University of Piraeus

School of Maritime & Industry

Department of Industrial Management & Technology

Course Guide 2026-2027

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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

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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.

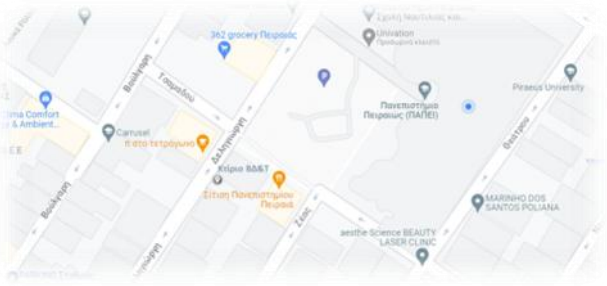
The Department's curriculum is aimed at students who wish to become executives of private and public production units and of enterprises active in the fields of manufacturing and provision of services.

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 of Industrial Management & Technology held at Office 114 at the 1st floor of the main building of the University and serves the students daily at the following email address:

tex-secr@unipi.gr: for ssues related to undergraduate studies

texmaster@unipi.gr: for matters relating to postgraduate studies.

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
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
Tatiana Tambouratzis Associate Professor	Information Technology with Emphasis on Applications of Mild Computational Techniques	phone: 210 4142423 e-mail: tatiana@unipi.gr

FACULTY	SUBJECT AREA	PHONE / E-MAIL
Pavlos Eirinakis **Associate Professor**	Analytical Methods in Industry	phone: 210 4142390 e-mail: pavlose@unipi.gr
Alexandros Bousdekis **Assistant Professor**	Reliability & Maintenance—Asset Management	phone: 210 414 2389 e-mail: abousdekis@unipi.gr
Vassilios Kanellidis **Assistant Professor**	Digital Techniques in Industrial Production Systems	phone: 210 4142165 e-mail: bcanell@unipi.gr
Nikoleta Chatzidai **Assistant Professor**	Computational and Laboratory Methods in Industrial Production Technologies	phone: 210 4142320 e-mail: nchatzi@unipi.gr
Stathis Plitsos **Assistant Professor**	Business Process Modeling, ERP Systems & Business Intelligence	phone: 210 414 2423 e-mail: stathisp@unipi.gr
Vasilis Stavrakas **Assistant Professor**	Modeling and Simulation of Energy Systems	phone: 210 414 2454 e-mail: vasta@unipi.gr

TEACHING STAFF

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

ADMINISTRATIVE STAFF

Anna Plevritaki	Head of Secretariat	phone: 210 4142094 e-mail: anplevritaki@unipi.gr
Evfrosini Alexandri	Secretariat	phone: 210 4142095 e-mail: tex-secr@unipi.gr
Georgia Pappa	Postgraduate Studies Secretariat	phone: 210 4142316 e-mail: texmaster@unipi.gr

Anastasia-Marina Tryposkoufi | Secreteriat of the 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 in Industrial Management & Technology	Prof. D. Karalekas
Director of MSc in Technoeconomics of Energy & the Environment	Prof. A. Flamos
Director of MSc in Project Management	Prof. D. Emiris
Head of Doctoral Studies Program	Prof. D. Karalekas
Associate	Prof. D. Sidiras
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
	Assist. Prof. V. Kanellidis
Academic Advisor of MSc	Logistics Management
	Prof. K. Kostopoulos
	Energy & Environmental Management / Technoeconomics of Energy & the Environment
	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

Prof. K. Kostopoulos, Member of MODIP, University of Piraeus

Assist. Prof. V. Kanellidis, Coordinator of WMDC Team

Assist. Prof. V. Stavrakas

Secretariat

A. Tryposkoufi

STRATEGIC PLANNING COMMITTEE

Prof. D. Emiris (Coordinator)

Prof. D. Karalekas

Prof. A. Flamos

Assoc. Prof. K. Kostopoulos

ETHICS COMMITTEE

Prof. D. Flamos (President)

Prof. D. Karalekas

Prof. C. Siontorou

PROGRAMME COURSES COMMITTEE

Prof. A. Flamos (Coordinator)

Prof. C. 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 (President)

Prof. S. Moschouris

Prof. A. Flamos

Prof. K. Kostopoulos

Assoc. Prof. N. Rachaniotis

Assist. Prof. V. Kanellidis

Assist. Prof. A. Bousdekis

STUDENT COMPLAINTS COMMITTEE

Prof. D. Emiris (President)

Prof. S. Moschouris

Prof. D. Psychoyios

Assist. Prof. N. Chatzidai

INDUSTRIAL TRAINING COMMITTEE

Regular Members

Assoc. Prof. G. Giannatsis (Coordinator)

Assist. Prof. N. Chatzidai

Assist. Prof. V. Kanellidis

Substitute Members

Prof. S. Moschuris

Assist. Prof. V. Stavrakas

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)

Assoc. Prof. I. Giannatsis

Assist. Prof. V. Kanellidis

Assist. Prof. S. Plitsos

Assist. Prof. V. Stavrakas

INTERNAL STUDENT MOBILITY COMMITTEE

Assoc. Prof. I. Giannatsis (Coordinator)

Assist. Prof. N. Chatzidai

Assist. Prof. S. Plitsos

AWARDS COMMITTEE

Prof. K. Kostopoulos

Prof. Ch. Siontorou

Prof. A. Flamos

WEBSITE MANAGEMENT AND DIGITAL COMMUNICATION TEAM

Assist. Prof. V. Kanellidis (Coordinator)

Assist. Prof. V. Stavrakas

Assist. Prof. S. Plitsos

Assoc. Prof. P. Eirinakis (Senior Advisor)

Erasmus+ PROGRAM ACADEMIC COORDINATOR

Assist. Prof. A. Bousdekis

DIRECTOR OF THE DOCTORAL PROGRAM

Prof. D. Karalekas (Coordinator)

Prof. D. Sidiras

DATA PROTECTION OFFICER

Assist. Prof. V. Kanellidis

COURSE RECOGNITION COMMITTEE

Prof. S. Moschouris

Prof. K. Kostopoulos

Assist. Prof. V. Kanellidis

Research Labs

The Department has seven (7) 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), the Laboratory of Innovative and Sustainable Supply Chain Management (ISSCM) and the Laboratory of Product Design & Development and Failure Analysis (LPDDFA) 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	-
LPDDFA	107 Deligiorgi Str., Bld of Industrial Management & Technology, ground floor	https://www.tex.unipi.gr/pdfa/?lang=en	70 m^2/25 persons



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.

The **Laboratory of Design, Development & Failure Analysis of Products** (LDDFAP) supports the education of undergraduate and postgraduate students of the Department in the scientific fields of engineering design and development of products, materials technology used in the development/manufacture of industrial products, computational/numerical analysis/evaluation of their structural/functional behaviour/integrity and experimental study/characterisation of materials, product reliability analysis and

evaluation of the reliability of products, as well as the evaluation of the performance of products. Focuses on a detailed understanding of the relationship between product development, material properties, production technologies and product functional performance. An additional objective of the Laboratory is to apply digital technologies to the design and development processes of new innovative products, material and product characterisation, production processes and technologies, quality control of materials and manufactured products, and safe operation of finished products and failure investigation. At the same time, the main objectives of the Laboratory are to conduct high level research in its fields of activity, to disseminate new knowledge through the organisation of conferences and publications and to create an appropriate environment for the further development of the research capabilities of its members. At the postgraduate level, the Laboratory offers the possibility to carry out high quality doctoral research.

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.

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, after their online registration in the application of the Ministry of Education and Religious Affairs, are invited to submit the necessary identification documents in a special application of the University, with a relevant announcement, which is published Department's website.

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) (courses for all students, covering the fundamental topics of Industrial Management & Technology), compulsory elective (CE) (elective courses with specialized streams in industrial management, technology, information technology and economics) and free elective (FE) (free elective courses for broadening knowledge and personalizing choices).

Transitional provisions apply for students of earlier years.

1st Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
MATHEMATICS I	C	4 (+1 tutorial course)	5,5	M. Fillipakis, V. Kanellidis
ECONOMICS I	C	4	5,5	E. Kyrkopoulou
INDUSTRIAL MANAGEMENT	C	4	5,5	K. Kostopoulos
INDUSTRIAL TECHNOLOGY	C	4	5,5	C. Siontorou
INTRODUCTION TO COMPUTERS	C	4 (+2 tutorial course)	5,5	V. Kanellidis A. Geronti
FUNDAMENTALS OF INDUSTRIAL MANAGEMENT & TECHNOLOGY	C	3	2,5	D. Emiris

2nd Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
MATHEMATICS II	C	4 (+1 tutorial course)	5,5	M. Fillipakis, V. Kanellidis
ECONOMICS II	C	4	5,5	K. Konstantakis
INTRODUCTION TO ENGINEERING MECHANICS	C	4 (+2 tutorial course	5,5	N. Chatzidai, *Adj. Instructor*
INDUSTRIAL PRECESSES	C	4 (+2 tutorial course)	5,5	D. Sidiras, A. Geronti
E-BUSINESS AND MULTIMEDIA	C	4 (+2 tutorial course)	5,5	G. Chondrokoukis, V. Kanellidis

INDUSTRIAL TECHNOLOGY LABORATORY	C	3	2,5	D. Sidiras, C. Siontorou, N. Chatzidai, A. Geronti

3rd Semester

Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
STATISTICS	C	4	5,5	N. Rachaniotis
FINANCIAL MANAGEMENT	C	4	5,5	D. Psychogios
INTRODUCTION TO MECHANICS OF MATERIALS	C	4 (+2 tutorial course)	5,5	D. Karalekas, N. Chatzidai
TOTAL QUALITY MANAGEMENT	C	4	5,5	C. Siontorou
COMPULSORY ELECTIVE	CE	*See the list of compulsory elective courses*		
FOREIGN LANGUAGE	C	4	2,5	*Member of the Foreign Languages staff*

Compulsory Elective Courses of 3rd Semester

Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
CHEMICAL INDUSTRIES	CE	4	5,5	D. Sidiras, A. Geronti
INFORMATION SYSTEMS	CE	4 (+2 tutorial course)	5,5	*Academic Fellow*
FINANCIAL ACCOUNTING	CE	4	5,5	N. Belesis

4th Semester

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

OPERATIONS RESEARCH I	C	4	5,5	P. Eirinakis
PRODUCTION SYSTEMS DESIGN	C	4	5,5	N. Rachaniotis
DATA PROCESSING & PROGRAMMING LANGUAGES	C	4	5,5	S. Plitsos
FREE ELECTIVE	FE	*See the list of free elective courses*		
FREE ELECTIVE	FE			
FOREIGN LANGUAGE	C	4	2,5	*Member of the Foreign Languages staff*

Free Elective Courses of 4th Semester

Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
TECHNOLOGIES & INNOVATION IN CHEMICAL PRODUCTION	FE	4	5,5	D. Sidiras, C. Siontorou, A. Geronti
BIOTECHNOLOGY	FE	4	5,5	C. Siontorou
ERGONOMICS	FE	4	5,5	I. Giannatsis
COST ACCOUNTING	FE	4	5,5	V. Zisis

5th Semester

Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
SUPPLY CHAIN MANAGEMENT	C	4	5,5	S. Moschouris
PRODUCTION PLANNING & CONTROL	C	4 (+2 tutorial course)	5,5	*Academic Fellow*
COMPULSORY ELECTIVE	CE	*See the list of compulsory elective courses*		
COMPULSORY ELECTIVE	CE			
FREE ELECTIVE	FE	*See the list of free elective courses*		
FOREIGN LANGUAGE	C	4	2,5	*Member of the Foreign Languages staff*

Compulsory Elective Courses of 5th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
SIMULATION & OPTIMIZATION OF INDUSTRIAL PROCESSES	CE	4	5,5	D. Sidiras, N. Chatzidai
NATURAL RESOURCES MANAGEMENT & ENVIRONMENT	CE	4	5,5	D. Sidiras, N. Chatzidai
OPERATIONS RESEARCH II	CE	4	5,5	S. Plitsos
BUSINESS ANALYTICS	CE	4 (+2 tutorial course)	5,5	P. Eirinakis

Free Elective Courses of 5th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
INDUSTRY 4.0	FE	4	5,5	V. Kanellidis
MARKETING	FE	4 (+2 tutorial course)	5,5	*Academic Fellow*
WEB BASED INFORMATION SYSTEMS	FE	4 (+2 tutorial course)	5,5	G. Chondrokoukis

6th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
ENGINEERING ECONOMICS	C	4	5,5	V. Stavrakas
PROJECT MANAGEMENT	C	4 (+2 tutorial course)	5,5	D. Emiris, P. Eirinakis
COMPULSORY ELECTIVE	CE	*See the list of compulsory elective courses*		
COMPULSORY ELECTIVE	CE			
FREE ELECTIVE	FE	*See the list of free elective courses*		
FOREIGN LANGUAGE	C	4	2,5	*Member of the Foreign Languages staff*

Compulsory Elective Courses of 6th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
QUEUEING THEORY & SYSTEMS SIMULATION	CE	4	5,5	A. Bousdekis
PROCUREMENT & SUPPLY MANAGEMENT	CE	4	5,5	S. Moschouris
FINANCIAL MANAGEMENT II	CE	4	5,5	D. Psychogios

Free Elective Courses of 6th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
RECYCLING: ECONOMIC & TECHNOLOGICAL ISSUES	FE	4	5,5	*Academic Fellow*
SHIPPING POLLUTION *(Offered by the Department of Maritime Studies)* *(Language of Instruction and Examinations: English)*	FE	4	5,5	A. Pantouvakis
SHIPPING MANAGEMENT *(Offered by the Department of Maritime Studies)*	FE	4	5,5	A. Pantouvakis
ARTIFICIAL INTELLIGENCE	FE	4	5,5	*Academic Fellow*
SPECIAL TOPICS IN OPERATIONS RESEARCH	FE	4 (+2 tutorial course)	5,5	S. Plitsos, A. Geronti

7th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
QUALITY ASSURANCE AND CONTROL	C	4	5,5	A. Bousdekis
ENERGY TECHNOLOGIES & THE ENVIRONMENT	C	4 (+2 tutorial course)	5,5	A. Flamos, V. Stavrakas
COMPULSORY ELECTIVE	CE	*See the list of compulsory elective courses*		

FREE ELECTIVE	FE	*See the list of free elective courses*		
FREE ELECTIVE	FE			
RESEARCH METHODOLOGY & ETHICS	C	3	2,5	D. Emiris, C. Siontorou, A. Geronti

Compulsory Elective Courses of 7th Semester

Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
COMPUTER-AIDED PRODUCT DESIGN	CE	4	5,5	I. Giannatsis
MATERIALS SELECTION IN PRODUCT DESIGN	CE	4	5,5	D. Karalekas, N. Chatzidai

Free Elective Courses of 7th Semester

Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
ENERGY & CLIMATE POLICY	FE	4	5,5	A. Flamos
RISK MANAGEMENT IN PRODUCTION SYSTEMS	FE	4	5,5	N. Rachaniotis
ENVIRONMENTAL PROTECTION TECHNOLOGIES	FE	4	5,5	*Academic Fellow*
SHIP TECHNOLOGY *(Offered by the Department of Maritime Studies)*	FE	4	5,5	S. Chatzinikolaou
INTRODUCTION TO SYSTEMS' MODELLING, SIMULATION & OPTIMIZATION	FE	4	5,5	V. Stavrakas
PROJECT I	FE		5,5	*Supervising Faculty member*
INDUSTRIAL TRAINING I	FE		5,5	*Industrial Training Office*

8th Semester

Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
STRATEGIC MANAGEMENT	C	4	5,5	K. Kostopoulos
PRODUCTION TECHNOLOGIES - ROBOTICS	C	4	5,5	D. Emiris, *Adjunct instructor*
FREE SELECTION	FE	*See the list of elective courses*		
FREE SELECTION	FE			
FREE SELECTION	FE			
CONTEMPORARY TOPICS IN INDUSTRIAL MANAGEMENT AND TECHNOLOGY	C	3	2,5	S. Moschouris, G. Chondrokoukis

Free Elective Courses of 8th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
RELIABILITY & MAINTENANCE OF TECHNOLOGICAL SYSTEMS	FE	4	5,5	A. Bousdekis
KNOWLEDGE & CHANGE MANAGEMENT	FE	4	5,5	K. Kostopoulos
ENERGY TRANSITION & SUSTAINABILITY	FE	4	5,5	V. Stavrakas
SPECIAL TOPICS IN SUPPLY MANAGEMENT	FE	4	5,5	S. Moschouris
PRODUCT DEVELOPMENT & INNOVATION	FE	4	5,5	D. Karalekas
SPECIAL TOPICS OF ADVANCED MANUFACTURING TECHNOLOGIES	FE	4	5,5	I. Giannatsis
COMPUTATIONAL METHODS / TOOLS IN INDUSTRIAL MANAGEMENT	FE	4	5,5	*Academic Fellow*
PROJECT II	FE		5,5	*Supervising Faculty member*
INDUSTRIAL TRAINING II	FE		5,5	*Industrial Training Office*

Part-time Study Program

Curriculum courses are divided into compulsory (C) (courses for all students, covering the fundamental topics of Industrial Management & Technology), compulsory elective (CE) (elective courses with specialized streams in industrial management, technology, information technology and economics) and free elective (FE) (free elective courses for broadening knowledge and personalizing choices).

1st Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
MATHEMATICS I	C	4 (+1 tutorial course)	5,5	M. Fillipakis, V. Kanellidis
INDUSTRIAL TECHNOLOGY	C	4	5,5	C. Siontorou
INTRODUCTION TO COMPUTERS	C	4 (+2 tutorial course)	5,5	V. Kanellidis, A. Geronti

2nd Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
MATHEMATICS II	C	4 (+1 tutorial course)	5,5	M. Fillipakis, V. Kanellidis
INDUSTRIAL PROCESSES	C	4 (+2 tutorial course)	5,5	D. Sidiras, A. Geronti
E-BUSINESS - MULTIMEDIA	C	4 (+2 tutorial course)	5,5	G. Chondrokoukis, V. Kanellidis

3rd Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
ECONOMICS I	C	4	5,5	E. Kyrkopoulou
INDUSTRIAL MANAGEMENT	C	4	5,5	K. Kostopoulos
FUNDAMENTALS OF INDUSTRIAL MANAGEMENT & TECHNOLOGY	C	3	2,5	D. Emiris

4th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
ECONOMICS II	C	4	5,5	K. Konstantakis
INTRODUCTION TO ENGINEERING MECHANICS	C	4 (+2 tutorial course)	5,5	N. Chatzidai, *Adjunct instructor*
INDUSTRIAL TECHNOLOGY LABORATORY	C	3	2,5	D. Sidiras, C. Siontorou, N. Chatzidai, A. Geronti

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

6th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
OPERATIONS RESEARCH I	C	4	5,5	P. Eirinakis
DATA PROCESSING – PROGRAMMING-LANGUAGES	C	4	5,5	S. Plitsos
FOREIGN LANGUAGE	C	4	2,5	*Member of the Foreign Languages staff*

7th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
FINANCIAL MANAGEMENT I	C	4	5,5	D. Psychoyios

TOTAL QUALITY MANAGEMENT	C	4	5,5	C. Siontorou
COMPULSORY ELECTIVE	CE	*See the list of compulsory elective courses*		

Compulsory Elective Courses of 7th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
CHEMICAL INDUSTRIES	CE	4	5,5	D. Sidiras, A. Geronti
INFORMATION SYSTEMS	CE	4 (+2 tutorial course)	5,5	*Academic Fellow*
FINANCIAL ACCOUNTING	CE	4	5,5	N. Belesis

8th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
PRODUCTION SYSTEMS DESIGN	C	4	5,5	N. Rachaniotis
FREE SELECTION	FE	*See the list of elective courses*		
FREE SELECTION	FE			

Free Elective Courses of 8th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
TECHNOLOGIES & INNOVATION IN CHEMICAL PRODUCTION	FE	4	5,5	D. Sidiras, C. Siontorou, A. Geronti
BIOTECHNOLOGY	FE	4	5,5	C. Siontorou
ERGONOMICS	FE	4	5,5	I. Giannatsis
COST ACCOUNTING	FE	4	5,5	V. Zisis

9th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
SUPPLY CHAIN MANAGEMENT	C	4	5,5	S. Moschouris
FREE SELECTION	FE	*See the list of elective courses*		
FOREIGN LANGUAGE	C	4	2,5	*Member of the Foreign Languages staff*

Free Elective Courses of 9th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
INDUSTRY 4.0	FE	4	5,5	V. Kanellidis
MARKETING	FE	4 (+2 tutorial course)	5,5	*Academic Fellow*
WEB BASED INFORMATION SYSTEMS	FE	4 (+2 tutorial course)	5,5	G. Chondrokoukis

10th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
ENGINEERING ECONOMICS	C	4	5,5	V. Stavrakas
FREE SELECTION	FE	*See the list of elective courses*		
FOREIGN LANGUAGE	C	4	2,5	*Member of the Foreign Languages staff*

Free Elective Courses of 10th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
RECYCLING: ECONOMIC & TECHNOLOGICAL ISSUES	FE	4	5,5	*Academic Fellow*
SHIPPING POLLUTION *(Offered by the Department of Maritime Studies)*	FE	4	5,5	A. Pantouvakis

(Language of Instruction and Examinations: English)				
SHIPPING MANAGEMENT *(Offered by the Department of Maritime Studies)*	FE	4	5,5	A. Pantouvakis
ARTIFICIAL INTELLIGENCE	FE	4	5,5	*Academic Fellow*
SPECIAL TOPICS IN OPERATIONS RESEARCH	FE	4 (+2 tutorial course)	5,5	S. Plitsos, A. Geronti

11th Semester

Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
PRODUCTION PLANNING & CONTROL	C	4 (+2 tutorial course)	5,5	*Academic Fellow*
COMPULSORY ELECTIVE	CE	*See the list of compulsory elective courses*		
COMPULSORY ELECTIVE	CE			

Compulsory Elective Courses of 11th Semester

Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
SIMULATION & OPTIMIZATION OF INDUSTRIAL PROCESSES	CE	4	5,5	D. Sidiras, N. Chatzidai
NATURAL RESOURCES MANAGEMENT & ENVIRONMENT	CE	4	5,5	D. Sidiras, N. Chatzidai
OPERATIONS RESEARCH II	CE	4	5,5	*S. Plitsos*
BUSINESS ANALYTICS	CE	4 (+2 tutorial course)	5,5	P. Eirinakis

12th Semester

Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
PROJECT MANAGEMENT	C	4 (+2 tutorial course)	5,5	D. Emiris, P. Eirinakis

COMPULSORY ELECTIVE	CE	*See the list of compulsory elective courses*
COMPULSORY ELECTIVE	CE	

Compulsory Elective Courses of 12th Semester

Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
QUEUEING THEORY & SYSTEMS SIMULATION	CE	4	5,5	A. Bousdekis
PROCUREMENT & SUPPLY MANAGEMENT	CE	4	5,5	S. Moschouris
FINANCIAL MANAGEMENT II	CE	4	5,5	D. Psychogios

13th Semester

Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
QUALITY ASSURANCE AND CONTROL	C	4	5,5	A. Bousdekis
COMPULSORY ELECTIVE	CE	*See the list of compulsory elective courses*		
RESEARCH METHODOLOGY & ETHICS	C	3	2,5	D. Emiris, C. Siontorou, A. Geronti

Compulsory Elective Courses of 13th Semester

Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
COMPUTER-AIDED PRODUCT DESIGN	CE	4	5,5	I. Giannatsis
MATERIALS SELECTION IN PRODUCT DESIGN	CE	4	5,5	D. Karalekas, N. Chatzidai

14th Semester

Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
STRATEGIC MANAGEMENT	C	4	5,5	K. Kostopoulos
PRODUCTION TECHNOLOGIES - ROBOTICS	C	4	5,5	D. Karalekas, D. Emiris, N. Chatzidai
CONTEMPORARY TOPICS IN INDUSTRIAL MANAGEMENT & TECHNOLOGY	C	3	2,5	S. Moschouris, G. Chondrokoukis

15th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
ENERGY TECHNOLOGIES & THE ENVIRONMENT	C	4 (+2 tutorial course)	5,5	A. Flamos, V. Stavrakas
FREE SELECTION	FE	*See the list of elective courses*		
FREE SELECTION	FE			

Free Elective Courses of 15th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
ENERGY & CLIMATE POLICY	FE	4	5,5	A. Flamos
RISK MANAGEMENT IN PRODUCTION SYSTEMS	FE	4	5,5	N. Rachaniotis
ENVIRONMENTAL PROTECTION TECHNOLOGIES	FE	4 (+2 tutorial course)	5,5	*Academic Fellow*
SHIP TECHNOLOGY *(Offered by the Department of Maritime Studies)*	FE	4	5,5	S. Chatzinikolaou
INTRODUCTION TO SYSTEMS' MODELLING, SIMULATION & OPTIMIZATION	FE	4	5,5	V. Stavrakas
PROJECT I	FE		5,5	*Supervising Faculty member*

INDUSTRIAL TRAINING I	FE		5,5	*Industrial Training Office*

16th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
FREE SELECTION	FE	*See the list of elective courses*		
FREE SELECTION	FE			
FREE SELECTION	FE			

Free Elective Courses of 16th Semester				
Course Title	*Course Category*	*Teaching Hours (weekly)*	*ECTS*	*Instructors*
RELIABILITY & MAINTENANCE OF TECHNOLOGICAL SYSTEMS	FE	4	5,5	A. Bousdekis
KNOWLEDGE & CHANGE MANAGEMENT	FE	4	5,5	K. Kostopoulos
ENERGY TRANSITION & SUSTAINABILITY	FE	4	5,5	V. Stavrakas
SPECIAL TOPICS IN SUPPLY MANAGEMENT	FE	4	5,5	S. Moschouris
PRODUCT DEVELOPMENT & INNOVATION	FE	4	5,5	D. Karalekas
SPECIAL TOPICS OF ADVANCED MANUFACTURING TECHNOLOGIES	FE	4	5,5	I. Giannatsis
COMPUTATIONAL METHODS / TOOLS IN INDUSTRIAL MANAGEMENT	FE	4	5,5	*Academic Fellow*
PROJECT II	FE		5,5	*Supervising Faculty member*
INDUSTRIAL TRAINING II	FE		5,5	*Industrial Training Office*

1ST SEMESTER

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, describe, and handle fundamental concepts of analysis – functions of a single variable (limit of a function of one variable, continuity, differentiation, integration, area under a curve) – and linear algebra – matrices, determinants, systems of linear equations, characteristic values, eigenvalues/eigenvectors, inner product, outer product, and vectors in the plane and in space.
- Solve probability exercises (combinatorics, conditional probability, independent events)
- Possess the necessary background to meet the computational requirements of the other courses in the study program.
- Formulate and solve computational problems using the mathematical tools taught in the course.
- Select the appropriate mathematical method to solve complex or novel problems within the Department's scientific field, and to develop comprehensive, as well as creative or innovative, solutions and approaches in a methodical and scientific manner.
- Be familiar with, operate, and understand computational mathematics software such as Mathematica, Matlab, and Octave, in applications of mathematical analysis and linear algebra related to computer science.

ECONOMICS I

E. KYRKOPOULOU

The course is an introduction to Economics and aims to familiarize students with basic microeconomics. The course 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.

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).

INDUSTRIAL TECHNOLOGY

C. *SIONTOROU*

The course introduces students to industrial production, with an emphasis on understanding the fundamental principles and key parameters that influence the operation of production systems in the manufacturing sector. Through the study of core industrial processes, the analysis and design of flow diagrams, and an introduction to computational modeling and simulation tools, students acquire the necessary knowledge to understand how modern industrial systems are designed, operated, and optimized. Special attention is given to issues of sustainability, energy efficiency, and technological innovation, reinforcing the course's relevance to contemporary industrial challenges.

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

- Understand the fundamental principles of industrial production, the main types of production systems, and the key production technologies applied across various industrial sectors, as well as the technical, economic, and environmental parameters that influence the development and selection of production technologies.

- Identify and describe the main types of chemical products and the core industrial production processes used in manufacturing (e.g., cement, pharmaceuticals, food, fertilizers, petroleum, metals, etc.).
- Describe the principal industrial processes used for the treatment of raw materials in chemical and related industries.
- Explain current trends in industrial production technologies, with an emphasis on process sustainability and technological choices.
- Design and interpret basic process flow diagrams to represent the structure and operation of production systems.
- Apply basic flow analysis principles to perform mass and energy balances and assess the operating conditions of production units.
- Develop simple process models that simulate raw material flow and system behavior under different operating conditions.

INTRODUCTION TO COMPUTERS

V. KANELLIDIS, A. GERONTI

This course is an introduction to the fundamental principles of Computer Science and Information Technology. Students will learn about the history and evolution of computer systems, understand the main principles of computer architecture and acquire basic knowledge of the main parts of hardware and software. In addition, they will develop skills in the use of operating systems and essential software applications.

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

- Describe the historical development and importance of computers in the modern era.
- Understand the structure and function of the basic parts of a computer, such as the central processing unit (CPU), memory, and input/output devices.
- Understand and represent data in various number systems.
- Identify and distinguish between categories of software, such as system and application software.
- Operate popular office applications such as spreadsheets to analyze and visualize data through functions (mathematical, logical statistics), charts, and summary tables.
- Develop basic problem-solving skills through the development of simple algorithms.

FUNDAMENTALS OF INDUSTRIAL MANAGEMENT & TECHNOLOGY

D. EMIRIS

The course aims to welcome first-year students of the Undergraduate Program in Industrial Management and Technology, offering them a comprehensive and well-rounded introduction to the fundamental concepts, applications, and overall philosophy of the field. Through ten interactive and thematic seminars, students will gain:

- A broad understanding of Industrial Management and its connection with industrial technology.
- Insight into the structure, objectives, and rationale of the study program.
- Guidance on organizing and managing their studies.

- Awareness of the professional prospects and academic opportunities that a degree in Industrial Management and Technology provides.

The course encourages active participation and concludes with the completion of a brief individual or group project.

- Upon successful completion of the course, students will be able to:
- Recognize the basic concepts of Industrial Management and distinguish it from related scientific fields.
- Understand how technology and production processes are integrated into management principles.
- Analyze the structure, courses, and developmental logic of the study program.
- Assess their personal expectations and goals based on the industry's prospects.
- Develop basic skills in study management, career orientation, and personal organization.

2ND SEMESTER

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.
- 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.

ECONOMICS II

K. KONSTANTAKIS

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.

INTRODUCTION TO ENGINEERING MECHANICS

N. CHATZIDAI, ADJUNCT INSTRUCTOR

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.

INDUSTRIAL PROCESSES

D. SIDIRAS, A. GERONTI

The course focuses on the analytical and systematic understanding of the operation of complex production systems, aiming to strengthen students' ability to analyze, evaluate, and optimize industrial processes using techno-economic and environmental criteria. Specifically, students will become familiar with:

- Analyzing the dynamics and stability of complex industrial systems and processes
- Using computational tools to assess variable operating conditions and predict critical points
- Estimating the optimal capacity and efficiency of industrial units
- Evaluating scale-up scenarios from laboratory to pilot and then to industrial scale
- Investigating combined processes involving various technologies and subsystems (e.g., recycling, energy recovery, raw material substitution)
- Analyzing the relationship between process conditions and product quality
- Studying the integration of green technologies and energy-saving solutions

- Understanding the interconnection of production, energy, and environment through case studies

The course incorporates laboratory and computational applications, utilizing digital tools for simulation and decision support in industrial operations.

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

- Apply computational tools to complex and dynamic production scenarios.
- Use simulation software for the analysis and optimization of production units.
- Design and assess alternative resource and energy flow management strategies.
- Identify and propose improvements to production subsystems, based on technical and economic criteria.
- Approach the production process as a system under constraints, including energy, environmental impact, capacity, and quality.

E-BUSINESS - MULTIMEDIA

G. CHONROKOUKIS, V. KANELLIDIS

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.

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

- Describe the procedure to be followed for constructing an e-commerce site.
- Understand issues relevant to the selection of the most suitable material for the ecommerce site.
- Build a website.
- Build an online store.

- Study the usability of a website.
- Evaluate sites using appropriate model.

INDUSTRIAL TECHNOLOGY LABORATORY

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

The primary objective of the course is to introduce students to the fundamental scientific and research methodologies applied in the industrial production of chemical products. During the laboratory sessions, participants become familiar with experimental procedures and computational simulation techniques related to the analysis, control, and optimization of production processes. The course presents typical examples of modern technology, aiming to foster an understanding of complex phenomena and to bridge theoretical knowledge with practical applications. The laboratory experience enhances the development of skills essential for solving technological problems and evaluating the performance of industrial systems. Classes are held at the Industrial Process Simulation Laboratory, with an emphasis on:

- The basic principles of experimental design
- The modeling and analysis of industrial processes
- The identification of critical parameters in production systems for the creation of reliable models
- The application of physical and computational simulations and the processing of results
- The formulation, validation, and adjustment of models based on experimental data
- The making of techno-economic decisions within the production process framework

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

- Apply fundamental principles of modeling and systems approaches to solve complex problems in the design and production of chemical products.
- Understand the concept of equilibrium in dynamic systems and solve related problems.
- Describe physical and chemical process systems and employ basic methods (both computational and physical simulation) to study them.
- Utilize models to represent key industrial processes.
- Process experimental results and use them for model development, validation, and modification.
- Apply techno-economic criteria to support decision-making.

3RD SEMESTER

STATISTICS

N. RACHANIOTIS

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.

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, students will have acquired the necessary knowledge and skills to:

- Understand the role and objectives of Financial Management, as well as the basic financial functions of a business.
- Analyze and evaluate issues related to dividend policy and the formation of capital structure in the modern business environment.
- Examine alternative investment options and assess methods of financing them.
- Apply basic methods for measuring the risk and return of investments.

INTRODUCTION TO MECHANICS OF MATERIALS

D. KARALEKAS, N. CHATZIDAI

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 the loading of a component, classify its response and determine where supplemental material can be found to aid in analysis of its response.

TOTAL QUALITY MANAGEMENT

C. *SIONTOROU*

The primary goal of this course is to introduce students to the concepts, principles, and tools of Total Quality Management (TQM), with an emphasis on understanding and applying them within the dynamic and demanding environment of modern organizations. During the course, the following thematic units are presented:

- The fundamental concepts of quality, total quality management, continuous improvement, and quality cost.
- The main methods and tools of total quality management.
- The quality assurance systems and international standards, with special focus on ISO 9001 and EMAS.

Particular emphasis is placed on linking quality with strategy and organizational culture, aiming for the long-term improvement of overall performance and sustainability of organizations. Theoretical concepts are supported by examples and case studies from industry and the service sector, promoting a practical and thorough understanding of TQM tools.

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

- Understand the strategic importance of Total Quality Management as a key tool for enhancing organizational performance and sustainability, while appreciating the critical factors and cultural change necessary for its successful implementation.
- Define the concept of quality, describe its key dimensions, and evaluate products/services based on these dimensions, translating customer requirements into quality terms.
- Understand the categories of quality costs and calculate the cost of simple quality management programs.
- Apply basic TQM tools such as Ishikawa diagrams, Pareto charts, and flowcharts.
- Utilize process improvement methods including the 5 Whys, benchmarking, brainstorming, Plan-Do-Check-Act (PDCA), Kaizen, failure analysis, and Six Sigma.
- Analyze production problems and propose corrective actions by interpreting the causes of failures.
- Apply the basic principles of the Taguchi approach to identify critical factors and evaluate the impact of production process variability.
- Apply quality award principles for designing organizational improvement plans.
- Understand total quality management standards and apply their fundamental principles to develop and improve quality management systems.
- Understand the development and certification process of total quality systems, along with the advantages and challenges involved.

FOREIGN LANGUAGE

The Foreign Language Program aims to progressively develop students' language proficiency in English, French, or German, depending on their choice, over the course of four semesters. The objective is to strengthen students' communicative competence in both academic and professional contexts, enhancing their ability to comprehend and produce spoken and written language, as well as to become familiar with basic terminology relevant to their field of study. Teaching is based on authentic and specialized materials (texts, articles, presentations, advertisements, reports, etc.), tailored to the needs of higher education and future professional requirements. Emphasis is placed on both general linguistic skills and the development of academic and professional competencies such as note-taking, presenting, academic or professional writing, and the understanding of specialized terms and concepts.

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

- Understand, interpret, and process authentic written and spoken texts of general and specialized interest, with a focus on topics related to their academic and professional field.

- Use the target language to describe academic systems, professional environments, and educational programs, while making cultural or institutional comparisons.
- Communicate effectively in both written and spoken language in formal and semi-formal contexts (e.g., presentations, correspondence, discussions).
- Analyze and present information from specialized texts or sources within their scientific or business domain.
- Use basic terminology (economic, business, technological, industrial, social—depending on their field of study) to read and compose simple texts.
- Demonstrate fundamental academic literacy skills (e.g., active reading, note-taking, understanding of charts or tables).
- Participate in international exchange environments (such as Erasmus+), developing intercultural communication skills.
- Identify their own language limitations and pursue continuous self-improvement through assessment, reflection, and the use of learning tools.

Compulsory elective courses

CHEMICAL INDUSTRIES

D. SIDIRAS, A. GERONTI

The course aims to deepen students' understanding of production processes and product characteristics in key sectors of the chemical and manufacturing industries, both organic and inorganic. It focuses on developing the ability to analyze and synthesize industrial systems using techno-economic and environmental criteria, through appropriate visualization, calculation, and evaluation tools. The course includes case studies focusing on:

- Identifying critical operational parameters that affect the quality and properties of final products.
- Saving materials and energy, recycling, and utilizing by-products.
- Evaluating environmental emissions and selecting improvement measures.
- Techno-economic assessment of production processes.

The course approach is supported by the use of computational tools for simulation, visualization, and evaluation (where applicable), with the goal of cultivating analytical and decision-making skills in the design and optimization of production systems.

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

- Analyze and represent complex production chains using flow diagrams and identify critical stages and parameters.
- Evaluate the effects of operational parameters on product quality and process efficiency.
- Use basic computational tools and models to estimate material flows and techno-economic indicators.
- Propose strategies to optimize raw material consumption, reduce waste, and improve environmental compatibility.
- Formulate solutions for by-product utilization and apply circular economy principles within industrial units.

INFORMATION SYSTEMS

ACADEMIC FELLOW

The course aims to provide an understanding of information systems and their critical role in modern organizations, as well as to familiarize students with information management technologies and the process of developing information systems that support business activities and 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

FINANCIAL ACCOUNTING

N. BELESIS

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 the changes that accounting events bring to the assets of an enterprise.

4TH SEMESTER

OPERATIONS RESEARCH I

P. EIRINAKIS

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:

- 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.

DATA PROCESSING & PROGRAMMING LANGUAGES

S. PLITSOS

The course encompasses basic programming skills and data use in the context of the Python programming language. Specifically, it focuses on the sequential execution paradigm of the language, and in the use of basic data structures. Additionally, it includes debugging techniques and basic inputoutput for programmes. Apart from the understanding of the basic concepts and the underlying theory, the course aims to bring the methodologies presented in-class, to real-world problems.

Upon successful completion of the course, the students:

- Will have formulated the ability to handle in a logically consistent and methodical manner simple Python problems.
- Will know the basic principles and concepts of sequential programming.
- Will be able to distinguish between the basic data structures that are offered by Python, and to understand the use of a basic data structure in a given application.
- Will be able to develop programmes using functions.
- Will have the ability to use input and output appropriately, in order to provide information on the execution of their programme.
- Will be able to use appropriate applications in order to develop, to run and debug their programmes.

FOREIGN LANGUAGE

The Foreign Language Program aims to progressively develop students' language proficiency in English, French, or German, depending on their choice, over the course of four semesters. The objective is to strengthen students' communicative competence in both academic and professional contexts, enhancing their ability to comprehend and produce spoken and written language, as well as to become familiar with basic terminology relevant to their field of study. Teaching is based on authentic and specialized materials (texts, articles, presentations, advertisements, reports, etc.), tailored to the needs of higher education and future professional requirements. Emphasis is placed on both general linguistic skills and the development of academic and professional competencies such as note-taking, presenting, academic or professional writing, and the understanding of specialized terms and concepts.

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

- Understand, interpret, and process authentic written and spoken texts of general and specialized interest, with a focus on topics related to their academic and professional field.
- Use the target language to describe academic systems, professional environments, and educational programs, while making cultural or institutional comparisons.
- Communicate effectively in both written and spoken language in formal and semi-formal contexts (e.g., presentations, correspondence, discussions).
- Analyze and present information from specialized texts or sources within their scientific or business domain.
- Use basic terminology (economic, business, technological, industrial, social—depending on their field of study) to read and compose simple texts.
- Demonstrate fundamental academic literacy skills (e.g., active reading, note-taking, understanding of charts or tables).
- Participate in international exchange environments (such as Erasmus+), developing intercultural communication skills.
- Identify their own language limitations and pursue continuous self-improvement through assessment, reflection, and the use of learning tools.

Free elective courses

TECHNOLOGIES & INNOVATION IN CHEMICAL PRODUCTION

D. SIDIRAS, C. SIONTOROU, A. GERONTI

The course aims to explore modern technologies and forms of innovation that significantly influence the structure, efficiency, and sustainability of industrial chemical production processes. It focuses on the transformation of traditional manufacturing through the adoption of advanced technological solutions (e.g., biotechnological applications, green chemistry), as well as the integration of innovation into the production of high value-added products (e.g., pharmaceuticals, petrochemicals, polymers, biopolymers, etc.). The course covers:

- New technologies for material production and conversion (e.g., catalytic processes, low-energy processes, bioprocesses).
- Recycling and reuse technologies for raw materials and by-products within circular production models.
- Adaptation of production systems to sustainability requirements and regulatory compliance, with an emphasis on green and low-footprint processes.

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

- Analyze the role of technological choices in designing sustainable and efficient production processes in the chemical industry.
- Understand the mechanisms of transition from traditional to innovative production systems.
- Design production flows that incorporate cutting-edge technologies (e.g., bioprocesses, green processes) aiming at the creation of high value-added products.

- Apply computational tools and models for the analysis and optimization of chemical production process parameters.
- Evaluate technological transformation scenarios using simulations and techno-economic modeling, taking into account technical, environmental, and economic criteria.

BIOTECHNOLOGY

C. SIONTOROU

This course explores the rapidly evolving field of biotechnology, focusing on both its scientific foundations and modern technological applications. Particular emphasis is placed on industrial and environmental biotechnology, as well as the societal impacts of biotechnological advancements. Through the study of innovative products and processes, the course highlights the interplay between science and technology and their role in driving economic and social development.

The course also addresses critical issues such as bioethics, biosafety, and policy governance. Special focus is given to cutting-edge areas such as biomimicry, blue biotechnology, and applications in habitat restoration—emphasizing biotechnology's role as a catalyst for green and sustainable development.

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

- Understand the contribution of modern biotechnology to scientific and technological progress.
- Identify commercial applications and innovative products resulting from biotechnological research across various sectors (health, environment, agri-food, industry).
- Explain the principles of biomimicry and their relevance to the design of new technologies.
- Analyze applications of blue biotechnology and the potential it offers in harnessing marine biological resources.
- Apply biotechnological principles to habitat restoration and environmental resilience.
- Analyze bioethical, biosafety, and regulatory issues related to the production and application of biotechnological products.
- Identify and assess the challenges of biotechnology commercialization, balancing innovation with investment risk.

ERGONOMICS

I. 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.

COST ACCOUNTING

V. ZISIS

The course “Cost Accounting” is based on concepts developed during the course "Financial Accounting" but focuses on cost accounting and delves into cost methodologies for product and/or services. Information based on these methodologies are essential in managerial decision-making. Information related to production costs is particularly important in making administrative decisions, while the estimation of products’/services’ costs is, in some cases, a particularly difficult process.

Upon successful completion of the course, students:

- Will be familiarized with the concept of cost, costing procedures as well as the basic components of cost.
- Will be able to use and analyze different costing methodologies depending on the structure of the economic entity’s production and the type of information required for successful management decision-making.
- Will broaden their horizons on methodologies for tracking the costs of products and services and on capturing the flow of costs in the accounting process.
- Will be familiarised with the theoretical background, utility and application of alternative costing approaches such as full cost and marginal/variable cost.
- Will be able to use methodologies to make short-term management decisions.
- Will have gained an overall picture of the process of measuring deviations of production costs from standard costs.

5TH SEMESTER

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

PRODUCTION PLANNING & CONTROL

ACADEMIC FELLOW

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.

FOREIGN LANGUAGE

The Foreign Language Program aims to progressively develop students' language proficiency in English, French, or German, depending on their choice, over the course of four semesters. The objective is to

strengthen students' communicative competence in both academic and professional contexts, enhancing their ability to comprehend and produce spoken and written language, as well as to become familiar with basic terminology relevant to their field of study. Teaching is based on authentic and specialized materials (texts, articles, presentations, advertisements, reports, etc.), tailored to the needs of higher education and future professional requirements. Emphasis is placed on both general linguistic skills and the development of academic and professional competencies such as note-taking, presenting, academic or professional writing, and the understanding of specialized terms and concepts.

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

- Understand, interpret, and process authentic written and spoken texts of general and specialized interest, with a focus on topics related to their academic and professional field.
- Use the target language to describe academic systems, professional environments, and educational programs, while making cultural or institutional comparisons.
- Communicate effectively in both written and spoken language in formal and semi-formal contexts (e.g., presentations, correspondence, discussions).
- Analyze and present information from specialized texts or sources within their scientific or business domain.
- Use basic terminology (economic, business, technological, industrial, social—depending on their field of study) to read and compose simple texts.
- Demonstrate fundamental academic literacy skills (e.g., active reading, note-taking, understanding of charts or tables).
- Participate in international exchange environments (such as Erasmus+), developing intercultural communication skills.
- Identify their own language limitations and pursue continuous self-improvement through assessment, reflection, and the use of learning tools.

Compulsory elective courses

SIMULATION & OPTIMIZATION OF INDUSTRIAL PROCESSES

D. SIDIRAS, N. CHATZIDAI

The course centers on an analytical and systematic deepening of the operation of complex production systems, aiming to enhance students' ability to analyze, simulate, evaluate, and optimize industrial processes using techno-economic and environmental criteria. Specifically, students will become familiar with:

- Analyzing and synthesizing dynamic and complex industrial systems
- Using computational tools, mathematical models, and commercial simulation software to simulate complex industrial systems under variable operating conditions
- Determining the optimal capacity and performance of industrial units
- Evaluating scale-up scenarios from laboratory to pilot and subsequently to industrial scale
- Investigating combined technologies and subsystems (e.g., material and energy recycling, substitution of raw materials and energy resources)
- Defining the relationship between process conditions and the quality of intermediate or final products

- Integrating green technologies and energy-saving technologies
- Understanding the functional interconnection between processes, energy, and the environment through case studies
- Incorporating computational applications using digital simulation and decision-support tools related to industrial processes

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

- Apply computational tools to industrial process systems to optimize product quality and resource efficiency.
- Select, configure, and use specialized simulation software for the analysis and optimization of production units.
- Design and assess alternative scenarios for green management of material and energy resources, within the framework of zero-waste circular economy principles.
- Identify and propose improvements in specific processes of industrial production systems, based on technical and economic criteria.
- Approach industrial production as a dynamic system subject to energy, environmental, economic, and quality constraints.

NATURAL RESOURCES MANAGEMENT & ENVIRONMENT

D. SIDIRAS, N. CHATZIDAI

This course focuses on the sustainable management of natural resources and energy, addressing both theoretical and practical issues concerning the relationship between the economy and the environment. Students examine the distinction between renewable and non-renewable natural resources, stock management, and the estimation of resource depletion time. Special emphasis is placed on conventional energy sources (such as coal, lignite, oil, and natural gas) and their environmental impacts.

As part of the course, students explore energy consumption scenarios and strategies for transitioning to renewable energy sources (RES). The main types of RES are presented, along with economic and environmental aspects such as biomass utilization and energy production from biomass.

In the context of environmental assessment, students become familiar with the material balance model, resource flow analysis, raw material recovery, as well as tools such as multi-criteria analysis, break-even analysis, and life cycle assessment (LCA) and life cycle costing (LCC) methods. The course also examines the concepts of carbon and water footprints, with a focus on their application in Greek businesses.

The course aims to provide a strong foundation for students who wish to pursue further academic or professional specialization in this rapidly developing field.

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

- Effectively manage natural resources.
- Define, distinguish, and categorize natural resources.
- Analyze the technical and economic aspects of natural resource management.
- Examine methods of resource exploitation and their relationship with environmental parameters.
- Apply models for stock depletion, break-even analysis, and multi-criteria decision analysis.
- Use methodologies for the recycling and valorization of discarded biomass.

- Utilize natural resources for industrial, energy, and environmental purposes.

OPERATIONS RESEARCH II

S. PLITSOS

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 solve structurally complex problems.
- Interpret optimization results.

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 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.

Free elective courses

INDUSTRY 4.0

V. KANELLIDIS

The course introduces students to the ecosystem of the Fourth Industrial Revolution. In this context, it explores the significance of the digital transformation taking place across the industrial sector, along with the wide range of physical and digital technologies being utilized—such as cloud computing, augmented reality, additive manufacturing, and the Internet of Things (IoT).

Beyond introducing the implementation aspects of the Fourth Industrial Revolution, the course also examines maturity and readiness models that companies can use to assess their current level of digitalization. Additionally, it addresses how to construct an optimized project portfolio for digital transformation by evaluating various project alternatives.

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

- Demonstrate knowledge of the design principles of Industry 4.0
- Demonstrate understanding of the key enabling technologies of Industry 4.0 and how they are integrated into production processes
- Demonstrate the ability to evaluate a company's digital maturity and readiness status
- Demonstrate the ability to select an optimal project portfolio for digital transformation from a range of project alternatives

MARKETING

ACADEMIC FELLOW

The purpose of this course is to understand Marketing as a holistic process that involves the development, design, and implementation of programs, processes, and activities that drive a company's vision, mission, and strategic planning. Within the framework of the course, students are expected to comprehend the key decisions involved in Marketing, such as: which customers a company wants to serve, which needs it aims to satisfy, what products and services to offer, how to set prices, what messages to send and receive, and which partnerships to pursue.

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

- Understand the fundamental principles and competencies required in modern Marketing and Digital Marketing.
- Collect, analyze, and draw conclusions from market and environmental data.
- Utilize modern Marketing tools (e.g., the 4Ps framework, user personas (UX), social media, return on investment, etc.).
- Develop Marketing strategies through segmentation, targeting, and positioning.
- Understand and apply analytical tools (Marketing Analytics) necessary for strategic marketing decision-making.

WEB BASED INFORMATION SYSTEMS

G. CHONDROKOUKIS

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.

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

- Demonstrate knowledge on modern information and marketing technologies.
- Use information systems and modern technologies / tools.
- Implement electronic and mobile marketing as well as social media marketing.
- Handle tools to measure the effectiveness of the above applications.

6TH SEMESTER

ENGINEERING ECONOMICS

V. STAVRAKAS

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 technoeconomic 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.

PROJECT MANAGEMENT

D. EMIRIS, P. EIRINAKIS

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:

- 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.

FOREIGN LANGUAGE

The Foreign Language Program aims to progressively develop students' language proficiency in English, French, or German, depending on their choice, over the course of four semesters. The objective is to strengthen students' communicative competence in both academic and professional contexts, enhancing their ability to comprehend and produce spoken and written language, as well as to become familiar with basic terminology relevant to their field of study. Teaching is based on authentic and specialized materials (texts, articles, presentations, advertisements, reports, etc.), tailored to the needs of higher education and future professional requirements. Emphasis is placed on both general linguistic skills and the development of academic and professional competencies such as note-taking, presenting, academic or professional writing, and the understanding of specialized terms and concepts.

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

- Understand, interpret, and process authentic written and spoken texts of general and specialized interest, with a focus on topics related to their academic and professional field.
- Use the target language to describe academic systems, professional environments, and educational programs, while making cultural or institutional comparisons.
- Communicate effectively in both written and spoken language in formal and semi-formal contexts (e.g., presentations, correspondence, discussions).
- Analyze and present information from specialized texts or sources within their scientific or business domain.
- Use basic terminology (economic, business, technological, industrial, social—depending on their field of study) to read and compose simple texts.
- Demonstrate fundamental academic literacy skills (e.g., active reading, note-taking, understanding of charts or tables).
- Participate in international exchange environments (such as Erasmus+), developing intercultural communication skills.
- Identify their own language limitations and pursue continuous self-improvement through assessment, reflection, and the use of learning tools.

QUEUEING THEORY AND SYSTEMS SIMULATION

A. *BOUSDEKIS*

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.

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, 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.

Free elective courses

RECYCLING: ECONOMIC & TECHNOLOGICAL ISSUES

ACADEMIC FELLOW

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

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

- Select the appropriate recycling technology based on techno-economic and social criteria.
- Develop basic mathematical models to describe various processes.
- Evaluate and utilize alternative waste/garbage management models.

SHIPPING POLLUTION

A. *PANTOUVAKIS*

Offered by the Department of Maritime Studies - Language of Instruction and Examinations: English

The course focuses on the environmental challenges facing the shipping industry and the marine environment. It explores the sources and types of marine pollutants, the impact of maritime activities on ecosystems, and the regulatory framework governing marine pollution. Emphasis is placed on sustainable practices, smart shipping technologies, and environmental port management, equipping students with the knowledge and skills to contribute to a cleaner, more responsible maritime sector.

Upon successful completion of the course, the students will:

- Be able to identify the types of marine pollutants.
- Understand the need to improve the environmental performance of shipping.
- Have the skills to evaluate the various options for a smart shipping industry.

- Know how to apply an environmental port management scheme.

SHIPPING MANAGEMENT

A. PANTOUVAKIS

Offered by the Department of Maritime Studies

The main purpose of the course is the combination of theories and tools of management, organization and organizational behavior, which adjusts and refines to analyze the organizational and administrative features of shipping business. Particular emphasis is given to the analysis of practical applications and examples. The course aims to provide knowledge and methodological tools of the Business Administration and deepen students' knowledge in specific sections of the organization and management of shipping companies. In the subject matter contained case studies and examples from the shipping industry aimed at enriching the analysis and understanding of the course.

More specifically, with the successful completion of the course, students will:

- Be familiar with the philosophy and content of the basic theories of business organization and management in the maritime industry (knowledge).
- Adapt the theoretical tools and concepts of management to the particular shipping environment (application).
- Describe the special characteristics of shipping companies, understand how they work and compare the peculiarities observed in the organization and administration in relation to organizations in other sectors (knowledge, understanding and evaluation).
- Understand and analyze the challenges of the internal and external environment in which modern shipping organizations operate (understanding and analysis).
- Know, distinguish and describe the basic functions of shipping companies (knowledge).
- Know concepts such as segmentation in shipping companies, human resources and how it is managed, and security (knowledge).

ARTIFICIAL INTELLIGENCE

ACADEMIC FELLOW

The course provides basic knowledge of artificial intelligence as it analyzes a series of topics that constitute its core, from data processing, cleaning and enrichment and the selection of appropriate learning methods, to the creation of different Machine Learning models and applications, including Neural Networks and Deep Learning architectures, as well as Reinforcement Learning techniques.

Upon successful completion of the course, students will:

- Know basic issues of artificial intelligence as well as its modern applications.
- Be familiar with data management with the Python programming language.
- Know the basic principles of machine learning.
- Understand the type of learning required for each problem (prediction, classification, clustering) and the type of models that should be used.

- Be able to develop artificial intelligence models using the Python programming language.
- Know how to model problems and solve them using reinforcement learning.
- Be able to create methods for solving problems with reinforcement learning using the Python programming language.

SPECIAL TOPICS IN OPERATIONS RESEARCH

S. PLITSOS, A. GERONTI

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.

7TH SEMESTER

QUALITY ASSURANCE AND CONTROL

A. BOUSDEKIS

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.

ENERGY TECHNOLOGIES & THE ENVIRONMENT

A. FLAMOS, V. STAVRAKAS

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.

RESEARCH METHODOLOGY & ETHICS

D. EMIRIS, C. SIONTOROU, A. GERONTI

The purpose of the course is for students to understand the fundamental principles of research methodology and to acquire the necessary knowledge and skills for designing and conducting small-scale scientific projects. The course focuses on writing techniques, the use of modern tools for searching, processing, and presenting data, as well as proper documentation and referencing of bibliographic sources. Through practical examples, case studies, and supportive audiovisual material, students become familiar with the language of science as a communication tool, the formulation of research problems and hypotheses, the evaluation of sources, and the writing and presentation of scientific and technical texts.

Special emphasis is placed on developing skills related to organization and teamwork, as well as fostering ethical awareness by adhering to principles of academic integrity, avoiding plagiarism, and responsibly managing scientific information.

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

- Understand the basic principles of research methodology.
- Design and organize small-scale scientific works (studies, reviews, technical texts, etc.).
- Effectively use ICT tools for searching, processing, presenting, and documenting scientific data.
- Critically evaluate and use bibliographic sources and information.
- Formulate research questions and organize their topics into thematic subunits and parameters.
- Compose scientifically substantiated texts, following structural, linguistic, and bibliographic referencing requirements.

- Deliver clear and consistent oral presentations of scientific or technical work.
- Actively participate in the design and implementation of group projects by taking on roles and adhering to timelines.
- Consistently apply the principles of research ethics and academic integrity, avoiding plagiarism and unreliable documentation.
- Recognize the contribution of scientific work to the production and dissemination of knowledge.

Compulsory elective courses

COMPUTER-AIDED PRODUCT DESIGN

I. GIANNATSIS

The course introduces students to the design of products/assemblies/machines, focusing especially on the relationship between product design and production processes. In this context, the Design for Manufacturing & Assembly (DFM&A) methodology is discussed, as well as design aspects of automated and digital manufacturing processes. Basic elements of technical/engineering drawing and geometric data representation/processing techniques are, also, presented. For a more complete presentation of the above topics, design laboratory lectures are held using modern Computer-aided Design (CAD) software/applications.

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

- Demonstrate knowledge on the product design processes and techniques.
- Demonstrate knowledge on the basic mathematical background required for industrial product design and analysis.
- Demonstrate knowledge on product design methodologies focused on production (DFM&A).
- Demonstrate knowledge on the features and codes of the technical drawing.
- Demonstrate knowledge on the capabilities and features of modern CAD software/tools.

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.

Free elective courses

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.

RISK MANAGEMENT IN PODUCTION SYSTEMS

N. RACHANIOTIS

The subject of the course is to identify, assess and address the threats for business continuity at all stages of production and supply of modern enterprises.

More specifically, the potential risks associated with the individual processes of production systems (supplies, production, storage, transport, demand response) and related approaches to the design, control and management of production systems as a whole are presented and analyzed. Particular emphasis is placed on risk management in the case of production systems that are part of wider/globalized supply chains. Finally, risk mitigation strategies are presented, as well as best practices adopted by innovative companies for risk management in production / supply processes.

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

- Demonstrate knowledge on the basic principles and approaches for risk identification in business and the management of production units
- Develop methodological tools for assessing and prioritizing risks
- Recognize the content and the results in a risk report
- Apply qualitative and quantitative methods to a risk management model in an enterprise or production unit
- Identify the content and main parts of the process of risk monitoring and assessment in enterprises and the management of production units

ENVIRONMENTAL PROTECTION TECHNOLOGIES

ACADEMIC FELLOW

The course examines the fundamental principles of natural resource and waste management, focusing on methods for treating solid and liquid waste as well as addressing air pollution. It also analyzes the regulatory framework at the European and national levels, with emphasis on the implementation of the Waste Framework Directive. Additionally, it presents environmental management standards (ISO 14001, EMAS) and the certification process through case studies of Greek companies.

The course aims to provide a foundation for further professional or academic specialization in this rapidly evolving field.

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

- Classify waste based on its qualitative and quantitative composition.
- Understand solid and liquid waste management issues.
- Evaluate methods for solid waste treatment.
- Manage liquid waste effectively.
- Assess methods for wastewater treatment.
- Understand adsorption technologies and adsorbent materials.
- Apply simulation and modeling to adsorption processes.
- Know the issues related to air pollution and air quality.
- Select methods for recycling and energy conservation.
- Understand environmental management systems.
- Apply Environmental Management Standards in Greek business contexts.

SHIP TECHNOLOGY

S. CHATZINIKOLAOU

Offered by the Department of Maritime Studies

This course is an introduction to the fundamental concepts of ship technology. The course content aims to familiarize students with the basic concepts of ship technology and to help them understand the main design, construction, and operational characteristics of ships, with a focus on describing the essential elements of the general arrangement of modern vessels.

The syllabus also includes basic topics of ship theory, such as the displacement equation and transverse stability for small angles of heel. For large angle stability, the course outlines the main requirements of international regulations. The course presents the structure of the regulatory framework of commercial shipping concerning the design, construction, and operation of ships, highlighting the roles of the various stakeholders and the main international regulations that are enforced. Examples are provided to demonstrate how inspections, surveys, and certification of commercial vessels are conducted throughout their life cycle, based on the requirements of flag states, classification societies, and port state control authorities.

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

- Understand the basic ship terminology and identify the elements of the general arrangement of modern commercial vessels.

- Have knowledge of the weight groups in the displacement equation and be able to solve practical problems using the relevant formulas (including weight components, principal dimensions, and form coefficients).
- Understand and justify the key design, construction, and operational features of modern commercial ships.
- Comprehend the fundamental principles of transverse stability and interpret/evaluate a ship's stability condition using the applicable regulations.
- Understand the structure of the international maritime regulatory framework related to the design, construction, and operation of commercial ships, and identify the primary roles of the authorities enforcing these regulations.

INTRODUCTION TO SYSTEMS' MODELLING, SIMULATION & OPTIMIZATION

V. STAVRAKAS

The course aims to introduce students to methods of modeling, simulation, and optimization of physical systems and processes. Students will develop skills in formulating mathematically equivalent systems across various fields such as engineering, energy, and economics. Through simple applications, the course focuses on understanding the basic concepts and properties of modeling and simulation methods (e.g., analytical models, numerical models, statistical models, etc.). In addition, students will gain hands-on experience in performing simulations and analyzing their results. To achieve these objectives, the course includes laboratory sessions where students will develop, parameterize, and run simulations, as well as present the conclusions derived from them. Finally, the course emphasizes student collaboration by assigning group projects aimed at solving real-world problems using modeling techniques, and it also fosters public speaking skills by giving each student the opportunity to present modeling results in front of their peers.

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

- Understand fundamental concepts and methods of modeling, simulation, and optimization of physical and technological systems.
- Develop simple mathematical models (analytical, numerical, or statistical) for applications in engineering, energy, and economics.
- Use software tools for building models, running simulations, and analyzing their results.
- Collaborate in teams to solve real-world problems using modeling and simulation techniques.
- Present their work results clearly and with proper justification, developing public speaking and technical communication skills.

PROJECT I

SUPERVISING FACULTY MEMBER

The graduate thesis (GT) is grounded in the application of scientific methods, tools, and theories acquired during the undergraduate program. It is expected to meet high academic standards, while giving students the opportunity to take initiative and explore specific topics within the program's areas of study. Through the thesis process, students are expected to demonstrate that they have achieved the key learning outcomes of their degree.

The GT involves two elective courses, “Project I” and “Project II,” offered in the 7th and 8th semester, respectively. Students who wish to complete a thesis must enroll in and complete both courses. Final grades for these courses are submitted during the September resits of the corresponding academic year.

At the start of each academic year, the Department’s Secretariat announces the available thesis topics and their supervisors, both through written notices and on the Department’s website. Students can express their interest in a thesis topic directly to the relevant supervisor during the elective course registration period of the 7th semester. Supervisors assign thesis topics based on the student’s academic performance, interests, and skills, finalized after a short interview. Once confirmed, the assignment is submitted to the Department’s Secretariat, which records the information and sends the final list to the Department’s Assembly for the appointment of the three-member examination committees.

Thesis completion involves the writing of the dissertation according to the official thesis template (https://www.tex.unipi.gr/kanonismoi/?lang=en) and its successful defense before the three-member Examination Committee. The process is carried out in accordance with the current Graduate Thesis Regulations (https://www.tex.unipi.gr/wp-content/uploads/2024/05/graduate-thesis-guide.pdf).

Upon successful completion of the thesis, students will have:

- Deepened their understanding of a specific topic within the scientific fields covered by the Department.
- Systematically applied the knowledge and skills acquired throughout their undergraduate studies.
- Developed synthetic and critical thinking in processing scientific material.
- Identified, evaluated, and utilized relevant scientific literature.
- Cultivated academic writing skills in accordance with scholarly standards.
- Organized and presented their research topic effectively in oral form.
- Gained practical experience in laboratory research, where applicable.
- Acquired experience in applying research methodology and using modern research tools and techniques.

INDUSTRIAL TRAINING I

INDUSTRIAL TRAINING OFFICE, G. GIANNATSIS

The course offers students the opportunity to become familiar with real workplace environments, acquire new knowledge, participate actively in teamwork and decision-making processes, develop their skills, contribute to the design and completion of projects, and gain hands-on work experience. Additionally, it serves as a useful tool for assessing both the students’ academic background and skill set, to: (a) help students identify areas for improvement and take appropriate steps to enhance their career prospects, and (b) enable the Department to implement targeted interventions aimed at improving teaching and learning practices.

The Industrial Training is intended for students in the 7th and 8th semesters of the program. It is offered as part of the elective courses “ Industrial Training I” (7th semester) and “ Industrial Training II” (8th semester). A basic requirement for participation is that students must register for only one of the two courses during the corresponding semester.

Each internship lasts for two (2) months of full-time employment, in accordance with the Industrial Training Regulation (https://www.tex.unipi.gr/wp-content/uploads/2019/09/kanonismos-praktikhs-askhshs-en.pdf). The internship may begin on any working day of the year, provided that the following conditions have been met:

- The student’s course registration has been finalized by the Department’s Secretariat.

- The proposed internship period has been approved by the Research Committee of the University of Piraeus Research Center.
- Upon successful completion of the program, students will be able to:
- Familiarize themselves with real work environments and apply theoretical knowledge acquired during their studies.
- Develop professional and interpersonal skills, including teamwork, communication, and decision-making.
- Actively participate in the design, implementation, and completion of assigned tasks or projects, enhancing their organizational abilities.
- Strengthen problem-solving, adaptability, and initiative-taking skills within a professional setting.
- Evaluate their own professional potential and identify areas for improvement to support their career development.
- Contribute to the Department's feedback process regarding the effectiveness of academic preparation, helping to improve educational practices.

8TH SEMESTER

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 capabilities 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.

PRODUCTION TECHNOLOGIES - ROBOTICS

D. EMIRIS, ADJUNCT INSTRUCTOR

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, students:

- 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. CHONDROKOUKIS

The aim of this course is to familiarize students with various issues related to the practical application of Advanced Technologies and Managerial Methodologies that govern modern Industrial Enterprises and Production Units. In previous semesters, students have been introduced to — and have primarily acquired theoretical knowledge of — the core methodologies of Management Science as well as the fundamental technologies underpinning modern Production Systems. This course complements that foundational knowledge by presenting the practical implementation of such techniques through lectures, presentations, and talks that focus on real-world problems and case studies encountered by industrial enterprises. These sessions are delivered by invited professionals from relevant industries and/or distinguished researchers and academics.

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

- Understand the current industrial landscape and the challenges it faces.
- Deepen their knowledge of problem analysis and resolution methodologies.
- Effectively apply the techniques taught in class to real-world situations.

Free elective courses

RELIABILITY & MAINTENANCE OF TECHNOLOGICAL SYSTEMS

A. *BOUSDEKIS*

The course covers the theoretical background of reliability and maintenance of industrial equipment, including fundamental reliability functions and distributions, as well as topics related to the maintenance process and maintenance and replacement policies. It also includes the use of relevant indicators for the techno-economic analysis of different maintenance policies. Furthermore, the course examines reliability and maintenance from the perspective of green and digital industry, incorporating Life Cycle Assessment (LCA) techniques, Machine Learning algorithms for predictive maintenance, and approaches related to "digital disruption" in the adoption of relevant information systems within the framework of Industry 4.0.

Upon successful completion of the course, students will:

- Have acquired the theoretical background of reliability and maintenance of industrial equipment, including fundamental reliability functions and distributions, as well as topics related to the maintenance process and maintenance and replacement policies.
- Be able to study reliability and maintenance from the perspective of green and digital industry.
- Be capable of applying Life Cycle Assessment (LCA) techniques in the context of industrial maintenance.
- Be familiar with approaches related to "digital disruption" in the adoption of relevant information systems within the framework of Industry 4.0.
- Be able to select and apply appropriate Machine Learning algorithms to industrial maintenance problems using the Python programming language.

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.

ENERGY TRANSITION & SUSTAINABILITY

V. STAVRAKAS

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, 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.

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:

- 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.

PRODUCT DEVELOPMENT & 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”.

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 familiar with advanced analytical and manufacturing design tools.
- Possess advanced knowledge of issues concerning the development, design, technoeconomic 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.

COMPUTATIONAL METHODS / TOOLS IN INDUSTRIAL MANAGEMENT

ACADEMIC FELLOW

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.

PROJECT II

SUPERVISING FACULTY MEMBER

The graduate thesis (GT) is grounded in the application of scientific methods, tools, and theories acquired during the undergraduate program. It is expected to meet high academic standards, while giving students the opportunity to take initiative and explore specific topics within the program's areas of study. Through the thesis process, students are expected to demonstrate that they have achieved the key learning outcomes of their degree.

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- Identified, evaluated, and utilized relevant scientific literature.
- Cultivated academic writing skills in accordance with scholarly standards.
- Organized and presented their research topic effectively in oral form.
- Gained practical experience in laboratory research, where applicable.
- Acquired experience in applying research methodology and using modern research tools and techniques.

INDUSTRIAL TRAINING II

INDUSTRIAL TRAINING OFFICE, G. GIANNATSIS

The course offers students the opportunity to become familiar with real workplace environments, acquire new knowledge, participate actively in teamwork and decision-making processes, develop their skills, contribute to the design and completion of projects, and gain hands-on work experience. Additionally, it serves as a useful tool for assessing both the students' academic background and skill set, to: (a) help students identify areas for improvement and take appropriate steps to enhance their career prospects, and (b) enable the Department to implement targeted interventions aimed at improving teaching and learning practices.

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

- Familiarize themselves with real work environments and apply theoretical knowledge acquired during their studies.
- Develop professional and interpersonal skills, including teamwork, communication, and decision-making.
- Actively participate in the design, implementation, and completion of assigned tasks or projects, enhancing their organizational abilities.
- Strengthen problem-solving, adaptability, and initiative-taking skills within a professional setting.
- Evaluate their own professional potential and identify areas for improvement to support their career development.
- Contribute to the Department's feedback process regarding the effectiveness of academic preparation, helping to improve educational practices.