The Department of Information and Communication Systems Engineering is one of the pioneering departments of the University of the Aegean.

It has been designed and operates so as to offer high quality courses, within a creative environment, with emphasis on the connection of studies with practical application and research.

This guide contains all the necessary information for current, as well as future students of the Department.
Contents
The establishment of the University of the Aegean is the realization of an idea of the great Greek mathematician Constantine Caratheodory.

The University of the Aegean was founded in 1984 and is one of the newest universities in Greece. Today, having completed the second phase of its development with eighteen (18) academic Departments, more than forty (40) Postgraduate Programs and eighteen thousand (18,000) undergraduate and graduate students, the University of the Aegean ranks among the largest universities in the country.

Administrative headquarters of the University is Mytilene, while various departments have been established in towns of the islands of Lesvos (Mytilene), Chios (Chios), Samos (Karlovasi), Rhodes (Rhodes), Syros (Ermoupolis) and Lemnos (Myrina), forming a University-network covering both the administrative divisions of the Aegean (North and South Aegean).

The University of the Aegean, with its spatial dispersion, aims to provide modern scientific education and to promote high quality basic and applied research. Keeping a flexible, non bureaucratic, organizational structure, it has established high standards for the scientific level of both its graduates, and the research and teaching staff.
The main feature of the Departments of the University is the development of innovative disciplines, often interdisciplinary, which meet the needs of modern Greek and international society, as well as the demands and expectations of students for studies of high scientific value, combined with excellent prospects for career development.

The University of the Aegean is growing steadily and methodically, according to the Strategic Plans and the Five-Year Development Plans prepared. These plans reflect the experiences gained both from the operational difficulties of academic departments on border islands and the communication within a University-network, which operates under the particular conditions of the Greek Archipelago. These experiences led the University of the Aegean to be the first Greek University that fully integrates the information and communication technologies in everyday broad administrative practice, thereby creating the conditions of development of a Society of Information and Knowledge.
**Schools and Departments**

Currently the University of the Aegean comprises the following eighteen (18) Departments and six (6) Schools:

<table>
<thead>
<tr>
<th>School of Engineering</th>
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<tbody>
<tr>
<td>Dept. of Information and Communication Systems Engineering (Samos)</td>
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<tr>
<td>Dept. of Product and Systems Design Engineering (Syros)</td>
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<tr>
<td>Dept. of Financial and Management Engineering (Chios)</td>
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<table>
<thead>
<tr>
<th>School of Sciences (Samos)</th>
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<tr>
<td>Dept. of Mathematics</td>
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<tr>
<td>Dept. of Statistics and Actuarial-Financial Mathematics**</td>
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<tr>
<th>School of Social Sciences (Lesvos)</th>
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<tr>
<td>Dept. of Social Anthropology and History</td>
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<tr>
<td>Dept. of Geography</td>
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<tr>
<td>Dept. of Sociology</td>
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<tr>
<td>Dept. of Cultural Technology and Communication</td>
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<tr>
<th>School of the Environment (Lesvos)</th>
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<tbody>
<tr>
<td>Dept. of Environment</td>
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<tr>
<td>Dept. of Marine Sciences</td>
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<tr>
<td>Dept. of Food Sciences and Nutrition (Lemnos)</td>
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<tr>
<th>School of Business (Chios)</th>
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<tr>
<td>Dept. of Business Administration</td>
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<tr>
<td>Dept. of Shipping, Trade and Transport</td>
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<tr>
<td>Dept. of Tourism Economics and Administration</td>
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<tr>
<th>School of Humanities (Rhodes)</th>
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<tr>
<td>Dept. of Primary Education</td>
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<tr>
<td>Dept. of Pre-School Education and Educational Design</td>
</tr>
<tr>
<td>Dept. of Mediterranean Studies</td>
</tr>
</tbody>
</table>
The University of the Aegean is managed by the Senate, the Rector and the Vice Rectors, who, for the academic year 2018-2019 are:

**Rector**
- Professor Chryssi Vitsilaki

**Vice Rectors**
- Associate Professor Maria Mavri, Department of Business Administration
- Professor Dimitris Papageorgiou, Department of Cultural Technology and Communication
- Professor Charalambos Skianis, Department of Information and Communication Systems Engineering
- Professor Helen Theodoropoulou, Department of Pre-School Education Sciences and Educational Design
The administrative facilities of the University of the Aegean are located at the following places:

**Lesvos (University Headquarters - Rector’s Office)**  
University Hill, Administration Building, Mytilene, Lesvos, GR- 81100, Greece  
Tel. +30-22510-36000 | Fax: +30-22510-36009

**Syros (School of Engineering’s head office):**  
1 Constantinoupolos str. 841 00, Ermoupolis, Syros  
Dean of School of Engineering: Spyros Kokolakis, Associate Professor, Department of Information and Communication Systems Engineering

**Samos**  
Karlovasi, Samos, GR-83200, Greece

| Administrative Head | Fotis Kyriakou | Tel.: +30-22730-82015  
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|---------------------|---------------|------------------------|
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Fax: +30-22730-82219  
Email: rena@aegean.gr |
| Undergraduate Studies Secretariat of the Department of Information and Communication Systems Engineering | Alexandros Shoinas | Tel.: +30-22730-82021  
Fax: +30-22730-82219  
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| | Eirini Grammatikou | Tel.: +30-22730-82026  
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<table>
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<tr>
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<th>Name</th>
<th>Tel.</th>
<th>Fax</th>
<th>Email</th>
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<tbody>
<tr>
<td>Computing Center</td>
<td>Aggeliki Parianou</td>
<td>+30-22730-82046</td>
<td>+30-22730-82049</td>
<td><a href="mailto:apr@aegean.gr">apr@aegean.gr</a></td>
</tr>
<tr>
<td></td>
<td>Nikos Zacharis</td>
<td></td>
<td></td>
<td><a href="mailto:nzar@aegean.gr">nzar@aegean.gr</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Helpdesk Tel. +30-22730-82166</td>
</tr>
<tr>
<td>Library</td>
<td>Vasiliki Gouvala</td>
<td>+30-22730-82030</td>
<td>+30-22730-82039</td>
<td><a href="mailto:vgou@aegean.gr">vgou@aegean.gr</a></td>
</tr>
<tr>
<td>Administrative Services</td>
<td>Manto Katsiani</td>
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<td>+30-22730-82008</td>
<td><a href="mailto:manto@aegean.gr">manto@aegean.gr</a></td>
</tr>
<tr>
<td></td>
<td>Grammatiki Chatzikonstanti</td>
<td>+30-22730-82017</td>
<td>+30-22730-82009</td>
<td><a href="mailto:kchatz@aegean.gr">kchatz@aegean.gr</a></td>
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<tr>
<td>Financial Services</td>
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<td></td>
<td><a href="mailto:fotisk@aegean.gr">fotisk@aegean.gr</a></td>
</tr>
<tr>
<td>Technical Services</td>
<td>Constantinos Protopappas</td>
<td>+30-22730-82056</td>
<td></td>
<td><a href="mailto:Samos_tech_ypir@samos.aegean.gr">Samos_tech_ypir@samos.aegean.gr</a></td>
</tr>
<tr>
<td>Public/ International Relations and Publications</td>
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<td>+30-22730-82007</td>
<td><a href="mailto:ntsesm@aegean.gr">ntsesm@aegean.gr</a></td>
</tr>
</tbody>
</table>

For more information about the University of the Aegean please visit our web site: [http://www.aegean.gr](http://www.aegean.gr)

For the School of Engineering please visit our web site: [http://eng.aegean.gr](http://eng.aegean.gr)
The islands of the Aegean possess an architectural wealth of significant historical value. The exploitation of this wealth by the University of the Aegean contributes to the preservation of our national heritage. The aim of the University is that its activities are housed – where possible – in traditional buildings on the islands.

On the island of Samos, the University of the Aegean utilizes the following buildings:

**Karlovasi**
- Emporiki Sholi Building (Classrooms, Helpdesk)
- Igemoneio (Faculty Offices of Mathematics Department, Secretariat)
- Chatzigionneio (Library)
- Liberis Building (School of Science Secretariat, Faculty Offices of the Department of Information and Communication Systems Engineering, Secretariat, Classroom, Laboratories)
- Vourlioti Building (Faculty Offices of the Department of Statistics and Actuarial-Financial Mathematics, Secretariat)
- Morali Building (Faculty Offices of the Department of Mathematics)
- Sofouli Building (Classrooms, Faculty Offices)
- Tsobana Building (Multimedia center)
- Kalatzis Warehouses (under construction)
- “Former Papanikolaou” Building (Offices of Postgraduate Students)
- Middle Karlovasi School Group (Classrooms)
- Student Residences of the University Unit of Samos
- “Former Katsika” Building (Technical Services)
- “Former Psatha” Building (offices)
- “Former Karagiannis” Building (warehouses)
- “Former Thrasyvoulou” Building (warehouses)
- “Former Pantazoni” Building (warehouses)
The technological revolution, which, since 1994, has led European countries to adopt, as their central objective, the development of a European Information Society, has changed radically almost every aspect of economic and social life. Despite the impressive penetration of new technologies in all areas of life, new trends and visions pop up constantly, making the field of information and communication systems the most dynamic field of modern science and technology.

At this point in time, when there is an effort for the vision of a European Information Society to be translated into action for overcoming the technical, social and economic barriers and establishing national and European information infrastructures for the benefit of European citizens and their quality of life, the scientists in this field are asked to take an important, creative, and very demanding role, as far as it regards their knowledge and skills. The Department of Information and Communication Systems Engineering of the University of the Aegean (www.icsd.aegean.gr) has, as main goal, the training of engineers with a high level of education, creative and critical spirit, able to analyze problems and take advantage of modern Information and Communication Technologies for the design, development and management of information and communication systems. The educational activity of the Department combined with the extensive activity...
in basic and applied research aims to produce new knowledge and disseminate it in a National and European level.

Since the time of its foundation in 1997, the Department had already embraced the vision that in a very short time the classical concepts of telecommunications engineers and computer scientists would no longer be a separate entity and a new integrated scientific subject, the one of Information and Communication Systems Engineering, would be required to meet those needs. The integration of information and communication technologies has given a special character to the Department, which is maintained and enhanced until today.

The Department of Information and Communication Systems Engineering of the University of the Aegean adopts the above concept as to the nature of information and communication systems. An information system is a system that is able to receive, store, retrieve and process information. It is an organized set of separate interacting components: people, processes, data, software and hardware. This approach covers not only the first component of the name of the department, but the second one as well, since according to it, the term “communication system” is not regarded as an independent and complementary subject, but as an intrinsic characteristic of an integrated information system. Thus, the two dimensions of the name of the Department reflect the completeness of the studies required to achieve the stated objectives.

The Curriculum of the Department has been designed taking into account international standards of education, which are adapted to the needs of the Greek reality. It covers all the objects that make up the core of knowledge related to information and communication systems, offering high quality courses. In this direction, student-centered teaching systems, assessment of the educational process, a high level of cooperation between teachers and students and actions connecting teaching with production are adopted.

In addition, the curriculum is constantly updated following the dynamics of the industry, so that the studies offered by the Department have always a modern, dynamic and competitive character.

Successful completion of the first circle studies, organized by the Department of Information and Communication Systems Engineering of the School of Engineering of the University of the Aegean, leads to the award of a unified and inseparable Diploma of postgraduate level (integrated master), in the specialty of the Department, of level 7 of the National and European Qualifications Framework (FEK 3524/21.08.2018).

According to the information of August 2018, the number of registered students in the Department is 1143 and 210 for the Undergraduate and Postgraduate Programmes respectively. Additionally, there are 76 PhD candidates. The total number of graduates of the Department is 544, 457 and 54 for the Undergraduate, Postgraduate and PhD Programmes respectively.
## Faculty

<table>
<thead>
<tr>
<th>Position</th>
<th>Professor</th>
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<tbody>
<tr>
<td>Head of Department</td>
<td>Associate Professor <strong>Georgios Kambourakis</strong></td>
</tr>
<tr>
<td>Vice Head of Department</td>
<td>Associate Professor <strong>Demosthenes Vouyioukas</strong></td>
</tr>
<tr>
<td>Director of Postgraduate Study Programmes before the 2018–19 academic year</td>
<td>Associate Professor <strong>Georgios Kambourakis</strong></td>
</tr>
<tr>
<td>Director of Postgraduate Study Programme ‘Information and Communication Systems Security’</td>
<td>Associate Professor <strong>Georgios Kambourakis</strong></td>
</tr>
<tr>
<td>Director of Postgraduate Study Programme ‘Internet of Things: Smart Environments in Next Generation Networks’</td>
<td>Associate Professor <strong>Demosthenes Vouyioukas</strong></td>
</tr>
<tr>
<td>Director of Postgraduate Study Programme ‘Electronic Governance’</td>
<td>Professor <strong>Euripidis Loukis</strong></td>
</tr>
<tr>
<td>Director of Postgraduate Study Programme ‘Information and Communication Systems’</td>
<td>Associate Professor <strong>Spyros Kokolakis</strong></td>
</tr>
<tr>
<td>Director of Postgraduate Study Programme ‘Digital Innovation and Startup Entrepreneurship’</td>
<td>Associate Professor <strong>Yannis Charalabidis</strong></td>
</tr>
</tbody>
</table>
Professor **Spiros Cotsakis**, Degree in Mathematics, National and Kapodistrian University of Athens, M.Sc. in Astronomy, Ph.D. in Mathematical Physics and Cosmology, University of Sussex (Differential Geometry, Mathematical Relativity, Generalized Theories, Mathematical Cosmology).


Professor **Agis Iliadis**, Degree in Physics, Aristotle University of Thessaloniki, M.Sc. in Electrical Engineering and Electronics, Ph.D. in Electrical Engineering and Electronics, University of Manchester Institute of Science and Technology (UMIST) (Semiconductors, Basic and Composite Materials for Semiconductors Construction).


Professor **Charalabos Skianis**, Degree in Physics, University of Patras, Ph.D. in Informatics, University of Bradford (Computer Networks, Modeling and Performance Evaluation of Wireless and Mobile Communication Networks).

Associate Professor **Yannis Charalabidis**, Diploma in Electrical and Computer Engineering, Ph.D. in Complex Software Systems, National Technical University of Athens (ICT enabled Collaborative Governance, Linked / Open Data, Social Participation Systems, Complex Societal Systems Modeling and Simulation, Enterprise Interoperability).

Associate Professor **Ergina Kavallieratou**, Diploma in Electrical and Computer Technology Engineering, Ph.D. in Document Image Processing and Optical Character Recognition, University of Patras (Image Processing, Computer Vision, Pattern Recognition).

Associate Professor **Spyros Kokolakis**, Degree in Informatics, Ph.D. in Information Systems, Athens University of Economics and Business (Information Systems, Information Systems Security).

Associate Professor **Georgios Kormentzas**, Diploma in Electrical and Computer Engineering, Ph.D. in Traffic Control and Management of Broadband Networks using Abstract Information Models and Distributed Object Architectures, National Technical University of Athens (Computer Networks, Wireless Communications, Service Quality, Traffic Modeling and Analysis).

Associate Professor **Manolis Maragoudakis**, Degree in Computer Science, University of Crete, Ph.D. in Artificial Intelligence, University of Patras (Data Mining, Privacy Preserving Data Mining, Machine Learning, User Modeling, Semantic Web, Databases, Bayesian Networks, Knowledge Engineering).

Associate Professor **Charis Mesaritakis** (to be appointed), Diploma in Informatics and Telecommunications, National and Kapodistrian University of Athens, Master degree in Microelectronics and Integrated Circuit Design, Departments of Physics and Informatics/Telecommunications of National and Kapodistrian University of Athens, Ph.D. in design and experimental-numerical investigation of ultra-fast photonic systems (quantum-dot devices) mainly for telecomm applications, Photonic Technology and Optical Communication Laboratory of Department of Informatics and Telecommunications, National and Kapodistrian University of Athens.

Associate Professor **Efstathios Stamatatos**, Diploma in Electrical and Computer Technology Engineering, Ph.D. in Natural Language Processing, University of Patras (Natural Language Processing, Machine Learning and Computer Music).
Associate Professor **Akrivi Vlachou** (to be appointed), Diploma in Informatics and Telecommunications, National and Kapodistrian University of Athens, M.Sc. in Advanced Information Systems, Department of Informatics and Telecommunications, National and Kapodistrian University of Athens, Ph.D. thesis entitled “Efficient Query Processing for Highly Distributed Data”, Department of Computer Science, Athens University of Economics and Business (Databases).

Associate Professor **Demosthenes Vouyioukas**, Diploma in Electrical and Computer Engineering, M.Sc. in Business Administration (MBA), Ph.D. in Wireless and Mobile Communications, National Technical University of Athens (Mobile and Satellite Communications, Digital Communication Systems, Propagation and Antennas, Broadband Networks).

Assistant Professor (tenured) **Emmanouil Kalligeros**, Diploma in Computer Engineering and Informatics, M.Sc. in Computer Science and Technology, Ph.D. in Embedded Testing of Digital Circuits, University of Patras (VLSI Design and Test, Design for Testability, CAD Methodologies for VLSI Testing, Test-Data Compression and Built-In-Self-Test Architectures).

Assistant Professor (tenured) **Alexis Kaporis**, Degree in Mathematics, Ph.D. in Threshold Phenomena in Combinatorial Problems, University of Patras (Algorithm Analysis, Probabilistic Techniques, Algorithmic Game Theory, Data Structures).

Assistant Professor (tenured) **Maria Karyda**, Degree in Informatics, M.Sc. in Information Systems, Ph.D. in Information Systems Security Management, Athens University of Economics and Business (Information Systems, Information Systems Security, Privacy, Social Networks).

Assistant Professor (tenured) **Elisavet Konstantinou**, Degree in Informatics, University of Ioannina, M.Sc. in Signal and Image Processing Systems, Ph.D. in Public Key Cryptography, University of Patras (Cryptography).
Assistant Professor (tenured) **Asimakis Leros**, Diploma in Electrical Engineering, University of Patras, M.Sc. in Electrical & Computer Engineering, University of Massachusetts at Amherst, Ph.D. in Computer Engineering and Informatics, University of Patras (Estimation Theory, Parallel Algorithms, Digital Signal Processing, Systems Modeling and Simulation).

Assistant Professor (tenured) **Theodoros Tzouramanis**, Diploma in Electrical and Computer Engineering, Ph.D. in Informatics, Aristotle University of Thessaloniki (Databases, Geographical Information Systems).

Assistant Professor **Christos Goumopoulos**, Diploma in Computer Engineering and Informatics, Ph.D. in Distributed Software Systems, University of Patras (Parallel and Distributed Computing).

Assistant Professor **Georgios Kofinas**, Degree in Physics, National and Kapodistrian University of Athens, M.Sc. in Theoretical Physics, University of Alberta, Ph.D. in Physics, National and Kapodistrian University of Athens (Relativistic Classical and Quantum Cosmology, Gravity in Higher Dimensions, Generalized Theories).

Laboratory Teaching Personnel

- **Georgios Chrysoloras**, BEng in Information and Communication Systems Engineering, University of the Aegean. MSc in Advanced Information Systems, University of Piraeus.

- **Anastasia Douma**, BEng in Informatics, Department of Informatics of the Technological Educational Institute of Athens. MSc degree in Information and Communication Systems Security, Department of Information and Communication Systems Engineering, University of the Aegean. Phd Candidate in the Department of Information and Communication Systems Engineering, University of the Aegean.

- **Dr. Dimitrios N. Skoutas**, Diploma in Electrical and Computer Engineering, University of Patras, PhD in Communication Networks, University of the Aegean (Wireless and Mobile Networks, Communication networks and systems).

- **Christina Theocharopoulou**, Degree in Mathematics, University of the Aegean. MSc in Technologies and Management of Information and Communication Systems, University of Aegean.
Basic and applied research is in the core of the transformation process of modern society into a society of knowledge. Basic research produces the knowledge, which will lead to the innovations of the future. Applied research is the answer to the constantly increasing demands for economic growth and progress, based on innovation for the benefit of the society and development of the country. The acceleration of social, economic and technological development created the need for rapid interaction between basic and applied research, particularly in the rapidly developing field of information technology and telecommunications.

Research requires robust planning, infrastructure supported by continuous investment, and, most of all, researchers with high expertise, broad and valuable knowledge base, inclination for participation in the research process and high-level collaborative view, practice and effectiveness. As a system of knowledge production, research is closely linked with education and technology.

In this context, investment in research is a primary objective and a key in the development of the Department of Information and Communication Systems Engineering. The Department invests in pioneering and important areas of basic and applied research, such as:

- Algorithms and Computational Complexity
- Information Retrieval
- Knowledge Representation
- Information and Communication Systems Security and Protection of Privacy
- Databases
- Information Law
- Intelligent Agents
- Intelligent Systems
- Applications of Differential Equations
- e-Commerce – e-Business – e-Governance
- Foundations of Computer Science
- Mathematical Physics
- Nanotechnology and Bioelectronics
- Legal and Regulatory issues of Personal Data Protection
- Multi-agent Systems
- Investment and Strategy of Information Systems
The faculty members of the Department of Information and Communication Systems Engineering have extensive experience in designing and carrying out competitive research and development projects. Such projects have been funded by the European Commission and the European Committee for Standardization, through programs such as: FP7, FP6-STREP, FP6-IST, TEN / TELECOM, ISIS, Leonardo, ACTS, INFOSEC ETS II, ESPRIT / ESSI, Telematics Applications, ACTION 2, INFOSEC, ESPRIT LTR, BRITE EURAM, INNOVATION, RACE, VALUE II, LRE, ESPRIT, EURET / EURATN, AIM, etc.

The Department’s faculty has similar experience in designing and carrying out national competitive research and development projects. Funders of such projects are: the Ministries of Interior, Foreign Affairs, Justice, Transparency and Human Rights, Finance, Education and Religious Affairs, Culture and Sports, Health, Public Order and Citizen Protection, Labor, Social Insurance and Welfare, Marine and the Aegean, as well as the General Secretariat for Research and Technology, the General Secretariat for Greeks Abroad, the National Centre for Vocational Orientation, the National Organization for Medicines, the Social Insurance Institute, the Greek State Scholarship Foundation, the Information Society SA, and many private organizations and enterprises.

Also, by taking advantage of the European Union financing capabilities through the ERASMUS / SOCRATES programs, the Department has developed and maintains educational and research collaborations with several European universities, including, among others, the following: Royal Holloway and Bedford New College (University of London), University of Plymouth, University College Dublin, Aston University, Kingston University, Trinity College Dublin, University of Stockholm, University of Lund, Chalmers Institute of Technology, Karlstad University, University of Hamburg, University of Essen, University of Regensburg, Catholic University of Leuven, University of Vienna, Technical University of Graz, University of Oulu, University of Rome “La Sapienza”, University of Milano, Deusto University, University
of Malaga, Polytechnic University of Catalunya, and Copenhagen Business School.

Faculty of the Department of Information and Communication Systems Engineering offers from the academic year 2018-19 four Postgraduate Study Programmes and one Inter-university Programme in collaboration with the School of Electrical and Computer Engineering of National Technical University of Athens.

As far as the Postgraduate Program of the Department is concerned, its aim is to provide high quality education for University graduates in the cognitive area of Information and Communication Systems. It leads to the following Degrees:

- Master’s Programme (MSc) in “Information and Communication Systems Security”
- Master’s Programme (MSc) in “Internet of Things: Smart Environments in Next Generation Networks”
- Master’s Programme (MSc) in “Electronic Governance”
- Master’s Programme (MSc) in “Information and Communication Systems”
- Master’s Programme (MSc) in “Digital Innovation and Startup Entrepreneurship”
- Doctor of Philosophy (Ph.D.) Degree

For more information please visit our web site: http://msc.icsd.aegean.gr/
Program Guide

Program of Study Structure – Courses

According to the Curriculum of the Department of Information and Communication Systems Engineering, in the first three years of study the students follow a program of compulsory courses, while in the fourth year they can choose courses belonging in the six scientific Cycles (“Information and Communication Systems Security and Privacy”, “Information Systems and Entrepreneurship”, “Computer and Telecommunication Technologies”, “Communication Systems and Networks”, “Information Management and Intelligent Systems” and “Computer Science Foundations”). The Diploma Thesis is prepared in the fifth year of study. In the last (10th) semester there are no courses so that students can be devoted to the preparation of their Diploma Thesis. The courses of the Department are divided in the following categories: “Compulsory Courses” (C), “Cycle Courses” (CC), “Optional Courses” (O), “Free Courses” (F).

► Compulsory Courses (C). There are thirty six (36) Compulsory Courses (C) which must be successfully attended by all students. The distribution of the compulsory courses per semester is as follows:

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<th>3rd</th>
<th>4th</th>
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<td>Compulsory Courses</td>
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</table>

► Diploma Thesis – English Language. In addition to these compulsory courses, the Diploma Thesis and a successful examination in English language are also compulsory.

► Cycle Courses (CC). In each of the 7th, 8th and 9th semesters and for each of the six Cycles, a number of courses is available. All students have to successfully complete a minimum of eight (8) courses that belong in groups of four (4) to at least two (2) Cycles, to satisfy the requirements for the award of the Diploma.
Optional Courses (O). These courses are not included in any particular Cycle, but they are taken into consideration for obtaining the Diploma and for the calculation of the Diploma’s grade (see the relevant paragraph of the Program Guide section).

Free Courses (F). These courses are not taken into consideration for obtaining the Diploma or for the calculation of the Diploma’s grade. The only exception to this rule (only for the calculation of the Diploma’s grade) is the foreign language (see the relevant paragraph of the Program Guide section).

Course Declaration

All students can declare a maximum of nine (9) courses in each semester, except for the students in 9th and 10th semester, who can declare as many courses as they want. At least six (6) of these courses must belong to the semester which the student attends or in previous semesters, while a maximum of three (3) courses can be of later semesters (exceptions can be made only in special cases, which are evaluated by the General Assembly of the Department, upon request of the student). This rule applies only to students of the first three years. Students of the fourth year of study (semesters 7th and 8th) are also asked to declare up to nine (9) courses, but in any way they wish. For the students of the Department there is also the possibility during their studies, to declare courses from the programs of other Departments of the University Unit of Samos, which are deemed as Optional Courses (O). It should be noted though that the maximum number of courses from programs of other Departments of the University Unit of Samos that can be taken into account as Optional Courses for the calculation of the Diploma’s grade is three (3). In addition, these courses may not have content that overlaps with that of courses of the Department of Information and Communication Systems Engineering.

The courses of English Language (321-0121, 321-0131 and 321-0141) cover three levels of language skills. They are compulsory, they are not counted in the number of courses declared per semester and, as far as it regards their contribution to the Diploma’s Grade, they are considered as a single course. The students, at the beginning of the first semester and after qualifying examinations, are distributed to the first (A) and second (B) level of
English language, depending on their level of knowledge. Their enrollment at the next level is possible only after successful examination of the level they attend. All students are expected to successfully attend the B and C level. The overall objective of English language courses is to ensure that students, at the end of their second year of study, will have the ability to study scientific texts of Informatics and Telecommunications in English, attend lectures and seminars and create their own oral and written presentations. Apart from the above mentioned compulsory courses of English language, the Curriculum of the Department also includes two free courses taught during the 7th and 8th semester respectively. Their purpose is to prepare the students who wish to pursue postgraduate studies in English-speaking universities, for participating in examinations that prove their ability to use the English language (TOEFL).

Similarly, the courses of the Foreign Language (321-0823, 321-0833, 321-0843 και 321-0853) cover four levels of skill and are not counted in the total number of courses declared per semester. All four levels are considered as a single free course. The students, after qualifying examinations, are distributed to the four levels, according to their knowledge of the foreign language. Their enrollment at the next level is possible only after successful examination of the level they attend. The overall objective of these courses is learning the foreign language to a sufficient level of communication, understanding and production of spoken and written speech. Furthermore, these courses, through the study of the appropriate material, enable students to read scientific texts, to attend lectures, seminars and present their own work in this specific language.
Graduation Requirements – Diploma’s Grade

The following requirements must be fulfilled in order for a student to obtain their Diploma:

1. Successful examination in every Compulsory Course (C).
2. Successful examination in at least four (4) courses, two (2) different Cycles (jointly, i.e., at least eight (8) courses, four of which at least would belong to each of the two different Cycles).
3. Successful examination in a total of fifty-four (54) courses (excluding the English Language courses and the Diploma Thesis).
4. Successful examination in the compulsory English Language courses.
5. Successful defense of their Diploma Thesis.

The Diploma’s Grade is calculated as follows:

Diploma’s Grade = 0.15 x Diploma Thesis grade + 0.85 x Courses Grade

The Courses Grade is equal to the average of the grades in the courses required for a student to obtain their Diploma (54 courses plus a single grade for the compulsory English Language courses). If a student has successfully attended the Foreign Language course, then an additional single grade for this course can be taken into account for the calculation of the Courses Grade (i.e., the Courses Grade in this case is the average of 56 rather than 55 courses).

For the calculation of the Diploma’s Grade, only a single grade is taken into account for the compulsory English Language courses (that is, the average of the grades of the courses with codes 321-0131 and 321-0141).

For the calculation of the Diploma’s Grade, only a single grade is taken into account for the Foreign Language course. This grade is equal to the average of the grades obtained in the examinations of the various courses of Foreign language, which students have successfully attended (the number of these courses depends on the level at which they were initially placed, after the qualifying examinations). A student is considered to have successfully attended the Foreign Language course, only after having succeeded in the examinations of the Foreign Language 4 course (321-0853).
If a student has been successfully examined in more courses than those required for graduation, they can choose not to take into account the grades of some courses for the calculation of the Diploma’s Grade, provided that requirements 1-3 above are still met.

It should be mentioned again that Free Courses (F) are not taken into consideration for obtaining the Diploma or for the calculation of the Diploma’s grade. The only exceptions to that rule (only for the calculation of the Diploma’s grade) are the free courses of Foreign Language.

**Grade Improvements and Changes to Program of Study**

Students, who have been successfully examined in a course and do not meet the graduation requirements, may request a repetition of the examination in order to improve their grade in the specific course, by submitting an application to the Department’s Secretariat. The repetition of the examination takes place during the examination period of September and only for courses which have been declared by the student during the current academic year.

Especially for students who attend the fifth or higher year of their study, there is the possibility of repeating the examination of a maximum of five (5) courses, in which they have been successfully examined in previous years. In this case, the repetition of the examination takes place during the examination period of January for fall semester courses, during the examination period of June for spring semester courses and during the examination period of September for all courses. In all cases, the final grade is the greater of the two grades.

The Department’s Curriculum undergoes frequent changes, in order to accommodate advances in scientific knowledge and the constantly changing needs of the market.
Learning outcomes

Upon the completion of their study, the graduates will have acquired the ability to:

» Recall, explain and present the basic principles of the Computer and Communications Science.

» Associate the theoretical background of the Computer and Communications Science with the design, integration and application of Information and Communications Technologies (ICT).

» Design, develop, manage, and assess information and communication system.

» Analyze users’ requirements for information systems.

» Design, develop, and assess software applications.

» Design, develop, and assess databases.

» Design, develop, manage, and assess computer networks and telecommunications networks.

» Design and assess security of information and communication systems.

» Integrate and apply information systems security technologies and privacy enhancing technologies.
» Design, implement and assess digital circuits and systems.
» Describe, explain, and employ microprocessors and microcontrollers, as well as design and implement systems based on them.
» Design and apply artificial intelligence, information management, and big data technologies.
» Describe, analyze, and apply signal processing and multimedia technologies.
» Manage projects.
» Design, develop, and manage e-Commerce and digital businesses.
» Describe and analyze the legal and regulatory framework of ICT.
» Analyze ICT-related problems and create solutions.
» Create, present, and explain solutions for real-world ICT-related problems.
» Support the technological, social and economic development.
### Courses per Semester

#### 1st Semester

**Compulsory Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Teaching Hours</th>
<th>Lab Hours / Review-Problem Session Hours</th>
<th>ECTS units</th>
</tr>
</thead>
<tbody>
<tr>
<td>321-1204</td>
<td>Structured programming</td>
<td>3</td>
<td>4</td>
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</tr>
<tr>
<td>321-1406</td>
<td>Introduction to Computer Science and Communications</td>
<td>3</td>
<td>–</td>
<td>3</td>
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<tr>
<td>321-2003</td>
<td>Logic Design</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>321-1501</td>
<td>Discrete Mathematics I</td>
<td>3</td>
<td>2</td>
<td>5</td>
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<tr>
<td>321-1106</td>
<td>Calculus</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>321-2052</td>
<td>Physics</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>321-0121</td>
<td>English Language 1</td>
<td>3</td>
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</table>

**Free Course**

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Teaching Hours</th>
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<th>ECTS units</th>
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<tbody>
<tr>
<td>321-0823</td>
<td>Foreign Language 1</td>
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#### 2nd Semester

**Compulsory Courses**

<table>
<thead>
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<th>ECTS units</th>
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<tbody>
<tr>
<td>321-2105</td>
<td>Object-oriented Programming I</td>
<td>3</td>
<td>2</td>
<td>5</td>
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<tr>
<td>321-2551</td>
<td>Circuit Theory</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>321-2450</td>
<td>Discrete Mathematics II</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>321-3154</td>
<td>Linear Algebra</td>
<td>3</td>
<td>2</td>
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<tr>
<td>321-2402</td>
<td>Probability and Statistics</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>321-4103</td>
<td>Operating Systems</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>321-0131</td>
<td>English Language 2</td>
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### Free Course

<table>
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<tbody>
<tr>
<td>321-0833</td>
<td>Foreign Language 2</td>
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### 3rd Semester

#### Compulsory Courses

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<thead>
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<th>Course Code</th>
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<th>ECTS units</th>
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<tbody>
<tr>
<td>321-3652</td>
<td>Object-oriented Programming II</td>
<td>3</td>
<td>2</td>
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<tr>
<td>321-8105</td>
<td>IT Project Management</td>
<td>3</td>
<td>2</td>
<td>5</td>
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<tr>
<td>321-3004</td>
<td>Data Structures</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>321-3354</td>
<td>Computer Architecture</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>321-3751</td>
<td>Stochastic Calculus</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>321-5502</td>
<td>Signals and Systems</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>321-0141</td>
<td>English Language 3</td>
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#### Free Course

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Teaching Hours</th>
<th>Lab Hours / Review-Problem Session Hours</th>
<th>ECTS units</th>
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</thead>
<tbody>
<tr>
<td>321-0843</td>
<td>Foreign Language 3</td>
<td>3</td>
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</table>
## Courses per Semester

### 4th Semester

#### Compulsory Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Teaching Hours</th>
<th>Lab Hours / Review-Problem Session Hours</th>
<th>ECTS units</th>
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<tbody>
<tr>
<td>321-3104</td>
<td>Information Systems Analysis and Design</td>
<td>4</td>
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<tr>
<td>321-4201</td>
<td>Algorithms and Complexity</td>
<td>4</td>
<td>2</td>
<td>5</td>
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<tr>
<td>321-3203</td>
<td>Advanced Topics of Programming Languages</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>321-3302</td>
<td>Databases I</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>321-4120</td>
<td>Computer Communications</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>321-2254</td>
<td>Differential Equations</td>
<td>3</td>
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#### Free Course

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Teaching Hours</th>
<th>Lab Hours / Review-Problem Session Hours</th>
<th>ECTS units</th>
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</thead>
<tbody>
<tr>
<td>321-0853</td>
<td>Foreign Language 4</td>
<td>3</td>
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</table>

### 5th Semester

#### Every course in this semester is Compulsory

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Teaching Hours</th>
<th>Lab Hours / Review-Problem Session Hours</th>
<th>ECTS units</th>
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<tbody>
<tr>
<td>321-2304</td>
<td>Business Operations and Information Systems</td>
<td>4</td>
<td>2</td>
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<tr>
<td>321-6451</td>
<td>Computer Networks</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>321-3703</td>
<td>Databases II</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>321-3453</td>
<td>Telecommunications</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>321-4002</td>
<td>Software Engineering</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>321-6702</td>
<td>Theory of Computation</td>
<td>3</td>
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</table>
### 6th Semester

*Every course in this semester is Compulsory*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Teaching Hours</th>
<th>Lab Hours / Review-Problem Session Hours</th>
<th>ECTS units</th>
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<tbody>
<tr>
<td>321-6503</td>
<td>Information Systems Management</td>
<td>4</td>
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<tr>
<td>321-3604</td>
<td>Artificial Intelligence</td>
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<td>2</td>
<td>5</td>
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<tr>
<td>321-3404</td>
<td>Information and Communication Systems Security</td>
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<td>2</td>
<td>5</td>
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<tr>
<td>321-7951</td>
<td>Distributed Systems</td>
<td>3</td>
<td>2</td>
<td>5</td>
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<tr>
<td>321-8810</td>
<td>Internet Programming</td>
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<td>2</td>
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<tr>
<td>321-5205</td>
<td>Legal Framework for the Information Society</td>
<td>3</td>
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</table>

### 7th Semester

1. **Cycle Information and Communication Systems Security and Privacy**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Teaching Hours</th>
<th>Lab Hours / Review-Problem Session Hours</th>
<th>ECTS units</th>
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<tbody>
<tr>
<td>321-9703</td>
<td>Computer Network Security and Privacy Enhancing Technologies</td>
<td>3</td>
<td>2</td>
<td>5</td>
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<tr>
<td>321-5753</td>
<td>Privacy and Data Protection Law</td>
<td>3</td>
<td>-</td>
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</table>

2. **Cycle Information Systems and Entrepreneurship**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Teaching Hours</th>
<th>Lab Hours / Review-Problem Session Hours</th>
<th>ECTS units</th>
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<tbody>
<tr>
<td>321-8953</td>
<td>Electronic Entrepreneurship</td>
<td>3</td>
<td>-</td>
<td>5</td>
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<tr>
<td>321-5155</td>
<td>Information Systems Analysis and Design Methodologies and Tools</td>
<td>4</td>
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</table>
### Courses per Semester

#### 3. Cycle Computer and Telecommunication Technologies

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Teaching Hours</th>
<th>Lab Hours / Review-Problem Session Hours</th>
<th>ECTS units</th>
</tr>
</thead>
<tbody>
<tr>
<td>321-10302</td>
<td>Digital Communications</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>321-7051</td>
<td>Digital Systems Design</td>
<td>3</td>
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</table>

#### 4. Cycle Communication Systems and Networks

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Teaching Hours</th>
<th>Lab Hours / Review-Problem Session Hours</th>
<th>ECTS units</th>
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<tbody>
<tr>
<td>321-8354</td>
<td>Network Management</td>
<td>3</td>
<td>-</td>
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<tr>
<td>321-6256</td>
<td>Internet Protocols and Architectures</td>
<td>3</td>
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#### 5. Cycle Information Management and Intelligent Systems

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Teaching Hours</th>
<th>Lab Hours / Review-Problem Session Hours</th>
<th>ECTS units</th>
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<tbody>
<tr>
<td>321-7754</td>
<td>Robotic Control</td>
<td>3</td>
<td>2</td>
<td>5</td>
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<tr>
<td>321-3553</td>
<td>Computational Logic and Logical Programming</td>
<td>3</td>
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#### 6. Cycle Computer Science Foundations

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>321-9454</td>
<td>Applied Topics in Data Structures and Databases</td>
<td>3</td>
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<tr>
<td>321-99002</td>
<td>Numerical Analysis</td>
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Free Course

<table>
<thead>
<tr>
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<th>Teaching Hours</th>
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<tbody>
<tr>
<td>321-0161</td>
<td>English Language (TOEFL)</td>
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8th Semester

1. Cycle Information and Communication Systems Security and Privacy

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Teaching Hours</th>
<th>Lab Hours / Review-Problem Session Hours</th>
<th>ECTS units</th>
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<tbody>
<tr>
<td>321-8053</td>
<td>Cryptography</td>
<td>3</td>
<td>-</td>
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</tr>
<tr>
<td>321-10753</td>
<td>Mobile and Wireless Networks Security</td>
<td>3</td>
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2. Cycle Information Systems and Entrepreneurship

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Teaching Hours</th>
<th>Lab Hours / Review-Problem Session Hours</th>
<th>ECTS units</th>
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<tbody>
<tr>
<td>321-8504</td>
<td>Decision Support Systems – Business Analytics</td>
<td>3</td>
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<tr>
<td>321-5607</td>
<td>Human – Computer Interaction and Web Applications</td>
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<tr>
<td>321-7653</td>
<td>Systems Theory</td>
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<td>-</td>
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<tr>
<td>321-11101</td>
<td>Electronic Government Technologies and Applications</td>
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</table>
### Courses per Semester

#### 3. Cycle Computer and Telecommunication Technologies

<table>
<thead>
<tr>
<th>Course Code</th>
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<tr>
<td>321-7803</td>
<td>Wireless Communications</td>
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<td>321-8752</td>
<td>Introduction to VLSI</td>
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<tr>
<td>321-9353</td>
<td>Digital Image Processing</td>
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<td>2</td>
<td>5</td>
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<tr>
<td>321-7903</td>
<td>Microelectronics</td>
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#### 4. Cycle Communication Systems and Networks

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<th>Lab Hours / Review-Problem Session Hours</th>
<th>ECTS units</th>
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</thead>
<tbody>
<tr>
<td>321-7002</td>
<td>Performance Evaluation and Simulation of Computer Systems and Networks</td>
<td>3</td>
<td>2</td>
<td>5</td>
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<tr>
<td>321-7256</td>
<td>Mobile Communication Networks</td>
<td>3</td>
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<tr>
<td>321-11001</td>
<td>Networks and Cloud Technologies</td>
<td>3</td>
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</tr>
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</table>

#### 5. Cycle Information Management and Intelligent Systems

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Teaching Hours</th>
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<tbody>
<tr>
<td>321-9253</td>
<td>Data Mining and Data Warehouses</td>
<td>3</td>
<td>2</td>
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<tr>
<td>321-10202</td>
<td>Information Retrieval</td>
<td>3</td>
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</table>

#### 6. Cycle Computer Science Foundations

<table>
<thead>
<tr>
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<th>Course Title</th>
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<tbody>
<tr>
<td>321-8602</td>
<td>Information Theory</td>
<td>3</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>321-8001</td>
<td>Game Theory</td>
<td>3</td>
<td>-</td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Teaching Hours</td>
<td>Lab Hours / Review-Problem Session Hours</td>
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<tr>
<td>321-9855</td>
<td>Mathematical Modeling</td>
<td>3</td>
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</tbody>
</table>

**Optional Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Teaching Hours</th>
<th>Lab Hours / Review-Problem Session Hours</th>
<th>ECTS units</th>
</tr>
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<tbody>
<tr>
<td>321-2630</td>
<td>Simulation of Communication Systems using Matlab</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>321-7602</td>
<td>Practice</td>
<td>-</td>
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</table>

**Free Course**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>321-0151</td>
<td>English Language (TOEFL)</td>
<td>3</td>
<td>-</td>
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</tbody>
</table>

**9th Semester**

1. **Cycle Information and Communication Systems Security and Privacy**

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Teaching Hours</th>
<th>Lab Hours / Review-Problem Session Hours</th>
<th>ECTS units</th>
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</thead>
<tbody>
<tr>
<td>321-99101</td>
<td>Regulatory and Social Issues in Information Society</td>
<td>3</td>
<td>-</td>
<td>5</td>
</tr>
</tbody>
</table>

2. **Cycle Information Systems and Entrepreneurship**
### Courses per Semester

#### 3. Cycle Computer and Telecommunication Technologies

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Teaching Hours</th>
<th>Lab Hours / Review- Problem Session Hours</th>
<th>ECTS units</th>
</tr>
</thead>
<tbody>
<tr>
<td>321-5403</td>
<td>Information Systems Strategy and Investment</td>
<td>3</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>321-10652</td>
<td>Satellite Communications</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>321-6555</td>
<td>Multimedia</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
</tbody>
</table>

#### 4. Cycle Communication Systems and Networks

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Teaching Hours</th>
<th>Lab Hours / Review- Problem Session Hours</th>
<th>ECTS units</th>
</tr>
</thead>
<tbody>
<tr>
<td>321-9404</td>
<td>Broadband Networks</td>
<td>3</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>321-9120</td>
<td>Design and Development of Mobile Computing Applications</td>
<td>3</td>
<td>2</td>
<td>5</td>
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</tbody>
</table>

#### 5. Cycle Information Management and Intelligent Systems

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<thead>
<tr>
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<th>Teaching Hours</th>
<th>Lab Hours / Review- Problem Session Hours</th>
<th>ECTS units</th>
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<tbody>
<tr>
<td>321-7406</td>
<td>Knowledge Engineering and Knowledge Systems</td>
<td>3</td>
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<tr>
<td>321-6606</td>
<td>Computer Vision</td>
<td>3</td>
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</table>
6. Cycle Computer Science Foundations

<table>
<thead>
<tr>
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<th>Teaching Hours</th>
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<th>ECTS units</th>
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<tbody>
<tr>
<td>321-9003</td>
<td>Advanced Data Structures</td>
<td>3</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>321-10001</td>
<td>Algorithms and Combinatorial Optimization</td>
<td>3</td>
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<td>5</td>
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</tbody>
</table>

Optional Courses

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<thead>
<tr>
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<tbody>
<tr>
<td>321-2600</td>
<td>Risk Theory</td>
<td>3</td>
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</table>

■ 10th Semester

Compulsory Course

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<tr>
<th>Course Code</th>
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<th>Teaching Hours</th>
<th>Lab Hours / Review-</th>
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<tbody>
<tr>
<td>321-7102</td>
<td>Diploma Thesis</td>
<td>-</td>
<td>-</td>
<td>30</td>
</tr>
</tbody>
</table>
**Syllabus and Learning Outcomes of Courses per Semester**

(for each course, syllabus is shown first and learning outcomes follow)

### 1st Semester

**321-1204 | Structured programming**

Introduction to programming and programming languages. The basic parts of C programming language. Variables and constants, Declarations, Operators, Expressions, Data input and output, conditional expressions, Functions, Tables, Pointers, Formatted input and output, Structures and Unions, Files and Dynamical structures.

Understanding the advantages and disadvantages of structured programming. Learning the basic features of the C programming language. The emphasis is on design and analysis of various computer algorithms and on software development.

**321-1406 | Introduction to Computer Science and Communications**


Understanding the fundamentals of computer science and telecommunications. Web development skills.

**321-2003 | Logic Design**


Knowledge of basic concepts of digital systems. Ability of analyzing and designing combinational and synchronous sequential circuits in logic level.

321-1501 Discrete Mathematics I

The sets theory, finite and infinite sets, multisets, the principle of inclusion and exclusion. Proof techniques, mathematical induction. Logic and propositions, propositional calculus, predicate calculus, inference rules. Computability and formal language theory, the paradox of Russell and non-computability, languages, phrase structure grammars, hierarchy types on the generative grammars and languages. Enumeration: samples, permutations, combinations, the binomial theorem, etc. The discrete probability. Relations and functions: a relational model for databases, binary relations, equivalence relations and partitioning, functions, etc. The pigeonhole principle.

The widening of the field of mathematics for the student through the examination of a series of concepts and issues, which represent the foundation of Computer Science and are not included in the General Applied Mathematical courses. Aiming at developing and deepening students’ perception of related disciplines, such as the Foundations of Computer Science, the Sets Theory, the Formal Language Theory, the Probability Theory, the Theory of Algorithms, etc.
321-1106  Calculus


The purpose of the course is to give a complete and working knowledge of differential and integral calculus. It covers and expands material presented in the last years of high school, including functions, basic calculus, limits, derivatives and integrals. One objective of the course is to provide a solid background to the analysis of functions of a single variable and to expose the mathematical rigor through the proofs of most of the theorems and propositions. For example, one of the goals is to introduce the student to the definitions of the concept of the limit of a function or that of the continuity, so that concrete examples of functions can be treated using these definitions. At the same time, the course also focuses on direct applications of the covered material to a number of problems from everyday life, from geometry (areas, volumes) or from physics. The student should realize that beyond the terse formalities used in the proofs, there is a very vivid and practical aspect in calculus. Similarly, the definition of the definite integral as summation should be understood, but at the same time a variety of integration techniques should be taught for practically computing complicated integrals. More advanced topics such as improper integrals or solving simple differential equations or a presentation of Taylor theorem should also be understood.

321-2052  Physics

Scalar, vector quantities. Kinematics. Relative motion. Forces, torques, centre mass. Dynamics, friction in a liquid, bodies with changing mass, angular momentum. Work, energy, potential, conservative forces, central forces. Electrostatics: Coulomb’s law, electric field, potential, flux, Gauss’s law, Poisson equation, potential energy, boundary conditions, method of images, electric dipole, multipole expansion, conductors, capacity, dielectrics, polarization, electrical displacement. Electric current, continuity equation, steady current, Ohm’s law. Magnetostatics: Laplace’s force, Lorentz, force on a current-carrying wire, magnetic dipole,
Biot-Savart’s law, Ampere’s law, vector potential, field of a magnetic dipole, magnetic materials, magnetization. Ampere-Maxwell’s equation, Faraday’s equation, scalar potential of EM field, mutual inductance, self inductance, RL, RC, RLC circuits, Maxwell’s equations, energy/momentum conservation theorems, equations of potentials in Coulomb, Lorentz gauges, elements of electromagnetic waves.

The course covers and expands topics in mechanics and electromagnetism which are familiar to some degree from high school but using higher mathematics. Differential calculus, elements of vector analysis and simple differential equations are being introduced in the description of the basic laws of mechanics and are used for solving problems. Using integrals the student should be able to compute the kinematical quantities of an arbitrary motion in a straight line, in a general curvilinear motion, or to find the orbit of a point particle from Newton’s law, e.g. inside a Keplerian gravitational field. Given a force field one should be able to determine if this is conservative or not and to find the potential energy when this exists. Another objective is the use of integration techniques to compute the centre-mass. Concerning electromagnetism, one of the basic goals is to introduce the students to the use of differential calculus and vector analysis to the study of the laws of electrostatics, magnetostatics and electromagnetism. Using integrals the student should be able to compute the electric field and potential of various distributions of charge which have some symmetry in their geometry or respectively the magnetic field of moving charges and currents. Various theorems and equations (e.g. Gauss, Biot-Savart, Ampere, Faraday, Maxwell’s equations) should be understood in their general form and not just in their simplified versions exposed in high school textbooks. Beyond that, one of the objectives of the course is the physical and mathematical study of more sophisticated topics of electricity and magnetism, such as the method of images, the electric dipole, the dielectrics, the magnetic materials, the scalar and vector potentials of electromagnetism, the energy/momentum conservation theorems and elements of electromagnetic waves.

**321-0121 English Language 1**

The course includes comprehension activities on written and spoken texts, along with vocabulary exercises, grammar theory and practice, and speaking/writing exercises (e.g. letter, email, paragraph, summary). In addition, students are introduced to computing terminology.

Students who successfully complete the course will be familiar with basic concepts of English grammar and syntax, will have practised in understanding generic texts and will have developed their writing and speaking skills in English.
### 321-0823  Foreign Language 1

Basic knowledge of the foreign language (grammar, syntax), descriptions of persons and objects, exchange of simple information, suggestions and views that enable communication in familiar, everyday situations.

Ability to use the foreign language in the cases mentioned in the syllabus of the course.

### 2nd Semester

#### 321-2105  Object-oriented Programming I

Object-oriented programming, Classes, Object Oriented Analysis and Design, Objects, Recursion, Constructor, Destructor, Member Functions, const Functions, Inline functions, Complex Classes, Input / Output in C++, Output to file, Input from file, Control loops, Pointers, Memory Allocation, References, Derived class, Inheritance, Overriding, Overloading vs. Overriding, Virtual functions, Abstract classes, Polymorphism, Virtual Inheritance.

The course aims to introduce object-oriented programming to the students using C++. It targets three areas; the student should be able to: 1) identify the potential classes and their structure from a brief description, 2) understand existing code, and 3) develop a system in C++.

#### 321-2551  Circuit Theory


Knowledge of main methodologies for circuits’ analysis. Knowledge of basic MOSFET characteristics. Familiarity with key features of digital circuits like the structure and function of digital gates, noise margins, propagation delay and power dissipation.
321-2450  **Discrete Mathematics II**

Graph theory: basic terminology; paths and circuits; minimum paths; Euler and Hamilton paths and circles; the travelling salesman problem. Trees: basic notation; rooted trees; binary search trees; minimum span trees. Finite state machines. Real sequences and generating functions. Combinatorial problems. Recursive relations and recursive algorithms. Linear recurrence equations with constant coefficients: homogeneous solution; partial solution; total solution; solution using generating functions. Sorting algorithms.

Usage of elemental mathematical tools in problem solving, with emphasis on computer science problems.

321-3154  **Linear Algebra**


The purpose of the course is to introduce the first year students to the concepts of linear algebra which usually have not been met before. After an introduction to the complex numbers, one main objective of the course is to provide a complete and working knowledge of the theory of linear spaces. The notions of linear independence, linear superposition, basis and dimension should be well understood. Another goal is the study of the theory of matrices, of row equivalence and of the solution of a linear system of equations. Techniques for computing trivial and non-trivial determinants should be discussed. Students must also understand more advanced topics of linear algebra, such as eigenvalues-eigenvectors, linear mappings and diagonalization.
321-2402  Probability and Statistics

Axiomatic definition of probability, independent events, conditional probabilities, Bayes theorem, combinatorial analysis, discrete and continuous random variables, distribution functions, distributions of special interest: Bernoulli, binomial, Poisson, uniform, exponential, normal, Gamma, Weibull. Joint distribution functions, independent random variables, conditional distributions, moment generating functions, limit theorems, central limit theorem, strong law of large numbers. Descriptive statistics.

Comprehension of basic notions of combinatorial analysis and probability theory. Familiarity with the basic categories of random variables.

321-4103  Operating Systems


Understanding the modern computer systems’ complexity and the usefulness of operating systems. Knowledge of the most important resource-utilization issues arising in a computer system. Learning of the most popular solutions adopted by modern operating systems.

321-0131  English Language 2

See course 321-0121.
**321-0833 Foreign Language 2**

Acquisition of communication skills through simple dialogues on familiar and contemporary issues, understanding of written and oral language, writing paragraphs, letters, CVs, announcements.

Anything mentioned in the syllabus of the course.

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**3rd Semester**

**321-3652 Object-oriented Programming II**


This course covers the fundamentals of Object Oriented Programming (OOP) using Java. The main learning objectives for this course are: To build and develop OOP thinking: Learn to think in objects; to familiarize students with the basic features of the language API and knowing how to use them correctly and efficiently; to cover the usage principles of encapsulation, coupling, cohesion, inheritance, polymorphism and method overloading/overriding; to create Java applications using sound OOP practices and program structuring; to develop analytical programming thinking and reasoning skills. The aforementioned objectives are achieved through course lectures and extensive laboratory exercises.
321-8105  **IT Project Management**


Students will learn the basic principles of IT project management and will be able to apply fundamental methods for managing the cost and duration of IT projects.

321-3004  **Data Structures**

Introduction - Basic concepts of algorithms and data structures, Abstract Data Types (ADT), Performance Algorithm, Analysis of algorithms, Asymptotic notations, Arrays (multidimensional, special forms, sparse), Lists (simply connected, circular, doubly linked), Stacks (with implementation table with a list implementation, applications), tails (realization with a round table with a list implementation, applications), Trees (quantitative data, representation of arrays and pointers, cross), priority Queue, heap Structure, Search (linear, binary, with interpolation), Sort (with option to import, bubble, quicksort, heap with merger), binary search trees, weighted search tree, red-black trees, B-trees, hash (dictionary function and hash table, collisions, fragmentation chains, linear and double fragmentation), Graphs (a reconstruction table / list of neighborhood, breadth-first search, depth-first search).

The design or selection of appropriate data structures for specific programming problems. The implementation and evaluation of different structures. Basic algorithmic techniques.

321-3354  **Computer Architecture**


Comprehension of the basic architectural elements of a computer system.

**321-3751 Stochastic Calculus**

Discrete and continuous random variables, expectation of functions of random variables, joint distribution functions, independent random variables, moment generating functions, limit theorems, conditional probability and conditional expectation, the exponential distribution, definition of stochastic processes, the Poisson process, simulating discrete and continuous random variables, simulating stochastic processes, Markov chains, Chapman-Kolmogorov equations, classification of states, limiting probabilities, mean time spent in transient states.

Comprehension of the notion of stochastic processes and familiarity with the basic families of them (i.e., Poisson processes and Markov chains).

**321-5502 Signals and Systems**


Knowledge of basic techniques of signals and systems analysis and study. Knowledge of transformations (for continuous and discrete signals and systems) and their properties. Understanding fundamental relations and meanings, such as the relation that associates the output with the input of a system and the notions of stability and causality. Use of the above for solving problems.
### 321-0141 English Language 3

See course 321-0121.

### 321-0843 Foreign Language 3

Understanding and participation in discussions of issues of everyday life, oral and written presentation of information and texts in a variety of topics. Expression of feelings, opinions, arguments, conclusions, cultural elements (everyday life, education, work in France).

Anything mentioned in the syllabus of the course.

### 4th Semester

#### 321-3104 Information Systems Analysis and Design


Basic knowledge of system analysis techniques. Systems analyst skills.
321-4201  Algorithms and Complexity


Knowledge of the most important algorithms of the theory of computation.

321-3203  Databases I


The foundation of Database Science and, more precisely, developing students’ knowledge of the principle of conceptual and logical modeling and designing of Databases, the Database programming languages, as well as of the options for implementation that are nowadays made available by Database Management Systems.

321-3302  Computer Communications

Introduction to the physical layer, data link layer and Medium Access Control sublayer of modern communication systems. Engineering skills on communication systems and technologies.

321-4120  **Advanced Topics of Programming Languages**


Understand the essential aspects of programming languages. Understand basic issues of compilers from both theoretical and practical terms.

321-2254  **Differential Equations**


The student should be able to construct a differential equation that describes a simple physical system and solve it either analytically or numerically.

321-0853  **Foreign Language 4**

This course aims at a high level of knowledge of the Foreign language by assigning creative, academic projects. It enables recognition of advanced level of the Foreign language usage from official organizations and companies. It helps students who wish to pursue postgraduate studies at higher educational institutions and many Foreign language speaking countries. It enables the acquisition of Foreign language proficiency certificate.

Ability to participate in exams for acquisition of the Foreign language proficiency certificate.
5th Semester

321-2304 Business Operations and Information Systems
Introduction. Basic functions of a firm. Structure of the information system of a firm. Enterprise Resource Planning (ERP) systems. Commercial functions: sales, procurement, inventory management - basic concepts, implementation processes and functionality (capabilities) of the corresponding ERP modules. Financial statements - General Accounting: accounts, entries (credits/debits) for basic events and transactions, functionality of General Accounting module. Analytical Accounting - Costing: cost categories, cost centers, cost allocations, functionality of relevant modules. Production function: production planning and monitoring, Master Production Schedule - MPS, Materials Requirements Planning - MRP, functionality of production ERP modules. The laboratory of this course includes basic familiarization with the above modules of Microsoft Navision ERP system.

Gaining an understanding of the basic functions of a firm (commercial, financial and production), and also of the capabilities to support them through modern Enterprise Resource Planning (ERP) Systems.

321-6451 Computer Networks

Familiarity with the basic elements of networks and data transport. Development of network engineering skills.

321-3703 Databases II
Transaction processing, time schedules and serialization. Concurrency control. Database recovery techniques, ARIES. Distributed databases and Internet databases. Interoperability between databases and user applications (ODBC, JDBC, etc). Introduction to design and implementation of Object-Oriented Databases.

Students will gain understanding and practical experience of the development life cycle of a Database System. The intention is to train students to conduct data analysis, database modeling and database application development, using a suitable database management system. The course will concentrate on methodologies for good database design and will give the student practical experience in designing and implementing standalone database systems. The student will gain skills so that they can understand and discuss with computing professionals, participate in project development teams, and effectively develop a database system for small to medium size business. At the end of this course, the student will be able to: a) clearly explain his/her knowledge of database technology, its importance, its architectures, and the central role Database technology plays in Information Systems, b) understand and apply appropriate development methodologies of data analysis, and to design and use appropriate modeling techniques for databases, and c) administrate transaction, recovery, optimization and concurrency issues in modern DBMS.

321-3453 Telecommunications


This course covers a large part of the telecommunication systems aiming at understanding the basic principles of analog and digital communication systems, which rely on wireless transmission of information. In particular, an introduction to the basic principles of analysis and design of telecommunication systems is considered, along with the transmission technologies of the physical layer. The theoretical and laboratory section of the course
is a detailed presentation of all the necessary technical data, definitions and standards that are essential for understanding Analog Communication Systems, a presentation of basic analog and digital modulation, coding techniques and effects of noise to the signals. Upon completion of this course, the student will be able to understand the propagation of information and its techniques, as well as techniques necessary to implement basic data transmission telecommunication systems.

**321-4002  Software Engineering**


The students get an overall view of software engineering methods and tools. Through their demo-prototype development in teams, they get initial experience in running and managing small software development projects.

**321-6702  Theory of Computation**


To understand the limits of computation through the study of simple and complex computing machines.
6th Semester

321-6503 Information Systems Management


Students will learn about the basic applications and the role of information systems into organizations. They will also learn about the necessary technological infrastructure.

321-3604 Artificial Intelligence


Ability to define an intelligent agent and familiarity with the types of intelligent agents. Ability to represent a problem so that it can be solved via state space search. Familiarity with blind search algorithms. Familiarity with heuristic search algorithms. Understanding of the properties of heuristic functions. Familiarity with local search algorithms. Ability to represent a problem as a constraint satisfaction problem. Familiarity with algorithms of solving constraint satisfaction problems. Understanding of planning methods and the algorithm of partial-order planning. Familiarity with the basic principles and algorithms of machine learning. Ability to develop programs that use artificial intelligence algorithms.

321-3404 Information and Communication Systems Security


The course offers an introduction to Information and Communication Systems security. The undergraduate student will be able to attend more advanced security and cryptography related courses.

321-7951 Distributed Systems


The development of ways to think and manipulate problems in a distributed fashion, in contrast to acting in a centralized manner.

321-88103 Internet Programming


Students get the basic knowledge and laboratory experience in web programming technologies, tools and methods. They also become acquainted with programming techniques for developing content and information management applications and services.
62

321-5205 Legal Framework for the Information Society


The objective of this course is to offer to the students the opportunity and the possibility to gain an overview of the legal and institutional issues which pertain to the Information and Communication Technologies (ICTs). The knowledge and understanding of the regulatory context of ICTs and of the main legal rules and principles allow the students to integrate their technical knowledge in a wider social, economical and institutional context. The knowledge and the understanding of these issues, the requirements of the socio-economic environment and the regulatory system are of major importance as they enhance the interdisciplinary knowledge and approach.

7th Semester

Cycle Information and Communication Systems Security and Privacy

321-9703 Computer Network Security and Privacy Enhancing Technologies


This course provides a broad-spectrum introduction to the fundamental principles of network security and privacy. The main learning objectives of this course are as follows: To obtain an understanding of network security and its changing nature; to understand how network security is perceived and carried out; to analyze the various categories of threats, vulnerabilities, countermeasures and repelling strategies; to conceptualize the challenges of network security. The structure of the module follows the OSI/ISO architecture of network security and more specifically that of the TCP/IP model. Also, the students will become familiar with the basic terminology and technologies of data privacy in networking environment and examine typical applications and use-cases. The aim of the laboratory projects is to provide students with the knowledge and skills necessary to design and support network security and privacy. The aforementioned objectives are met through course lectures, paper readings, and laboratory exercises.

321-5753 Privacy and Data Protection Law


The knowledge and understanding of the principles and basic legal rules referring to privacy and personal data protection are of major importance for studying, planning, designing and operating an information system. The planning and designing of information systems presuppose the knowledge of the regulatory framework and the respective legal barriers of data protection. The knowledge and the understanding of the issues concerning data protection and privacy are especially important as they are strictly co-related with the field of information systems and data security.
### Cycle Information Systems and Entrepreneurship

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>321-5155</td>
<td>Information Systems Analysis and Design Methodologies and Tools</td>
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</table>


To understand and apply information systems development methodologies. To develop systems analyst’s skills. To apply analytical and systemic thinking.

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>321-8953</td>
<td>Electronic Entrepreneurship</td>
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</table>


Understanding all the principles, types and potential of electronic business. The student, at the end of the course, will be able to design and elaborate a successful and fully implementable business plan for a digital business.
**Cycle Computer and Telecommunication Technologies**

**321-10302 Digital Communications**


To provide an understanding of the components of digital communication systems and to analyze error performance.

**321-7051 Digital Systems Design**

Application Specific Integrated Circuits (ASICs) and programmable devices (PLAs, PLDs, FPGAs), Hardware Description Languages (HDLs): Verilog and VHDL. Introduction to Verilog HDL, designing digital circuits with Verilog, Verilog syntax, modules and ports, structural modeling, behavioral modeling, dataflow modeling, tasks and functions. Finite State Machines (Mealy and Moore), Verilog for synthesis, design of sequential modules. Timing and delays in Verilog, Computer Aided Design (CAD) tools, logical simulation and timing verification. Random Access Memories (RAMs) and memory interfaces. Design prototyping.

Students who successfully fulfill the course requirements will know: the differences between programmable devices and ASICs, the main features of FPGAs structure, how to use Verilog HDL for designing combinational and sequential digital circuits, how to write testbenches in Verilog, how to write Verilog for synthesis, how to simulate their designs, the structure of RAMs and how to use them in digital systems, how to use prototyping boards for transferring their designs in hardware.
Cycle Communication Systems and Networks

321 8354 Network Management


Familiarity with Network Management aspects. Development of advanced engineering skills and experience on network management systems and associated tools and techniques.

321-6256 Internet Protocols and Architectures


Upon successful completion of this course, students should be able to: design, implement and evaluate effective and usable graphical computer interfaces, describe and apply core theories, models and methodologies from the field of Human – Computer Interaction (HCI), describe and discuss current research in the field of HCI, implement simple graphical user interfaces using the Java Swing toolkit, describe special considerations in designing user interfaces for older adults.
Cycle Information Management and Intelligent Systems

321-7754 Robotic Control


Understanding of syntax and semantics of propositional logic. Ability to apply semantic methods to prove a clause given a set of premises. Familiarity with formal proof methods. Understanding and application of the resolution method in propositional logic. Understanding of syntax and semantics of predicate logic. Familiarity with the application of the Herbrand method. Ability to apply the algorithm of transforming an expression of predicate logic to conjunctive normal form. Understanding and application of the unification method and the algorithm of finding the most general unifier of two clauses in predicate logic. Understanding of the resolution method in predicate logic. Understanding of the basic strategies to apply the resolution method. Familiarity with the main principles of logic programming. Ability to write programs in PROLOG to solve practical problems.

321-3553 Computational Logic and Logical Programming


Understanding robotic control issues. Design and development of robotic systems.
**Cycle Computer Science Foundations**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>321-9454</td>
<td><strong>Applied Topics in Data Structures and Databases</strong></td>
</tr>
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</table>

File Organization; analysis of files structures and fundamental methods for data indexing; query processing. Data hashing issues. Semistructured data analysis; data graphs analysis; other relative specialized applications. Introduction to Computational Geometry and Geospatial Data Science. Functional dependencies and normalization theory; Axioms of Armstrong and relational schema design optimization. Specialised topics on data protection and data compression. New research directions in Data Science.

Understanding fundamental concepts of Data Science applied topics.

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>321-99002</td>
<td><strong>Numerical Analysis</strong></td>
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Comprehension of the basic numerical methods to solve problems in Science and Technology.

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<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>321-0161</td>
<td><strong>English Language (TOEFL)</strong></td>
</tr>
</tbody>
</table>

In this course students will be able to: (1) Learn more about what the TOEFL test is and how they can register for it. (2) Get familiar with the test’s format and tasks. (3) Practise reading, listening, writing and speaking skills in English that are required for the test. (4) Practise with questions and tasks that simulate the real exam.

The purpose of this course is to prepare students to participate in the TOEFL examinations, which certify their ability to use the English language.
8th Semester

Cycle Information and Communication Systems Security and Privacy

321-8053 Cryptography

Introduction to cryptography and cryptanalysis, historical cryptographic algorithms, basic notions of number theory, modular arithmetic, one-way functions, the definition of perfect secrecy, Shannon's theorem, Vernam's cryptosystem, public key cryptography (RSA, Rabin), symmetric algorithms, DES and AES, hash functions, digital signatures.

Comprehension of basic notions of number theory and understanding of the operation of well-known cryptographic algorithms.

321-10753 Mobile and Wireless Networks Security

Introduction to wireless networks security: Wired vs. wireless network security, categories of Threats and the OSI model, Vulnerabilities, Countermeasures, Security architectures. IEEE 802.11 standard security issues: Authentication and authorization mechanisms, Confidentiality and Integrity, pre-RSNA protocols (WEP), TSNs (TKIP), RSNA (802.11i), Key management, Threat analysis and case studies. Mobile networks security (3GPP): GSM/GPRS/UMTS/LTE security issues, Network access and Authentication mechanisms, Key hierarchy and administration, Encryption, Integrity and user Privacy, Inter and Intra-network security, classification of attacks.

This course covers the major security and privacy topics in wireless and mobile networking. The main learning objectives of this course are: To conceptualize the wireless terrain idiosyncrasies in terms of security and privacy; to impart state-of-the-art technologies of wireless network security; to analyse the various categories of risks, threats, vulnerabilities, and countermeasures in the area of wireless and mobile networking; to familiarize students with the issues and technologies involved in designing a wireless system that is robust against attack; To provide the students with an understanding of the architectures and penetration testing techniques in the use of mobile and wireless networks. The course considers basic security topics and technologies in the following standards: 3GPP GSM/UMTS/LTE, IEEE 802.11. Security problems of MAC and especially upper layers will be emphasized. The aforementioned objectives are fulfilled through course lectures, paper readings, and extensive laboratory exercises.
Cycle Information Systems and Entrepreneurship

321-8504 Decision Support Systems – Business Analytics


The basic learning objectives of this course are:
1. Understanding the basic methods of supporting decisions of firms and public organizations using information systems, and the basic types of business analytics (descriptive, predictive and prescriptive).
2. Familiarization with software tools supporting the above-mentioned in 1.
3. Acquisition of competences for selecting the most appropriate methods of decisions’ support using information systems, and types of business analytics, for a particular firm or public organization, and formulation of a plan for their gradual development.
4. Acquisition of competences for modelling important decision problems of a firm or public organization, and then for solving these models, performing sensitivity analysis of their results, and final formulation of conclusions and proposals.

321-5607 Human – Computer Interaction and Web Applications

Introduction, historical background in HCI. Man and computer as interaction elements. Structural elements and interaction styles. Interactivity levels. Dialogue Modeling. Human-
centric design on interactive systems. Requirement analysis. Scenario based design. 
Design norms and guidelines. Evaluation Techniques (interviews, focus groups, cognitive 
walkthrough, etc.). Develop web applications in the laboratory.

Upon successful completion of this course, students should be able to: design, implement 
and evaluate effective and usable graphical computer interfaces, describe and apply core 
theories, models and methodologies from the field of Human – Computer Interaction (HCI), 
describe and discuss current research in the field of HCI. Students will also be asked to 
design and implement a fully operable web application.

321-7653 Systems Theory

How science evolves: Scientific paradigms and scientific revolutions. Information systems 
epistemology. Taxonomy of systems. Information Systems as Human Activity Systems. 
Systems Dynamics. Applications for Information Systems.

Students will learn about epistemological issues and will be able to apply basic methods of 
systems thinking into problem understanding and problem solving.

321-11101 Electronic Government Technologies and Applications

Introduction to e-Government domain – key issues and topics. The Public sector – 
Key infrastructures and government services. Local Government. World, European and 
National status (e-government indexes). Issues and principles of open and collaborative 
Open governmental data: administrative processes and relative ICT tools. Social media in 
the public sector, for provision of services towards citizens and businesses. National and 
Local Government cases. Team Project: Development of innovative e-government services 
and solution prototypes.

The students will acquire knowledge on the principles, the processes and the tools of 
electronic government, with the support of information and communication technologies.
Cycle **Computer and Telecommunication Technologies**

### 321-7803 Wireless Communications


To provide an understanding of the components of digital communication systems and to analyze error performance.

### 321-7903 Microelectronics


This is an introductory course on analog electronics. It aims at familiarizing the students with nonlinear electrical elements and circuits, as well as their analysis methods. It also introduces the students to the concepts of analog transistor behavior, analog electronic circuits, their analysis methods and amplifiers. A student who successfully fulfills the course requirements will have demonstrated:

1. An ability to identify nonlinear electrical elements and circuits, and to analyze them by applying various analysis methods, namely, analytical solutions, graphical analysis,
piecewise linear analysis and incremental analysis.

2. An ability to understand the semiconductor diode characteristics and perform analysis of diode circuits by applying the method of assumed states.

3. An ability to understand the actual behavior of MOS Field Effect Transistors (MOSFETs) and define the Switch Unified (SU) MOSFET model.

4. An ability to understand how the MOSFET operates as an amplifier, what is amplifier biasing and how it is achieved, and what is the saturation discipline.

5. An ability to apply the appropriate type of analysis (large signal or small signal) for determining the behavior of amplifiers depending on the magnitude of the swing of their input signals.

6. An ability to understand the basic concepts of Op Amps and analyzing simple Op Amp circuits.

7. An ability to understand the basic concepts of Analog-to-Digital and Digital-to-Analog conversion.

### Introduction to VLSI


Knowledge of the accurate (non-ideal) MOS transistor behavior. Understanding of the parameters that affect the speed and power consumption of modern CMOS VLSI digital circuits. Knowledge of main methodologies for designing CMOS VLSI circuits. Layout design ability of CMOS VLSI circuits. Knowledge of the advantages and disadvantages of main CMOS circuit families. Knowledge of the sequencing methodologies of static CMOS circuits. Knowledge of the structure and function of semiconductor memories.
**Digital Image Processing**

Introduction: what is Digital Image Processing (DIP), fields of using DIP. Digital image fundamentals: elements of visual perception, light and electromagnetic spectrum, image sensing and acquisition, sampling and quantization, mathematical tools used in DIP. Intensity transformation functions. Histogram processing. Spatial filtering, smoothing and sharpening spatial filters. Filtering in the frequency domain: sampling and the Fourier transform of sampled functions, 2-D Discrete Fourier Transform and its properties, filtering in the frequency domain, smoothing and sharpening frequency domain filters. Image restoration: noise models, restoration in the presence of noise only, linear position-invariant degradations, estimating the degradation function, inverse filtering, Minimum Mean Square Error (Wiener) filtering. Image compression: fundamentals (coding, spatial and temporal redundancy, irrelevant information, measuring image information, etc.), basic compression methods (lossy and lossless). Color image processing: color models, pseudocolor and full-color image processing, image segmentation based on color, noise in color images, color image compression.


**Cycle Communication Systems and Networks**

**Performance Evaluation and Simulation of Computer Systems and Networks**

Quantitative analysis of system performance, with emphasis on computer systems and networks, by both mathematical models and methods, and simulation tools. Poisson arrivals. Markov processes and their application in performance evaluation. Queueing analysis: M/M/1, M/M/c, M/M/1 loss, machine repairman, and more general models. Queueing networks, Jackson networks, BCMP. Discrete event simulation; generation of random variates; generation of arrival processes; simulation of Markov chains. Simulation software. Applications and case studies.

Basic understanding of mathematical and statistical models of computers and networks. Understanding of major building blocks of simulation software. Capability of statistical analysis and interpretation of simulation results.
Mobile Communication Networks

Introduction to wireless systems and networks. Evolution of wireless mobile communication systems. Propagation and path-loss in wireless communication. Analytical and empirical propagation path-loss models. Types of fading and channel characterization. Radio planning principles for cellular systems. Types of interference. Mobility management and handover process. Techniques for efficient allocation and management of radio resources. Digital modulation techniques for mobile communication systems and channel capacity. Medium access control protocols and multiple access techniques FDMA, TDMA, CDMA and OFDMA as well as how they are implemented in the respective wireless cellular systems GSM, GPRS/EDGE, UMTS, LTE, LTE-A.

The course offers introduction to mobile communication networks. In this context the basic operating principles of these systems are examined. Specifically, the operating principles, the architecture and features of popular mobile systems i.e. GSM, GPRS, UMTS, LTE and LTE-A are analyzed. Upon completion of this course, the students will be familiar with the concepts of cellular radio coverage, cellular planning and radio resource management in advanced mobile systems.

Networks and Cloud Technologies

Advanced technologies for access and core networks (e.g., IEEE 802.1X, 802.21, 5G, DSL, Gigabit Ethernet), architectures (e.g. MPLS, DiffServ, IntServ), protocols (e.g. RSVP, Mobile IP, IPv6, OSPF, BGP) and services (WebTV, IPTV, P2P, V2V). Cloud computing technologies, types of services (NaaS, IaaS), development models (private, public, hybrid), tools (openflow), virtualization of networking services and functions (SDN, NFV).

Learning advanced topics of alternative access technologies, infrastructure and cloud services and virtualization. Developing of advanced knowledge in engineering networks and communications.

Data Mining and Data Warehouses
Introduction to Data Mining Techniques: a) data, b) problems, c) applications, d) general analysis and processing techniques. Data pre-processing: a) data cleansing, b) data transformations, c) dimension reduction techniques. Clustering, Part I: a) introduction to clustering, b) proximity measures, c) k-means and its variations, d) hierarchical clustering. Clustering, Part II: a) DBSCAN, b) cluster validity, c) BIRCH. Association Rules I: a) problem definition, b) a-priori algorithm, c) frequent itemsets. Association Rules II: a) advanced methods for finding frequent itemsets, b) FP-Growth, c) association rules validation. Classification I: a) introduction, b) Decision Trees (entropy, Gini Index, classification error). Classification II: a) Bayesian classifiers, b) Support Vector Machines, c) KNN, d) rule-based classifiers, e) overfitting. Data Warehouses and OLAP: a) definitions, ROLAP, MOLAP, HOLAP, b) cuboid, c) cuboid implementation.

Critical awareness of current problems and research issues in Data Mining. Comprehensive understanding of current advanced scholarship and research in data mining and how this may contribute to the effective design and implementation of data mining applications. Ability to consistently apply knowledge concerning current data mining research issues in an original manner and produce work which is at the forefront of current developments in the sub-discipline of data mining. Proficiency with leading data mining software, including RapidMiner, Weka and Business Intelligence of MS SQL server. Understanding of how to apply a wide range of clustering, estimation, prediction and classification algorithms, including k-means clustering, BIRCH clustering, DBSCAN clustering, classification and regression trees, the C4.5 algorithm, logistic Regression, k-nearest neighbor, multiple regression, neural networks and support vector machines. Understanding of how to apply the most current data mining techniques and applications, such as text mining, mining genomics data, and other current issues. Understanding of the mathematical/statistics foundations of the algorithms outlined above.

321-10202 Information Retrieval


Understanding of the distinction between data retrieval and information retrieval. Familiarity with the architecture of an information retrieval system. Understanding of the properties of
the Boolean, Vector-space, and Probabilistic models for information retrieval. Familiarity with the basic principles of text processing and basic properties of text corpora. Understanding of the most popular indexing methods used in information retrieval systems. Ability to evaluate information retrieval systems. Familiarity with user feedback and query expansion methods. Understanding of the properties of web information retrieval. Familiarity with web crawling techniques.

**Cycle Computer Science Foundations**

**321-8602 Information Theory**


This course offers an introduction to the theory of information and its applications to communication systems. Emphasis is given on the design, analysis and application of error detection and correction codes.

**321-8001 Game Theory**


Trying to model the interaction of rational entities, with respect to antagonistic or cooperative nature.

**321-9855 Mathematical Modeling**

The concept of mathematical modeling and its applications, modeling of stochastic systems
and simulation of random variables, random number generators and properties, simulation methods for continuous and discrete random variables, synthesis method, simulation of Poisson processes with constant / changing rate, Monte Carlo simulation, statistical tests. The aim of the course is to familiarize students with methods of simulation of random variables using Matlab, as well as their application to engineering problems. In addition, students will be able to understand the basic properties and applications of pseudo-random sequences and to simulate stochastic processes of discrete and continuous time.

**Optional Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>321-7602</td>
<td>Practice</td>
</tr>
<tr>
<td></td>
<td>Practice in a real business environment. Familiarity of the student with the conditions and requirements of real working environments.</td>
</tr>
<tr>
<td>321-2630</td>
<td>Simulation of Communication Systems using Matlab</td>
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</tbody>
</table>


The goal of this module is to familiarize students with the Matlab software and to simulate various types of communication systems. The student is introduced to using Matlab and to producing fundamental signals, variables and transmission channels. Moreover, the module allows the students to develop their skills in performance evaluation of communication systems using Matlab and to understand the meaning of significant performance metrics of digital communication systems. Finally, by simulating modern communication systems (cooperative relaying, MIMO), the students will acquire a deep understanding of their operation.
Free Course

321-0151  English Language (TOEFL)

See course 321-0161.

■ 9th Semester

Cycle Information and Communication Systems Security and Privacy

321-99101  Regulatory and Social Issues in Information Society


The objective of this course is the discussion and the closer examination of issues concerning the conceiving, understanding and dealing with information and communication technologies and their application by users, society and economic, technological and political organizations.

Cycle Information Systems and Entrepreneurship

321-5403  Information Systems Strategy and Investment


Skills of creating information systems strategic plan in a firm, for the support and enrichment (e.g., new products, services, geographical regions) of its overall strategy.
Cycle Computer and Telecommunication Technologies

321-10652 Satellite Communications

Introduction to satellite-link subsystems and examination of the geometrical theory of geosynchronous and geostatic satellites. Orbit mechanics. Specialized topics on the satellite channel (e.g. satellite antennas) and analysis of the satellite link in terms of radiated and received power, signal-to-noise ratios, and random effects. Analog and digital modulation and multiple access techniques and their implementation in satellite communication systems. Emphasis on the matched filter and calculation of the probability of error in digital communication systems. Detailed examination of the satellite transponder. Emphasis on transponder signal processing and the effects of nonlinearities in satellite amplifiers. Development of satellite networks based using multiple access techniques. Digital Video Broadcasting and applications.

This lesson aims at understanding the methods of analysis and design of satellite communication systems. This course provides the necessary knowledge of the basic principles and characteristics of satellite communication networks, and the field of their efficient application. The course enables analysis and design of satellite links for various types of services and familiarity with the terms and techniques related to performance evaluation and the availability of such links. Upon completion of this course, the students will have acquired the background to understand the principles of analysis and design of satellite systems and be able to analyze and design elementary links and satellite orbits in system level.

321-6555 Multimedia


Understanding of basic meanings concerning the representation, coding and transmission of multimedia data. Skill of analyzing the individual features of the different multimedia data (e.g., image, sound, video). Skill of developing multimedia applications.
**Cycle Communication Systems and Networks**

<table>
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<tr>
<th>321-9404</th>
<th>Broadband Networks</th>
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The goal of this module is to familiarize students with various types of wideband networks. Through theory, the student will gain knowledge on various topics of wired and wireless wideband networks. Furthermore, the student will acquire deep knowledge of the design and the architecture of wideband networks. Moreover, the module provides user requirements and the ways that modern wideband networks satisfy these requirements. Finally, the student will be educated on how wideband networks can interconnect and complement each other targeting the provision of robust wideband services.

<table>
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<tr>
<th>321-9120</th>
<th>Design and Development of Mobile Computing Applications</th>
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</table>

Introduction to mobile computing, emerging mobile technologies and applications, issues and challenges, smartphone applications and services, mobile computing software platforms, mobile Web, responsive web design, geolocation, context-aware applications, Android platform architecture, programming in Android environment, case studies.

Learning of the basic principles of application development for mobile devices. Understanding and appreciation of the issues involved in designing and developing context-aware applications for mobile devices. Understanding the architecture of the Android platform and the process of developing applications for mobile devices.
Cycle Information Management and Intelligent Systems

321-7406 Knowledge Engineering and Knowledge Systems


On completion of this module, students are expected to be able: to explain the role of knowledge engineering within Artificial Intelligence, to identify and explain the various stages in the development of a knowledge based system, to design and develop a rule-based knowledge based system, to design and develop a case-based knowledge based system, to design and Develop Bayesian reasoning systems, to understand the mathematical foundations of Bayesian networks, to compare and contrast rule- and case-based knowledge based systems, to design and develop Semantic Web concepts and ontologies, to compare and contrast Semantic Web markup Technologies, and to build Ontologies and Reasoning systems in Protégé.

321-6606 Computer Vision

Image formation - Feature-based image alignment - Structure from motion - Computational photography - Feature detection and matching - Dense motion estimation - Image stitching - Stereo correspondence – Recognition

The course provides basic knowledge for understanding and using computer vision systems. The student learns the basic principles and common techniques for the designing and development of computer vision systems.
**Cycle Computer Science Foundations**

**321-9003 Advanced Data Structures**


Students must comprehend the design principles and capabilities of advanced data structures.

**321-10001 Algorithms and Combinatorial Optimization**

Mathematical modeling of combinatorial optimization problems, in the realm of areas such as Biology, Networks, time-dependent processes, resources allocation, game theory, etc. Study of techniques to tackle such problems, as branch and bound, heuristics, probabilistic techniques. Exploiting the limitations of these techniques and case study of recent developments. Dynamic programming and approximation algorithms. Polynomial time approximation schemes. Local search methods, PLS-completeness, neighborhood structures. Local search methods in the perspective of game theory.

Mathematical modeling of combinatorial optimization problems from a variety of areas and how to tackle these via algorithms.

**Optional Course**

**321-2600 Risk Theory**

Historical background of the ‘risk theory’. Presentation of the problem “Crashing systems”. Basic distributions with heavy tails that are used in situations of extreme events. The risk theory for distributions with heavy tails. The Cramer–Ludberg model. The law of large numbers. The central limit theorem. The Brownian motion in the analysis of extreme events.

The course aims at dealing with the principles of external events theory. The stochastic models that can predict the collapse of large systems, such as computer systems are presented in an analytical and interactive way. It stimulates students to further research on computational methods using programming languages such as C++ or mathematical package as Matlab. Using data, students will be able to estimate the system parameters (such as averages or variations) of the distributions that we use in extreme events.

### 10th Semester

**321-7102 Diploma Thesis**

Complete an original development and/or research project. Deeper approach in a field of the student’s interests and specialty. Familiarity with the process of addressing and solving complex problems. The student submits his/her thesis to a three-member board of professors and mandatorily presents his/her work to a public audience. The final evaluation of the submitted thesis is done by the three-member committee.

The dissertation must follow the layout specified below:

- Front page and accompanying pages. These should include names of Institution, School, Department, dissertation title, full name of the author(s), full name of dissertation adviser and committee members (if a committee has been set up).
- Acknowledgements. This includes thanking the people who contributed to the completion of the dissertation.
- Abstract in Greek (about 300 words). It should briefly describe the topic, the purposes, the methodology, and the basic conclusions of the dissertation.
- Abstract in English.
- Table of contents with a maximum of 3 numbering levels.
- List of figures, list of tables, list of acronyms.
- Dissertation body
Chapter 1: Introduction. It includes a short introduction to the topic and its significance, the motivation for and purpose of the dissertation, the methodology followed, and the dissertation layout. It doesn’t include results or conclusions.

Chapter 2, 3 … Their contents depend on the dissertation topic. If, for example, the dissertation discusses the development of a software system and its laboratory evaluation, it should include separate chapters discussing the theoretical background (previous knowledge, literature), the methodology that was followed, the results, and the analysis-evaluation of the results.

Chapter X – Conclusions: This is the last chapter of the dissertation. It summarizes and discusses the dissertation’s main findings. The conclusions must be clear and closely connected to the topic’s development in the previous chapters. Suggestions for future research should also be included.

- References. Full list of the resources that were used for writing the dissertation, as well as of the in-text references. The references should follow one format: APA, MLA, or Harvard.
- Appendices, if there are any. These include extra information, which is not necessary for the dissertation’s development or understanding. The author can provide further information to the reader in order to improve understanding and/or provide evidence of the results.
STUDENT SUPPORT

Student Services

The following services are provided for the students of the Department:

- Full medical and hospital care, which includes: medical examination, hospital examination, pharmaceutical care, clinical examinations, examination at home, births, physiotherapy, dental care and orthopedics.

- Discount tickets for public transport, including ferry, for traveling inside the country, according to the law. The discount is interrupted throughout periods of possible suspension of study, military service, loss of student status or upon graduation or completion of six years of study.

- Free meals under conditions which relate to individual and family financial situation. Free meals stop when a student successfully completes their studies, or after six (6) years from registration, regardless of whether they have completed their studies.

- Student loans depending on students’ financial situation and their performance in their studies. 50% of the amount of the loan awarded to each student is a scholarship and the remaining 50% is an interest-free loan.
Scholarships are awarded to students based on their academic performance and financial condition. The Greek State Scholarship Foundation awards scholarships and prizes to students who excelled: a) in the examinations for entering the Department and b) in semesters’ examinations for each academic year. The scholarships are granted according to the students’ economic situation and academic performance. For awards, which consist of a written certificate and a grant, only the performance of the student is taken into account. In addition to the above scholarships, institutions such as the City Samos, the North Aegean Administrative Division and other local organizations award students with some scholarships based on their performance in studies.

As far as the prerequisites, supporting documents, and application periods for the various scholarships are concerned, the students are advised to contact the Department’s Secretariat.

More information is available on the Department’s website: http://www.icsd.aegean.gr.
Student Club

Students’ parallel activities are part of their academic life and contribute positively to the development of their personality. The main venue for such activities is the Student Club. The purpose of the Student Club is entertainment, sports and the development of the artistic inclinations of the students. The University seeks to extend the activities of the Club and encourages the establishment of new committees.
Student Association – Student Groups

The Student Association supports sporting, recreational, artistic, academic and other activities through student groups that operate independently. Student groups are open to all undergraduate and postgraduate students of the Department, while there is always the possibility of setting up new groups.

Currently there exist the following groups:

<table>
<thead>
<tr>
<th>Student Group</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men and Women Sports Teams</td>
<td>Euripides Gerontis, Faculties of Science and Engineering Trainer</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:egerontis@aegean.gr">egerontis@aegean.gr</a></td>
</tr>
<tr>
<td></td>
<td><a href="mailto:ieee@aegean.gr">ieee@aegean.gr</a></td>
</tr>
<tr>
<td>Artistic group</td>
<td><a href="mailto:artsam@aegean.gr">artsam@aegean.gr</a></td>
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<tr>
<td>Music group</td>
<td><a href="mailto:musicteam@aegean.gr">musicteam@aegean.gr</a></td>
</tr>
<tr>
<td>Astronomy group</td>
<td><a href="mailto:aristarchos@samos.aegean.gr">aristarchos@samos.aegean.gr</a></td>
</tr>
<tr>
<td>University of the Aegean Juggling club</td>
<td><a href="mailto:jugglingc@aegean.gr">jugglingc@aegean.gr</a></td>
</tr>
<tr>
<td>Cycling club</td>
<td><a href="mailto:bike_club@samos.aegean.gr">bike_club@samos.aegean.gr</a></td>
</tr>
<tr>
<td>Faculties of Science and Engineering Football Club</td>
<td><a href="mailto:samos_sthe_fc@aegean.gr">samos_sthe_fc@aegean.gr</a></td>
</tr>
<tr>
<td>(participates in the local championship of the Greek</td>
<td></td>
</tr>
<tr>
<td>Football Federation)</td>
<td></td>
</tr>
<tr>
<td>Chess group</td>
<td><a href="mailto:skaki@samos.aegean.gr">skaki@samos.aegean.gr</a></td>
</tr>
<tr>
<td>Students cafeteria – “Algorithm of Taste”</td>
<td><a href="mailto:flesxi@aegean.gr">flesxi@aegean.gr</a></td>
</tr>
<tr>
<td>Students magazine – “Φ” (“Phi”)</td>
<td><a href="mailto:f@samos.aegean.gr">f@samos.aegean.gr</a></td>
</tr>
<tr>
<td>Students Radio Station</td>
<td><a href="http://xoros.samos.aegean.gr">http://xoros.samos.aegean.gr</a></td>
</tr>
<tr>
<td>“Choros” (“Space”) 94.2 FM</td>
<td><a href="mailto:xoros94.2@samos.aegean.gr">xoros94.2@samos.aegean.gr</a></td>
</tr>
<tr>
<td>Dancing group</td>
<td><a href="mailto:samosdance@aegean.gr">samosdance@aegean.gr</a></td>
</tr>
</tbody>
</table>
SUPPORTING SERVICES

Library

The Library of the University Unit of Samos is housed in a renovated neoclassical building of 1903, the “Chatzigianni io". It is an annex of the Central Library of the University of the Aegean, which is located in Lesvos (Mytilene). It operates as a lending library and the opening hours are 8:30-15:00 daily, while, during the winter and spring semester, is some days open until 20:00, depending on the available administrative staff. The library has:

- **24,000 volumes of books.** The largest part of the collection is related to the scientific disciplines of Computer Science, Mathematics, Technology and Natural Sciences, in order to serve the teaching and research needs of the Departments of the University Unit of Samos. There are also literary books, essays, etc.

- **360 foreign and Greek journal titles.** Some of these journals are available in electronic form or in microfilm.

- **Access to Electronic Scientific Databases**, which offer the capability of scientific articles search, up to the level of full text.

- **Informational material** (encyclopedias, dictionaries, etc.)

- **Doctoral Dissertations, Master and Diploma Theses.**

- **Audiovisual material** which includes disks, CDs, videotapes, cassettes, CD-ROMs, DVD-ROMs.

All the services of the Library (Lending, Orders, Cataloguing, catalog search, journals, etc.) are automated. The search can be done from the website: http://www.lib.aegean.gr
Computing Center – Laboratories

The primary purpose of the Computing Center is the development and maintenance of the necessary telecommunication and network infrastructure, for serving the teaching and research needs of the Departments of the University Unit of Samos.

In this context, the Computing Center helps and supports users during working hours, assists in software installation, develops and supports new applications as well as telecommunication and network connections that are created in Samos, and takes care of supplying, upgrading and monitoring of equipment and software. Meanwhile, students can use the specialized laboratories of the Department (Laboratories ALKMINI, ELECTRA, PHAEDRA, DORYSSA, and ARTEMIS), which have modern computer systems, software products and hardware instruments, for supporting the teaching and research needs the Department. Additionally, in Emporiki building, there is a fully equipped teleconference room.
ACADEMIC CALENDAR

WINTER SEMESTER 2018 - 2019

Beginning of courses: 01.10.2018
End of courses: 11.01.2019
Semester duration: 13 weeks
Examination period: From 14.01.2019 to 08.02.2019

Holidays:
National Holiday: Sunday 28.10.2018
Polytechnion Anniversary: Saturday 17.11.2018
Christmas Holidays: 22.12.2018 – 06.01.2019
Religious Holiday (Trion Ierarhon): Wednesday 30.01.2018

SPRING SEMESTER 2018 - 2019

Beginning of courses: 11.02.2019
End of courses: 24.05.2019
Semester duration: 13 weeks
Examination period: From 27.05.2019 to 21.06.2019

Holidays:
Monday, the first day of Lent: Monday 11.03.2019
National Holiday: Monday 25.03.2019
Easter Holidays: 22.04.2019 – 05.05.2019
First of May Holiday: Wednesday 01.05.2019
Religious Holiday (Holy Spirit): Monday 17.06.2019
Students’ elections: Exact date to be announced
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