the particularities of the implementation of Project Management in practice in a series of modern and interesting sectors, such as construction projects, equipment and facilities maintenance projects, informatics and digital transformation projects incorporating the application of agile project management, projects in the shipping field, the framework and the implementation of projects of large organizations, projects through (co)-financed programs, corporate transformation projects and the approach of consulting companies to Project

Management, as well as special issues (projects of social content, International PM Organizations, special projects, etc.).

Overall, this course emphasizes in real-world problems so that it is possible to match the knowledge students have acquired throughout their postgraduate studies with practical applications and documented case studies.

Upon successful completion of the course, students will develop skills to:

- Know the structure and operation of a PMO
- Know what is required and how to create a PMO
- Handle negotiations in the context of Project Management
- Understand the different financial instruments available for project financing
- Understand the specifics of implementing the principles, tools and techniques of Project Management in different sectors.

INTERNSHIP

INTERNSHIP COORDINATOR

The main objective of the Internship is to acquaint the postgraduate students of the Department with the subject, the internal structure, the organization and the functioning of businesses and organizations in real working conditions, in order to link theory with practice. The Internship, on the one hand, contributes to the better utilization and assimilation at a professional level of the knowledge and skills acquired by postgraduate students during their studies and, on the other hand, provides opportunities to strengthen their scientific training with professional skills and qualifications. In addition, they acquire experience, personal maturity and professional, team and social consciousness that are essential skills. The professional networking with institutions and executives of the market strengthens the smooth integration of the graduates into the production system of the country. In addition, the participation of students in the program enhances the Department's linkage to the market and contributes to the development of cooperation networks. More information can be found at https://texmaster.unipi.gr/en/internship-program/.

RESEARCH METHODOLOGY

C. SIONTOROU

The aim of the seminar series is to familiarize students with the main concepts of research methodology, the basic know-how for the drafting of scientific projects and the usual techniques and software used in writing, searching, results processing, data acquisition, referencing, categorization, etc. Also, students will develop the necessary skills to meet the requirements of structure, content, bibliography, appearance and presentation of a small-/medium-sized scientific work (paper, literature review, thesis, technical text, etc.).

Using examples, case studies and relevant audiovisual material, students will be able to understand scientific texts as they develop skills related to:

- the use of language as the primary and essential communication tool with which scientific knowledge is transmitted from the author to the reader
- the formulation of the problem to be investigated and the hypotheses regarding the possible causal factors that contribute to the problem, the decomposition of the problem into sub-units and parameters, the determination of the study limits regarding the problem and the methodological approach of the sub-units and parameters of the problem

- search techniques for data, knowledge and information
- the evaluation of bibliographic sources and data
- the effective use of IT tools (search software, results processing, data presentation, referencing and citations).
- the drafting and elaboration of a project (data/information search, organization of data/information, presentation, documentation, inference)
- writing texts in a scientifically correct way, presenting/analysing the topic of the work in all its pre-defined dimensions
- the application of ethics and morality in writing
- the documentation of the work so as to contribute to the advancement of knowledge on the subject presented
- the oral presentation of scientific work and/or technical study

the organization, coordination and elaboration of group work (planning, assignment of roles, schedules, style harmonization, presentation).

Energy and Environmental Management

1ST SEMESTER

ECONOMICS OF ENERGY AND ENVIRONMENT

A. FLAMOS

The aim of the course is the acquisition of adequate knowledge on economics of energy and environment, which will enable graduates to:

- identify and interpret the interactions between economy, energy and the environment
- analyze and evaluate energy projects, considering their environmental impact
- develop substantiated proposals for the enterprises and the organizations in which they operate.

STRUCTURE, OPERATION & TRANSITION OF THE ENERGY SYSTEM

C. SIONTOROU

Trying to achieve climate neutrality, emphasis is placed on the transition from current energy systems, which are based on fossil fuels, to new ones based on Renewable Energy Sources (RES). Understanding the structure and operation of conventional energy systems is central to achieving a sustainable transition. In this context, the purpose of the course is to analyze basic concepts regarding the transition of conventional energy systems to a system, characterized by high shares of RES, extensive electrification and the efficient coupling of various sectors of final consumption, such as penetration of electric vehicles, significant increase of heat pumps utilization in meeting thermal needs, etc., with the aim of strengthening the security of energy supply. The role of cogeneration systems in the emerging new reality is also examined, as well as combined heat and power (CHP) systems that use low environmental impact fuel, such as the natural gas.

Upon successful completion of the course, the students will:

- Have understood the structure and operation of energy systems.
- Have familiarized themselves with conventional energy systems and the challenges they face.
- Have realized the need to transition to a new energy landscape, with electricity produced via RES playing the most significant role.
- Have learned methodological analysis and problem-solving techniques.
- Be able to successfully apply the techniques taught in real-life problems.

RENEWABLE ENERGY SOURCES

A. FLAMOS, D. SIDIRAS

The aim of the course is the acquisition of adequate knowledge on renewable energy sources, which will enable graduates to:

- understand the technological capabilities (specifications, constraints and advantages) of RES in relation to conventional energy generating technologies;
- identify and evaluate potential opportunities for a green economy;
- choose the best possible solutions for the enterprises and the organizations in which they operate;
- develop well documented reports;
- provide recommendations for informed decisions.

CLIMATE CHANGE & SUSTAINABILITY

C. SIONTOROU, N. CHATZIDAI

Climate change is expected to affect key sectors such as water availability, food security and energy, while mitigation, management and adaptation efforts are a global axis of development. The multiple and multifaceted correlation between climate change and sustainability has significant implications for entrepreneurship, creates major challenges in infrastructure development and project implementation, requires new strategies in environmental resource management, and generates new data in energy and economic policy. The course will discuss: (a) climate change data, climate scenarios, policies and strategies, (b) adaptation strategies and building a climate-resilient future, (c) issues related to atmospheric pollution, industry, energy and the environment, (d) corporate social responsibility and (e) sustainability and environmental resource management. Also, case studies related to the effects of climate change on the tourism industry, the construction of road axes, the management of coastal engineering projects, energy security, etc. will be presented.

Upon successful completion of the course, the students will:

- Manage the interaction between climate change impacts and aspects of entrepreneurship.
- Plan mitigation and adaptation actions at national, regional and local level.
- Incorporate the uncertainty of climate models into decision making about the future.
- Formulate adaptation strategies to build a future resilient to climate change.
- Understand issues of inequality and familiarize themselves with the methods and policies to abolish them.

COMPUTATIONAL TOOLS FOR PROBLEM SOLVING AND ANALYSIS

G. GIANNATSIS

The specific course focuses on the presentation and study of computational tools and techniques for modeling and analyzing unstructured business problems and decision-making issues. Spreadsheet software applications are used as the main analysis tool, due to their widespread use in the business environment as well due to the significant, often unexploited, capabilities for data analysis and processing that they provide. The tools employed are based on a wide range of methods for quantitative analysis and decision analysis, from the areas of Management Science, Applied Statistics and Decision Analysis. For the practical application of the relevant tools, spreadsheet applications are used, which are widely available and allow the investigation of the relevant problems in a short period of time.

Upon successful completion of the course, the students will:

- develop models for exploratory analysis and study of practical business problems,
- apply sound scientific techniques in practical problem-solving and analysis, and
- efficiently use the corresponding spreadsheet software tools for performing the above in a time-efficient manner.

PROJECT MANAGEMENT

D. EMIRIS

The course is preparatory for practice and advanced study in project management and administration. It is intended to introduce the student to the basic principles of management and scheduling, project organization, progress monitoring, but also to create the necessary background for specialized study in the individual areas of knowledge as well as for practical training in the field of project management information systems (PMIS). Emphasis is placed on real problems so that it is possible to match theoretical concepts with practical representations and documented case studies.

Upon successful completion of the course, the students will:

- Learning the basic concepts, methodologies and techniques of modern project management
- Understanding the necessity of aligning project management with the strategy, values and targets of an organization as well as the feeling of the multidimensional impact that projects have on the context they are executed in
- Developing the perception and critical thought for projects that have been or about to be executed and acquiring coherent evaluation criteria for these projects
- Getting acquainted with the most widely spread and globally accepted techniques and standards that facilitate project management and formulate a common international language of communication in these subjects
- Presenting the methodological framework for selecting, developing, executing and monitoring projects and learning one of the most popular project management software
- Encouraging further reading and investigation of this interdisciplinary subject and developing the motivation for professional involvement.

PERSONAL SKILLS DEVELOPMENT

K. KOSTOPOULOS

The aim of the course is to understand the importance of developing soft skills as a critical success factor in the modern business environment. In this context, this seminar series seeks to help students identify and develop their communication and presentation skills, their teamwork competencies, as well as their creativity, negotiation, and decision making skills through the use of experiential exercises, business games and simulations, self-assessment tests, and role-playing.

Upon successful completion of the course, the students will be able to develop a set of skills and increase their understanding of key concepts referring to:

- The process of effective communication and presentation both within and across the organization.
- The design and management of teams.
- Idea development techniques.
- Decision making practices.
- Negotiation, conflict management, and providing feedback practices across different levels of hierarchy.

2ND SEMESTER

ENERGY POLICY INSTRUMENTS

A. FLAMOS

Aim of the course is the acquisition of adequate knowledge on designing and implementing energy and environmental policies, which will enable them to:

- Perceive the evolution of the energy and environmental policy framework in a national, European and global level;
- Understand the design and operational features of key tools for assessing energy and environmental policies;
- Evaluate the existing policy tools, in terms of their effectiveness, their efficiency and their exploitation value for entities and organizations in the field.

ENERGY SAVING & DEMAND MANAGEMENT

N. CHATZIDAI

The recorded decrease in energy reserves at a global level, combined with the climate change as well as imponderable geopolitical developments that appear from time to time, highlight the necessity of developing organized actions on the issue of energy saving and optimizing the management of energy demand. In the frame formed by the above findings, the aims of the course are: highlighting the necessity of readjustment of the philosophy in energy demand management - highlighting new technologies, designs, methods and modern building materials to limit energy losses - highlighting the contribution of IT technologies in the automation of operation and the optimization of energy demand in building facilities. The effects on energy savings from demand's optimization of large electricity consumers (large production units-industries) on the infrastructure of electric power transmission-distribution networks, as well of the impact of distributed local production-consumption energy, are also examined.

Upon successful completion of the course, the students will:

- Understand the necessity to save and optimize energy demand in the modern energy environment.
- Communicate with more specialized scientists and technicians on issues related to the subject of the course.
- Synthesize possible solutions for the energy upgrade of a building installation
- Participate in the management of building automation projects
- Propose possible scenarios for optimizing the energy demand in building facilities, depending on their use.

ZERO WASTE MANAGEMENT & CIRCULAR ECONOMY

D. SIDIRAS

The aim of the course is the contact of the students with the zero waste circular economy. Aims to waste prevention using zero waste innovative companies. Aims to go from the traditional waste management to innovative zero waste systems. Demonstrates the repair and the reuse. Supports the recovery of the waste incineration energy. Aims to the sustainability. Studies the low carbon technology. Aims to the recycling of chemicals and other materials. Investigates the combustion of the Refuse Derived Fuels (RDF) in the cement industry.

Upon successful completion of the course, the students will:

- Stimulate the zero waste circular economy concept.
- Communicate with more specialized scientists and technicians on issues related to waste preventions using zero waste innovative companies.
- Recommend the transition from the traditional waste management to innovative zero waste systems.
- Establish the repair and the reuse options.
- Support the recovery of the waste incineration energy.
- Describe the sustainability concept.
- Support the low carbon technology.
- Stand for the recycling of chemicals and other materials.

- Investigate the combustion of the Refuse Derived Fuels (RDF) in the cement industry.

ENVIRONMENTAL STANDARDS & CERTIFICATIONS

C. SIONTOROU, N. CHATZIDAI

The course will introduce environmental management systems (ISO9004, ISO14001, ISO14040, EMAS, etc.), environmental management system development processes in a company or an organization, and the certification processes. Various environmental management tools will be presented, such as life cycle analysis and policy tools, as well as case studies related to tourist destination certification, urban area management and design, environmental impact studies of mining units, airports, etc.

Upon successful completion of the course, the students will:

- Distinguish materials/procedures/processes in the manufacture/fabrication of products and/or the provision of services with negative environmental impact.
- Understand and manage certification issues (benefits, costs, process, responsibilities, body selection, continuous improvement, etc.)
- Design improvements to products and/or services in order to enhance their environmental friendliness.
- Prepare small-scale life cycle assessment studies for products and/or services.
- Apply environmental management business tools (environmental impact studies, analysis, valuation and monitoring tools, ecological design).

STRATEGIC MANAGEMENT & ENTREPRENEURSHIP

K. KOSTOPOULOS

The aim of the course is to understand how different types of organizations design, formulate, and implement value-creating strategies to achieve competitive advantage and superior performance relative to their rivals. The course will therefore focus on the strategy making processes by first analyzing an organization's external environment and internal organization to determine its resources, capabilities, and core competencies—the sources of its "strategic inputs". Further, we will examine the strategy formulation process by discussing business- and corporate-level strategies, paying particular attention to current issues such as ambidextrous and innovation-based strategies, mergers and acquisitions, and global-focused strategies. Finally, we will study the strategy implementation process by analyzing corporate governance, organizational structure, and entrepreneurship as vehicles to realize value from strategic choices.

Upon successful completion of the course, the students will be able to develop a set of skills and increase their understanding of key concepts referring to:

- The role and value of strategic management in achieving high competitiveness and superior long-term performance.
- The practices of analyzing a firm's competitive environment by using different models and tools.
- The different dimensions of a firm's internal environment and importance of its interplay with the external environment.
- The different choices in terms of formulating a successful competitive strategy for attaining above-average, sustainable returns.

- The critical success factors of corporate-level strategies and their importance for a firm's viability and growth.
- The different forms of strategy implementation and their effect of realizing strategy gains.

QUALITY AND RISK MANAGEMENT

D. EMIRIS

The course evolves in two parts. The 1st part of the course aims at introducing postgraduate students in the field of project risk management for the complete lifecycle of small, medium and large-scale projects. Furthermore, it provides students with in-depth understanding of fundamental methodologies and IT tools which support decision-making in the areas of project risk identification, evaluation, planning and monitoring. The 2nd part of the course aims at introducing postgraduate students in the field of quality management of projects for their complete lifecycle. It introduces students in the concept of quality and the basic management processes (quality planning, assurance and control). For each of them, provides students with in-depth understanding of IT tools and techniques according to widely accepted and used methodologies.

The material is aligned with globally applied methodologies and techniques as defined by Project Management Institute (PMI).

PERSONAL SKILLS DEVELOPMENT

K. KOSTOPOULOS

The aim of the course is to understand the importance of developing soft skills as a critical success factor in the modern business environment. In this context, this seminar series seeks to help students identify and develop their communication and presentation skills, their teamwork competencies, as well as their creativity, negotiation, and decision making skills through the use of experiential exercises, business games and simulations, self-assessment tests, and role-playing.

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- The design and management of teams.
- Idea development techniques.
- Decision making practices.
- Negotiation, conflict management, and providing feedback practices across different levels of hierarchy.

3RD SEMESTER

DISSERTATION

SUPERVISING FACULTY MEMBER

It is an in-depth investigation of a topic that is part of the cognitive field of the MSc. The Dissertation can be either research or bibliographical. It is carried out by postgraduate students under the supervision of a lecturer of the MSc. After the completion of the second semester of studies, students choose a topic and a supervisor.

The choice of the topic is based on the student's interests and after consultation with the supervisor. Further information can be found at https://www.tex.unipi.gr/wp-content/uploads/2024/02/msc-thesis-guide.pdf.

ENERGY MARKETS & REGULATION

D. PSYCHOYIOS

The purpose of the course is the analysis of the energy markets in light of the climate crisis, with an emphasis on the regulatory framework that governs them, as well as the dynamics that characterize these markets. Furthermore, there is a more specific presentation and analysis of the Internal European Energy Market (IEM) under the EU Target Model, as well as the regulatory challenges during its implementation, while taking into account an increased participation of renewable energy sources (RES) in the energy mix. Also, in the context of the course, development issues of renewable energy projects and related regulatory and social challenges are analyzed and discussed.

Upon successful completion of the course, students will be assisted in developing skills and understanding concepts related to:

- The different structures found in modern energy markets and the corresponding challenges that exist for their development
- In the regulatory and regulatory framework that governs the markets, as well as the way they function properly
- In the analysis of the energy mix at global and European level in the light of climate change and in particular of greenhouse gas emissions (GHG)
- In the development of projects from renewable energy sources and the monitoring of their implementation
- On state aid with an emphasis on RES support schemes and on the Greek support and compensation mechanism for RES projects
- Energy poverty and the tools (institutional and regulatory actions) to address and prevent it
- In self-production and self-consumption of electricity (prosumer).

ALTERNATIVE FUELS AND POWER TO X APPLICATIONS

D. SIDIRAS

The aim of the course is the contact of the students with the major alternative fuels like ethanol, biodiesel, hydrogen, natural gas, electric energy, propane, methanol and P-series fuel. Moreover, they will be familiar with Power-to-X (or P2X), i.e., processes of transformation and storage of electric energy, for the valorization of its surplus at time periods, where renewable energy sources offer is more than the demand. In addition, they will study electricity transformation technologies, for the valorization of the surplus in other sectors, such as transportation and chemical commodities production. Specifically, the meaning of X in the title Power-to-X can be power-to-hydrogen, or power-to-gas, or power-to-syngas, or power-to-methane, or power-to-fuel, or power-to-chemicals, or power-to-mobility, or power-to-heat or power-to-power.

Upon successful completion of the course, the students will:

- Present (i) the major renewable alternative fuels like ethanol, biodiesel, hydrogen, and electric energy, (ii) the major non-renewable alternative fuels like natural gas and propane, and (iii) other alternative fuels like methanol and P-series fuel.

- Be familiar with Power-to-X (or P2X), i.e., processes of transformation and storage of electric energy, for the valorization of its surplus at time periods, where renewable energy sources offer is more than the demand.
- Discuss electricity transformation technologies, for the valorization of the surplus in other sectors, such as transportation and chemical commodities production.
- Explain the meaning of X in the title Power-to-X can be power-to-hydrogen, or power-to-gas, or power-to-syngas, or power-to-methane, or power-to-fuel, or power-to-chemicals, or power-to-mobility, or power-to-heat or power-to-power.

EQUIPMENT AND FACILITY MAINTENANCE

P. EIRINAKIS

The aim of the course is to analyze key concepts about Management, Organization, Operation and Alternative Maintenance and Spare Parts Policies in a company. Topics that addressed in the course include (a) modern trends in corrective, preventive, total productive maintenance (TPM), and reliability centered maintenance as well as the effect of maintenance in energy saving, environmental protection and personnel safety, (b) current trends, options, and guidelines for drafting and managing the best maintenance service contract when outsourcing to contractors (OUTSOURCING) and (c) application of computerized tools for maintenance and spare parts management.

Upon successful completion of the course, the students will:

- understand the alternative ways of maintenance and the way they are designed and organized in a business as well as management activities for the required spare parts
- become familiar with the alternative options in outsourcing maintenance and drafting the corresponding contracts
- understand how to apply computer assisted tools in maintenance activities
- understand the need of adopting modern organizational practices for equipment and facilities management where the concept of availability, reliability, energy saving, and operator safety prevails
- successfully apply the techniques taught in real situations.

MODELING & OPTIMISATION OF ENERGY & ENVIRONMENTAL SYSTEMS

A. FLAMOS, C. SIONTOROU

The aim of the course is to introduce students to the basic concepts and principles of modelling and optimization methods of energy and environmental systems, and to develop students' skills through their participation in the serious gaming of policy decision documentation at national (Netherlands, Italy, France, Spain etc.) and city (Paris, Barcelona, London, Munich etc.) level.

Upon successful completion of the course, the students will learn about the operation of computational structures and tools, which contribute to the documentation of decisions for the management of energy and environmental resources and will practice ("hands-on" exercises) in their use in order to gain empirical knowledge from model parameterization, assumptions, interpretation and presentation of results, etc.

INDUSTRY 4.0 SYSTEMS

D. KARALEKAS, V. KANELLIDIS

Modern world is characterized by the emergence of a new production model that is internationally identified by the term Industry 4.0. The core of this model is based on the increased digitization of production processes, in which physical objects are integrated with the information network, allowing the decentralization of production and its adaptation to the prevailing external conditions in real time. Key feature of this new model is the extensive further automation of production systems in order to increase their speed, flexibility and efficiency, without jeopardizing sustainability and/or safety. The scope of the course is to present in detail this new model that combines both elements of new technologies and forms of organization, such as cyber-physical systems, decentralized production systems, 'smart' logistics/manufacturing systems, 'smart' energy systems, advanced work support systems, etc.

Upon successful completion of the course, the students will have understood the concept of Industry 4.0 and the associated technologies involved, analyzing and discussing relevant topics such as:

- Industrial Internet of Things – IIoT
- Advanced/'Smart' Manufacturing
- 'Smart' Factory & Products
- Preventive diagnostics techniques and facility maintenance
- Digital Twins, Augmented Reality, etc.

INTERNSHIP

INTERNSHIP COORDINATOR

The main objective of the Internship is to acquaint the postgraduate students of the Department with the subject, the internal structure, the organization and the functioning of businesses and organizations in real working conditions, in order to link theory with practice. The Internship, on the one hand, contributes to the better utilization and assimilation at a professional level of the knowledge and skills acquired by postgraduate students during their studies and, on the other hand, provides opportunities to strengthen their scientific training with professional skills and qualifications. In addition, they acquire experience, personal maturity and professional, team and social consciousness that are essential skills. The professional networking with institutions and executives of the market strengthens the smooth integration of the graduates into the production system of the country. In addition, the participation of students in the program enhances the Department's linkage to the market and contributes to the development of cooperation networks. More information can be found at https://texmaster.unipi.gr/en/internship-program/.

RESEARCH METHODOLOGY

C. SIONTOROU

The aim of the seminar series is to familiarize students with the main concepts of research methodology, the basic know-how for the drafting of scientific projects and the usual techniques and software used in writing, searching, results processing, data acquisition, referencing, categorization, etc. Also, students will develop the necessary skills to meet the requirements of structure, content, bibliography, appearance and presentation of a small-/medium-sized scientific work (paper, literature review, thesis, technical text, etc.).

Using examples, case studies and relevant audiovisual material, students will be able to understand scientific texts as they develop skills related to:

- the use of language as the primary and essential communication tool with which scientific knowledge is transmitted from the author to the reader
- the formulation of the problem to be investigated and the hypotheses regarding the possible causal factors that contribute to the problem, the decomposition of the problem into sub-units and parameters, the determination of the study limits regarding the problem and the methodological approach of the sub-units and parameters of the problem
- search techniques for data, knowledge and information
- the evaluation of bibliographic sources and data
- the effective use of IT tools (search software, results processing, data presentation, referencing and citations).
- the drafting and elaboration of a project (data/information search, organization of data/information, presentation, documentation, inference)
- writing texts in a scientifically correct way, presenting/analysing the topic of the work in all its pre-defined dimensions
- the application of ethics and morality in writing
- the documentation of the work so as to contribute to the advancement of knowledge on the subject presented
- the oral presentation of scientific work and/or technical study
- the organization, coordination and elaboration of group work (planning, assignment of roles, schedules, style harmonization, presentation).

Project Management

1ST SEMESTER

PROJECT MANAGEMENT

D. EMIRIS

The course is preparatory for practice and advanced study in project management and administration. It is intended to introduce the student to the basic principles of management and scheduling, project organization, progress monitoring, but also to create the necessary background for specialized study in the individual areas of knowledge as well as for practical training in the field of project management information systems (PMIS). Emphasis is placed on real problems so that it is possible to match theoretical concepts with practical representations and documented case studies.

Upon successful completion of the course, the students will:

- Learning the basic concepts, methodologies and techniques of modern project management
- Understanding the necessity of aligning project management with the strategy, values and targets of an organization as well as the feeling of the multidimensional impact that projects have on the context they are executed in
- Developing the perception and critical thought for projects that have been or about to be executed and acquiring coherent evaluation criteria for these projects
- Getting acquainted with the most widely spread and globally accepted techniques and standards that facilitate project management and formulate a common international language of communication in these subjects
- Presenting the methodological framework for selecting, developing, executing and monitoring projects and learning one of the most popular project management software
- Encouraging further reading and investigation of this interdisciplinary subject and developing the motivation for professional involvement.

HUMAN RESOURCE MANAGEMENT

K. KOSTOPOULOS

The aim of the course is to understand how human resource management operates as a critical condition for the design and implementation of an organization's strategy, for achieving competitive advantage, and for attaining positive organizational performance. The course will be therefore analyzing the management practices and concepts implemented for high job performance and satisfaction, for achieving high motivation in complex tasks, and for the effective management of employee's personality and behavior. Further, we will analyze team and organizational performance by emphasizing on topics such as leadership, communication, group dynamics, conflict management and negotiations, and current forms of organizing work.

Upon successful completion of the course, the students will be able to develop a set of skills and increase their understanding of key concepts referring to:

- The role of human resources in an organization's strategy and performance.
- The practices of managing a diverse workforce in relation to their personality, behavior, motivation, and emotions.
- The practices and behaviors of effective leadership in highly dynamic environments.
- The critical success factors of teamwork, focusing on managing conflicts and on understanding the role of power and politics.

- The different forms of organizing work and the role of organizational culture.

INNOVATION AND PRODUCT DEVELOPMENT MANAGEMENT

D. KARALEKAS

The purpose of the course is to introduce students to the concepts of technology and innovation so that they understand their fundamental role in product development. In addition, it introduces students to the modern principles, methods and practices of developing innovative products. Most of the principles developed relate mainly to physical products but they can be also applied to the development of services or software products. Emphasis is placed on recording the customer's needs and converting them into product design & development specifications. The course covers the main phases of the product development process, such as: planning product development projects, identifying user needs, generating product ideas, selecting the best idea to develop, economic analysis, concept testing, and designing for the environment. During the weekly lectures, relevant case studies are presented and analyzed, while the students are asked to carry out specific tasks that cover the main topics developed during the teaching of the course.

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

- Understand the fundamental concepts, theory, methodology and procedures related to the development of innovative products.
- To use techniques, methodologies, and tools in the product development process.
- To enhance the students' confidence in their own abilities to create a new product.
- To reinforce the students' ability to coordinate multiple, interdisciplinary tasks, to achieve a common objective, namely the final product.

OPERATIONS COST ANALYSIS

S. SOFIANOPOULOU

The aim of the course is the acquisition of Knowledge and skills in the application of the modern methodology of Activity Based Costing (ABC) to the processes of a company. ABC was originally developed to solve the problem that many managers could perceive through their experience but could not demonstrate through traditional costing systems. Today, ABC systems are recognized as the most modern (state-of-the-art) cost control technique, finding application in a wide range of activities and businesses worldwide.

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

- be familiar with the basic concepts of Activity Based Costing methodology.
- to know and operate a powerful and integrated decision support system which will be based on ABC method as it is applied with its principles.
- understand that the smooth operation, development and above all the profitability of the business depends on the acquisition and retention of satisfied customers and on the correct measurement and correct allocation of costs.

MANAGING KNOWLEDGE AND ORGANIZATIONAL CHANGE

K. KOSTOPOULOS

The aim of the course is to understand why and under which conditions and mechanisms knowledge is considered as one of the most important resources of modern organizations, leading to successful implementation of organizational changes, generation of innovation, and attainment of sustainable competitive advantage. This course, therefore, aims at understanding and implementing concepts and management practices that refer to the effective acquisition, processing, and use of knowledge resources in a way that allows organizations to learn, innovate, adapt to changes occurring in their internal and external environment, and achieve high performance.

Upon successful completion of the course, the students will be able to develop a set of skills and increase their understanding of key concepts referring to:

- The different approaches towards managing organizational knowledge and the corresponding practices of completing knowledge-based projects within modern organizations.
- The mechanisms and processes of acquiring and utilizing knowledge assets for attaining innovative outcomes and managing (technological and organizational) changes.
- The different strategies available for establishing and managing collaborations and alliances for managing knowledge resources and organizational change.
- The interrelationship between knowledge resources and organizational learning, and the management of tensions and (seemingly) conflicting strategic goals.
- The key success factors of project teams designed to manage key knowledge assets and organizational change.

INVENTORY MANAGEMENT

N. RACHANIOTIS

The aim of the course is to study inventory control models, both deterministic and stochastic, as well as the analysis of methods on how to minimize the inventory cost in a firm.

Upon successful completion of the course, the students will be able to manage efficiently and effectively their firm's stock by simultaneously reducing the inventory level and increasing the level of service to their customers.

CLIMATE CHANGE & SUSTAINABILITY

C. SIONTOROU, N. CHATZIDAI

Climate change is expected to affect key sectors such as water availability, food security and energy, while mitigation, management and adaptation efforts are a global axis of development. The multiple and multifaceted correlation between climate change and sustainability has significant implications for entrepreneurship, creates major challenges in infrastructure development and project implementation, requires new strategies in environmental resource management, and generates new data in energy and economic policy. The course will discuss: (a) climate change data, climate scenarios, policies and strategies, (b) adaptation strategies and building a climate-resilient future, (c) issues related to atmospheric pollution, industry, energy and the environment, (d) corporate social responsibility and (e) sustainability and environmental resource management. Also, case studies related to the effects of climate change on the tourism industry, the construction of road axes, the management of coastal engineering projects, energy security, etc. will be presented.

Upon successful completion of the course, the students will:

- Manage the interaction between climate change impacts and aspects of entrepreneurship.
- Plan mitigation and adaptation actions at national, regional and local level.
- Incorporate the uncertainty of climate models into decision making about the future.
- Formulate adaptation strategies to build a future resilient to climate change.
- Understand issues of inequality and familiarize themselves with the methods and policies to abolish them.

PERSONAL SKILLS DEVELOPMENT

K. KOSTOPOULOS

The aim of the course is to understand the importance of developing soft skills as a critical success factor in the modern business environment. In this context, this seminar series seeks to help students identify and develop their communication and presentation skills, their teamwork competencies, as well as their creativity, negotiation, and decision making skills through the use of experiential exercises, business games and simulations, self-assessment tests, and role-playing.

Upon successful completion of the course, the students will be able to develop a set of skills and increase their understanding of key concepts referring to:

- The process of effective communication and presentation both within and across the organization.
- The design and management of teams.
- Idea development techniques.
- Decision making practices.
- Negotiation, conflict management, and providing feedback practices across different levels of hierarchy.

2ND SEMESTER

PROJECT PLANNING AND CONTROL

D. EMIRIS

This course accompanies and complements the “Project Management” course through the instruction of the MS Project 2013, 2016 & 2019 software. The working environment, the options and adaptations of the software are presented. Moreover, the main actions that one has to apply to properly model a project, such as, plan breakdown, scheduling ad financial planning, optimization, tracking, and reporting, are all covered in this course. The main aim of the course is to present a methodological framework to select, develop, execute and track projects and to learn through practical examples, one of the most popular PM information systems.

This course is addressed to students who wish to deal with projects not only from the technical side but also to those who wish to get involved in the development of project programs, the exchange of information, the development of communication forms, etc. In particular, it is addressed to those who are about to become involved or are already involved in project management and wish to organize their work properly, using effective project management techniques that also aim at optimizing a project, both in terms of time and cost and utilization of productive potential. In addition, it teaches participants how to effectively organize the communication structure of a project, monitor and control the physical and financial progress of their projects, anticipate and plan for project risks and ultimately save time and money. Finally, the course provides the necessary knowledge and techniques for those interested in becoming certified in the use of MS Project.

STRATEGIC MANAGEMENT & ENTREPRENEURSHIP

K. KOSTOPOULOS

The aim of the course is to understand how different types of organizations design, formulate, and implement value-creating strategies to achieve competitive advantage and superior performance relative to their rivals. The course will therefore focus on the strategy making processes by first analyzing an organization's external environment and internal organization to determine its resources, capabilities, and core competencies—the sources of its "strategic inputs". Further, we will examine the strategy formulation process by discussing business- and corporate-level strategies, paying particular attention to current issues such as ambidextrous and innovation-based strategies, mergers and acquisitions, and global-focused strategies. Finally, we will study the strategy implementation process by analyzing corporate governance, organizational structure, and entrepreneurship as vehicles to realize value from strategic choices.

Upon successful completion of the course, the students will be able to develop a set of skills and increase their understanding of key concepts referring to:

- The role and value of strategic management in achieving high competitiveness and superior long-term performance.
- The practices of analyzing a firm's competitive environment by using different models and tools.
- The different dimensions of a firm's internal environment and importance of its interplay with the external environment.
- The different choices in terms of formulating a successful competitive strategy for attaining above-average, sustainable returns.
- The critical success factors of corporate-level strategies and their importance for a firm's viability and growth.
- The different forms of strategy implementation and their effect of realizing strategy gains.

FINANCIAL MANAGEMENT

D. PSYCHOYIOS

Financial decisions are of fundamental importance for modern economies and have significant explicit or implicit influence on both corporations and private investors. Finance has now become one of the most successful and active fields of research and application in management and economics. The theoretical basis of finance is strongly diverse integrating fields such as microeconomics, macroeconomics, accounting, mathematics, statistics, operational research, information technology, decision sciences, etc. This course aims at familiarizing students to the theory and practice of financial management. At the beginning, the course introduces students to the Accounting statements, the Financial Markets and their products. Then it deals with the three key decisions in corporate finance concerning: Investments, Financing and Dividends. The presentation is focused on developed markets, such as those of US and Europe, but reference is also made to emerging markets and the Greek markets.

On completing the course the participants will:

- Understand the key issues affecting corporate finance decisions.
- Retrieve Financial data and information from Accounting Statements
- Appreciate the risk-return trade-off
- Evaluate investments using different methodologies

- Assess the value of listed and unlisted companies
- Understand the advantages and disadvantages of using different forms of equity and debt.

QUALITY AND RISK MANAGEMENT

D. EMIRIS

The course evolves in two parts. The 1st part of the course aims at introducing postgraduate students in the field of project risk management for the complete lifecycle of small, medium and large-scale projects. Furthermore, it provides students with in-depth understanding of fundamental methodologies and IT tools which support decision-making in the areas of project risk identification, evaluation, planning and monitoring. The 2nd part of the course aims at introducing postgraduate students in the field of quality management of projects for their complete lifecycle. It introduces students in the concept of quality and the basic management processes (quality planning, assurance and control). For each of them, provides students with in-depth understanding of IT tools and techniques according to widely accepted and used methodologies.

The material is aligned with globally applied methodologies and techniques as defined by Project Management Institute (PMI).

BIG DATA AND BUSINESS ANALYTICS

P EIRINAKIS

Every product and service, but also every project, production process, business operation, consumer behavior, etc. generates an abundance of data. This data is a wealth of knowledge that is often completely untapped. Modern companies, having fully understood the value that this knowledge can give to an organization, are increasingly turning in the direction of collecting and exploiting the data they have at their disposal. This course provides through practical training (using MS Excel) the fundamental tools, methodologies and techniques for the preparation, enrichment, analysis and investigation of data, but also for predicting the future course of critical quantities. In this way, business analytics allows the timely diagnosis of trends and the recognition of opportunities, thus supporting project management as well as in general the making of operational and strategic decisions.

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

- Understand the potential of data analytics in business applications.
- Know the fundamentals of statistics and data analytics required for business analytics
- Use different data sources, including data sources for big data
- Create dynamic data analysis and presentation of results tools using MS Excel
- Familiarize with searching "open" datasets.

PROCUREMENT AND SUPPLY

S. MOSCHOURIS

The aim of the course is to obtain skills and up-to-date knowledge on subject areas pertaining to procurement and supply.

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

- be familiar with basic concepts of procurement and supply
- apply tools and methodologies to manage problems relating to the acquisition of materials and services from enterprises and organizations.

ZERO WASTE MANAGEMENT & CIRCULAR ECONOMY

D. SIDIRAS

The aim of the course is the contact of the students with the zero waste circular economy. Aims to waste prevention using zero waste innovative companies. Aims to go from the traditional waste management to innovative zero waste systems. Demonstrates the repair and the reuse. Supports the recovery of the waste incineration energy. Aims to the sustainability. Studies the low carbon technology. Aims to the recycling of chemicals and other materials. Investigates the combustion of the Refuse Derived Fuels (RDF) in the cement industry.

Upon successful completion of the course, the students will:

- Stimulate the zero waste circular economy concept.
- Communicate with more specialized scientists and technicians on issues related to waste preventions using zero waste innovative companies.
- Recommend the transition from the traditional waste management to innovative zero waste systems.
- Establish the repair and the reuse options.
- Support the recovery of the waste incineration energy.
- Describe the sustainability concept.
- Support the low carbon technology.
- Stand for the recycling of chemicals and other materials.
- Investigate the combustion of the Refuse Derived Fuels (RDF) in the cement industry.

PERSONAL SKILLS DEVELOPMENT

K. KOSTOPOULOS

The aim of the course is to understand the importance of developing soft skills as a critical success factor in the modern business environment. In this context, this seminar series seeks to help students identify and develop their communication and presentation skills, their teamwork competencies, as well as their creativity, negotiation, and decision making skills through the use of experiential exercises, business games and simulations, self-assessment tests, and role-playing.

Upon successful completion of the course, the students will be able to develop a set of skills and increase their understanding of key concepts referring to:

- The process of effective communication and presentation both within and across the organization.
- The design and management of teams.
- Idea development techniques.

- Decision making practices.
- Negotiation, conflict management, and providing feedback practices across different levels of hierarchy.

3RD SEMESTER

DISSERTATION

SUPERVISING FACULTY MEMBER

It is an in-depth investigation of a topic that is part of the cognitive field of the MSc. The Dissertation can be either research or bibliographical. It is carried out by postgraduate students under the supervision of a lecturer of the MSc. After the completion of the second semester of studies, students choose a topic and a supervisor. The choice of the topic is based on the student's interests and after consultation with the supervisor. Further information can be found at https://www.tex.unipi.gr/wp-content/uploads/2024/02/msc-thesis-guide.pdf.

PROJECT MANAGEMENT CERTIFICATION

D. EMIRIS

The course functions as a culmination of the knowledge attained throughout the Project Management specialization. It deals with the presentation, analysis, in-depth study and explanation of the operation of Project Management, according to the latest standard of the Project Management Institute (PMI®). It presents, in particular, the basic concepts and fundamentals of Project Management along with predictive, plan-based methodologies; moreover, it presents the approach of the Certified Associate in Project Management (CAPM®) and Project Management Professional (PMP®) certification exams of PMI®, it emphasizes the importance of professional certification as a valuable add-on to the graduate level knowledge in Project Management and it performs a complete preparation for participation in such exams.

AGILE PROJECT MANAGEMENT

D. EMIRIS

Since the presentation of the Agile Manifest in 2001, the agile approach in Project Management has broken the barriers of projects for software development and relevant products, and has been established as a key concept in the broader management and operation of an organization. The agile approach is particularly useful when one can't (or, does not wish to) identify the project contents from the beginning, when requirements are constantly changing, when the project is delivered in small steps, or when activities may easily be altered. This course presents the fundamentals of the agile approach, the basic agile methodologies, such as SCRUM and KANBAN, as well as the tools and techniques with which we may manage and implement an agile project. Additionally, the course deals with the business analysis framework of Project Management along with the agile and adaptive Project Management methodologies. The course operates as a culmination of the knowledge attained in the Project Management specialization.

PROJECT MANAGEMENT IN PRACTICE

D.EMIRIS, P. EIRINAKIS, N. CHATZIDAI

The course presents how the principles, tools and techniques of Project Management are applied in practice in a broad spectrum of applications. In this context, the creation, structure and operation of a Project Management Office (PMO) is presented as useful software tools for its development. In addition, students will have the opportunity to immerse themselves in the importance of negotiations in Project Management and practice through related games. Moreover, students will examine the different financial instruments available for project financing. Finally, through a series of presentations by distinguished market executives, the particularities of the implementation of Project Management in practice in a series of modern and interesting sectors, such as construction projects, equipment and facilities maintenance projects, informatics and digital transformation projects incorporating the application of agile project management, projects in the shipping field, the framework and the implementation of projects of large organizations, projects through (co)-financed programs, corporate transformation projects and the approach of consulting companies to Project Management, as well as special issues (projects of social content, International PM Organizations, special projects, etc.).

Overall, this course emphasizes in real-world problems so that it is possible to match the knowledge students have acquired throughout their postgraduate studies with practical applications and documented case studies.

Upon successful completion of the course, students will develop skills to:

- Know the structure and operation of a PMO
- Know what is required and how to create a PMO
- Handle negotiations in the context of Project Management
- Understand the different financial instruments available for project financing
- Understand the specifics of implementing the principles, tools and techniques of Project Management in different sectors.

ERP SYSTEMS IN PROJECT MANAGEMENT - APPLICATIONS WITH SAP

D. EMIRIS

The course benefits of the main advantage of ERP systems, that is, business process integration. With this approach one achieves addressing issues pertinent to Project Management and Product Development, as well as, teaching how business processes interact and exchange information to make decisions. The Business Processes which are presented and used during the Course are related to the corresponding SAP Module:

- Project Management / Product Development (PS– Project System)
- Financial Management / Controlling (FI/CO – Financial Management / Controlling)
- Production Management (PP – Production Planning and Control)
- Human Resource Management (HCM – Human Capital Management)
- Maintenance (EAM – Enterprise Asset Management)

In a nutshell, the aim of the course is to provide to the students both the theoretical concepts and the practical skills in integrated ERP systems with emphasis in Project Management and Product Development. More specifically, the course aims to demonstrate all the mechanisms which an ERP Systems offers, to support the business decision-making process along with the Project Management / Product Development processes. Furthermore, students will come across with a variety of real - daily basis Project Management Process problems and difficulties, which should overcome using ERP's functionalities.

DIGITAL TRANSFORMATION AND OPERATIONS MANAGEMENT

G. CHONDROKOUKIS

The course aims to help graduates of the MSc as future executives of Logistics and Supply Chain Management departments in using and applying cutting-edge technologies, mainly technologies of the 4th Industrial Revolution, in efficiently managing business operations in complex production/distribution systems.

Upon successfully completing the course, students will be able to effectively manage their companies' business operations using cutting-edge technologies such as the Internet of Things, Artificial Intelligence, Big Data and Analytics and, finally, Distributed Ledger Technologies.

MODELING & OPTIMISATION OF ENERGY & ENVIRONMENTAL SYSTEMS

A. FLAMOS, C. SIONTOROU

The aim of the course is to introduce students to the basic concepts and principles of modelling and optimization methods of energy and environmental systems, and to develop students' skills through their participation in the serious gaming of policy decision documentation at national (Netherlands, Italy, France, Spain etc.) and city (Paris, Barcelona, London, Munich etc.) level.

Upon successful completion of the course, the students will learn about the operation of computational structures and tools, which contribute to the documentation of decisions for the management of energy and environmental resources and will practice ("hands-on" exercises) in their use in order to gain empirical knowledge from model parameterization, assumptions, interpretation and presentation of results, etc.

EQUIPMENT AND FACILITY MAINTENANCE

P. EIRINAKIS

The aim of the course is to analyze key concepts about Management, Organization, Operation and Alternative Maintenance and Spare Parts Policies in a company. Topics that addressed in the course include (a) modern trends in corrective, preventive, total productive maintenance (TPM), and reliability centered maintenance as well as the effect of maintenance in energy saving, environmental protection and personnel safety, (b) current trends, options, and guidelines for drafting and managing the best maintenance service contract when outsourcing to contractors (OUTSOURCING) and (c) application of computerized tools for maintenance and spare parts management.

Upon successful completion of the course, the students will:

- understand the alternative ways of maintenance and the way they are designed and organized in a business as well as management activities for the required spare parts
- become familiar with the alternative options in outsourcing maintenance and drafting the corresponding contracts
- understand how to apply computer assisted tools in maintenance activities
- understand the need of adopting modern organizational practices for equipment and facilities management where the concept of availability, reliability, energy saving, and operator safety prevails
- successfully apply the techniques taught in real situations.

INTERNSHIP

INTERNSHIP COORDINATOR

The main objective of the Internship is to acquaint the postgraduate students of the Department with the subject, the internal structure, the organization and the functioning of businesses and organizations in real working conditions, in order to link theory with practice. The Internship, on the one hand, contributes to the better utilization and assimilation at a professional level of the knowledge and skills acquired by postgraduate students during their studies and, on the other hand, provides opportunities to strengthen their scientific training with professional skills and qualifications. In addition, they acquire experience, personal maturity and professional, team and social consciousness that are essential skills. The professional networking with institutions and executives of the market strengthens the smooth integration of the graduates into the production system of the country. In addition, the participation of students in the program enhances the Department's linkage to the market and contributes to the development of cooperation networks. More information can be found at https://texmaster.unipi.gr/en/internship-program/.

RESEARCH METHODOLOGY

C. SIONTOROU

The aim of the seminar series is to familiarize students with the main concepts of research methodology, the basic know-how for the drafting of scientific projects and the usual techniques and software used in writing, searching, results processing, data acquisition, referencing, categorization, etc. Also, students will develop the necessary skills to meet the requirements of structure, content, bibliography, appearance and presentation of a small-/medium-sized scientific work (paper, literature review, thesis, technical text, etc.).

Using examples, case studies and relevant audiovisual material, students will be able to understand scientific texts as they develop skills related to:

- the use of language as the primary and essential communication tool with which scientific knowledge is transmitted from the author to the reader
- the formulation of the problem to be investigated and the hypotheses regarding the possible causal factors that contribute to the problem, the decomposition of the problem into sub-units and parameters, the determination of the study limits regarding the problem and the methodological approach of the sub-units and parameters of the problem
- search techniques for data, knowledge and information
- the evaluation of bibliographic sources and data
- the effective use of IT tools (search software, results processing, data presentation, referencing and citations).
- the drafting and elaboration of a project (data/information search, organization of data/information, presentation, documentation, inference)
- writing texts in a scientifically correct way, presenting/analysing the topic of the work in all its pre-defined dimensions
- the application of ethics and morality in writing
- the documentation of the work so as to contribute to the advancement of knowledge on the subject presented
- the oral presentation of scientific work and/or technical study

- the organization, coordination and elaboration of group work (planning, assignment of roles, schedules, style harmonization, presentation).

DOCTORAL STUDIES

General principles

Doctoral Studies aim to create high quality scientific research as well as to shape scientists capable of contributing to the advancement of research and applications of science. The Doctoral Program prepares graduates to get engaged in research, entrepreneurship and education in Greece and abroad.

In parallel, the Doctoral Program is a source of academic prestige and international recognition for the Department and contributes to the upgrading of research, with an emphasis on the scientific work relevant to its field of expertise. The third-level course includes the preparation of a Doctoral Thesis and concludes with the award of a Ph.D.

The Doctoral Thesis of the Department cover a wide range of subjects. It is the policy of the Department that doctoral candidates are considered to be affiliated with the Department, participating in all its academic and scientific functions.

On the proposal of the supervisor, with the agreement of the three-member Advisory Committee and the approval of the Departmental Assembly, the doctoral candidate may be required, if deemed necessary, to attend and/or take specific courses of the Department or other Departments of the University of Piraeus.

By decision of the Assembly of the Department, the compulsory attendance of special doctoral level courses offered to doctoral candidates of the Department may be provided for.

Candidate Qualifications

Those who fulfil the following requirements may apply for a Ph.D. in the Department:

Class A

- Higher education graduates (University or Technical Institution) from national or recognized and relevant foreign institutions.
- Postgraduate degree holders from national or recognized and relevant foreign institutions.

Fulfilling the above presupposes:

a) satisfying the criterion of ranking in the top 20% of class graduation for graduates (University or Technical Institution),

or

b) satisfying the criterion of ranking in the top 30% of class graduation for postgraduates,

or

c) having research experience substantiated by at least one peer-reviewed indexed journal publication or two publications in international peer-reviewed scientific conferences.

Class B

Holders of consolidated and unremitted master-level qualification according to article 46 of law 4485/2017.

In special cases, non-master holders may be exceptionally admitted to the doctoral program provided that the duration of their graduate studies was at least ten (10) academic semesters (300 ECTS) and they ranked in the top 30% of class graduation or have at least one peer-reviewed indexed journal publication or two publications in international peer-reviewed scientific conferences.

Selection of Ph.D. candidates

The Assembly of the Department, based on the relevance of the research topics of the applications submitted to faculty expertise, nominates a three-member Committee for each topic. Each Committee examines the applications and the supporting documentation and interviews the candidates.

Each Committee then submits a detailed recommendation to the Assembly of the Department setting out the reasons why the candidate is or is not eligible to be admitted. In addition, it suggests the supervisor, even if he / she has not been suggested by the candidate. In any case, the decision is taken by the Assembly of the Department.

The Assembly of the Department, taking into account the proposal of the Committee, approves or rejects the applicant's request. Upon approval, the decision of the Assembly also defines the language in which the Thesis will be written. In the same decision, the Assembly may set as prerequisites for Ph.D., such as successful attendance of courses or other research related obligations.

In case the Thesis will not be written is not Greek, it should include a summary in Greek.

Duration

The time for obtaining a PhD is at least three (3) full calendar years from the date of appointment of the three-member Advisory Committee with a maximum completion time of ten (10) years.

For non-master holding PhD candidates exceptionally admitted, the minimum time for obtaining a PhD is at least four (4) full calendar years from the date of appointment of the of the three-member Advisory Committee.

Regulations of Doctoral Studies

Doctoral candidates of the Department must study the Regulations of Doctoral Studies and the general rules of the Department and the University in order to know their rights and obligations.

Code of Conduct & Good Practice

In compliance with the applicable laws concerning higher education and research and the relevant decisions of the competent bodies of the University of Piraeus, doctoral candidates of the Department are required to comply with the Code of Research Conduct.

Furthermore, the Department is committed to the continuous improvement/upgrading of its operation in line with international practices.

Candidates carrying out research work in the laboratories of the Department must apply the regulations of the laboratories.

Benefits & Facilities

Doctoral candidates of the Department are required to obtain an academic identity card and an institutional email upon registration. In addition, they can benefit from the University of Piraeus student services, the Library, the mobility, the Counselling Centre and the Health Care Services. More information can be found in the Services-Benefits section of the University of Piraeus website.

Doctoral candidates are required to assist in the teaching, examination and research work of the Department. The details are defined by decision of the Assembly of the Departement.

The Research Centre of the University of Piraeus may also sponsor the participation of doctoral candidates in national or international conferences.