



ΑΝΩΤΑΤΟ ΕΚΠΑΙΔΕΥΤΙΚΟ ΙΔΡΥΜΑ ΠΕΙΡΑΙΑ
ΤΕΧΝΟΛΟΓΙΚΟΥ ΤΟΜΕΑ
ΣΧΟΛΗ ΤΕΧΝΟΛΟΓΙΚΩΝ ΕΦΑΡΜΟΓΩΝ
ΤΜΗΜΑ ΗΛΕΚΤΡΟΝΙΚΩΝ ΜΗΧΑΝΙΚΩΝ Τ.Ε.

PIRAEUS UNIVERSITY OF APPLIED SCIENCES
SCHOOL OF ENGINEERING
DEPARTMENT OF ELECTRONICS ENGINEERING

PIRAEUS UNIVERSITY OF APPLIED SCIENCES

ECTS

EUROPEAN CREDIT TRANSFER SYSTEM

INFORMATION PACKAGE

DEPARTMENT OF ELECTRONICS ENGINEERING

Edition 2016-2017

*English version
by Prof. M. Rangoussi*

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A. THE DEPARTMENT OF ELECTRONICS ENGINEERING

A.1. Name and address

Name:

DEPARTMENT OF ELECTRONICS ENGINEERING

Address:

Department of Electronics Engineering, Building Z
PIRAEUS UNIVERSITY OF APPLIED SCIENCES
250, Thivon & P. Ralli Str.
GR-12244 Egaleo - Athens, Greece
Tel: + 30-210-538-1225, -1422
Fax: +30-210-538-1226
Web: <http://www.electronics.teipir.gr>

A.2. The ECTS Departmental Coordinator

The ECTS Departmental Coordinator is:

Dr. Savvas Vassiliadis, Professor
Department of Electronics Engineering
PIRAEUS UNIVERSITY OF APPLIED SCIENCES
250, Thivon & P.Ralli Str.
GR-12244, Egaleo - Athens, Greece
Tel: +30-210-538-1489
E-mail: svas@teipir.gr

A.3. Brief description of the department

Subject

The undergraduate studies curriculum of the Department of Electronics Engineering, P.U.A.S., covers the field of Electronics along with its applications in devices and systems of any kind that contain electronic parts. Indicative application areas include electronic systems, telecommunications, industrial electronics and automation, informatics and computer networks.

Aim and Objectives

- The undergraduate and graduate programs of the Department offer up-to-date, high-level knowledge in the field of Electronics and its applications, combining theoretical knowledge with practical, laboratory experience. Beyond providing students with a solid background of knowledge in the subject of Electronics and cultivating a methodology of thinking in order to approach and solve science and technology problems, the curriculum aims to a spherical development of the student's personality and professional conscience.
- In addition to the above, the Department systematically supports and develops research activities in order to promote science and technology in the field of

Electronics and its applications and contribute to the development of knowledge in the field. The Department closely monitors the international science and technology progress and innovation on its subject and pursues cooperation with departments of educational institutions, in Greece or abroad, as well as private or state institutions, on the basis of education, research and development activities.

- Finally, the Department pursues the systematic interconnection and interaction with industry or service provision institutions, units or plants, as well as professional organizations, to help improve its curriculum, update its life-long learning programs and secure the status of its graduates in contemporary labor market. Within this framework, emphasis is placed on the preparation of graduate students for a European professional career, by means of exchange and mobility programs and co-operations, under the ECTS (European Credit Transfer System).

The Profile of our graduate

Upon completion of all undergraduate curriculum requirements, students obtain the “Technological Education Electronics Engineer” degree. They have acquired knowledge and experience allowing them to work independently or in cooperation with other scientists and technologists in the following areas:

1. Analog/digital electronic components, devices, systems and measurement instruments,
2. Telecommunications (wired and wireless, microwave, mobile, satellite, optical) and digital data communications,
3. Power electronics, Industrial electronics and automations, Automatic Control Systems, Mechatronic systems,
4. Audiovisual systems and installations, Television and radio, Sound and image processing / Multimedia,
5. Computer technology, computer networks, Internet and information services, Telematics applications,
6. Sensors, measurement and data collection systems, Digital data processing
7. Microelectronics, Integrated circuits and Hardware structures,
8. Biomedical electronics, biomedical technology and biometric signal processing,
9. Safety and fire-protection systems, Electromagnetic compatibility, Quality assurance systems,
10. Electronic technologies for the Environment, Electronic technologies for Renewable Energy Sources.

In the above areas and associated fields, the graduate of the Department can reliably undertake tasks such as the:

- i. study, design, development, manufacture, implementation of systems, devices or equipment,
- ii. operation, control, supervision, maintenance, and repair of equipment,
- iii. organization and supervision of production, assembly or manufacture,
- iv. technical/ financial reports, feasibility and suitability studies as well as expert reports,
- v. certification, quality assurance, and EMC tests/certification of equipment and installations,
- vi. foundation, organization and management of business units,
- vii. provision of technical and counseling services,
- viii. design and implementation of technological research programs to promote science and technology.

A.4. Department facilities

The Department of Electronics Engineering is located in Building Z (wing B) of the main PUAS campus, 250 Thivon & P.Ralli str., Egaleo-Athens, GR-12244, Greece.

Undergraduate and graduate laboratory instruction as well as research activities take place in the following Laboratories:

GROUND FLOOR

- Room ZB-003: **Communications and Networks RESEARCH LAB**
High Frequencies Anechoic Chamber Lab
- Room ZB-008: Electric Circuits II Lab,
Power Electronics Lab

1st FLOOR

- Room ZB-103: **Electronics and Computer Technologies RESEARCH LAB – Audiovisual Group**
- Room ZB-104: Student projects Lab (undergraduate, graduate)
Smart Technologies, R.E.S. and Quality RESEARCH LAB
- Room ZB-105: Measurements Lab,
Sensors and EMC Lab,
Analog Electronics II Lab,
RF Electronics Design Lab
- Room ZB-107: Web server of the Department – Departmental cluster computing facilities
- Room ZB-108: Mobile Communications and Telecommunication Networks Lab
- Room ZB-109: Automatic Control Systems Lab,
Intelligent Control Systems Lab
- Room ZB-110: Electronic Physics and Optoelectronics Lab,
Analog Electronics I Lab
- Room ZB-111: CAD and Electronic Constructions Lab,
PCB Design Lab
- Room ZB-112: Digital Design Lab,
Microelectronics-VLSI Lab,
Microcontrollers-Embedded Systems Lab
- Room ZB-113: Microprocessors Architecture I Lab,
Microprocessors Architecture II Lab

2nd FLOOR

- Room ZB-203: Electronic Filters Design Lab
- Room ZB-204: Stochastic Signals and Systems Lab,
Digital Communications Lab,
Data Compression and Coding Lab
- Room ZB-205: Video and Audio Broadcasting Systems Lab
Audio Systems Lab
- Room ZB-207: Antennas, Radio Links and RADAR Lab
- Room ZB-208: Computer Networks Lab,
Digital Signal Processing Lab,
MSc “ICT for Education” Lab
- Room ZB-209: Transmission Lines Lab,
Microwave Devices Lab
- Room ZB-210: Optical Communications Lab
Communications and Networks RESEARCH LAB
- Room ZB-211: Introduction to Telecommunication Lab

A.5. Grading system

The grading scale is 0 (lower) to 10 (higher). Between this system and the ECTS system the following correspondence holds:

Local grading scale	ECTS
0.00 – 3.99 = Fail	E = Fail
4.00 – 4.99 = Insufficient	D = Narrow Fail
5.00 = Lowest passing grade	
5.00 – 6.49 = Good	C = Good
6.50 – 8.49 = Very good	B = Very good
8.50 – 10.00 = Excellent	A = Excellent

A.6. Studies in the Department

The duration of undergraduate studies in the Department is eight (8) semesters in full time mode. During the first seven (7) semesters, the studies are comprised of lectures on theoretical issues, practice sessions, laboratory exercises, seminars and visits to industrial or other production plants. During the 8th semester, students are required to carry out a graduation project, write a dissertation on it and complete a one-semester work placement. Special emphasis is placed on the development of students' skills and abilities such as the ability to undertake initiatives, to judge situations, to methodically address and solve problems. Within the framework of the curriculum, students are encouraged to use software and communication technology as complementary educational tools.

The program of studies is structured on the basis of the students' Work Load, which is quantitatively expressed via the credit units (ECTS). Specifically, the program of studies has the following structure:

1. The first three semesters include General Courses (GC), such as Mathematics, Physics, Electric Circuits and Computer Programming, as well as Degree-Specific Courses (SPC), such as Analog and Digital Electronics, Theory of Circuits and Signals and Microcomputer Architecture.
2. In the fourth and fifth semesters, apart from the Degree-Specific Courses such as Introduction to Communications, Specialization Courses (SpIC) are also introduced, such as Power Electronics, RF Electronic Circuits, Telecommunications, Transmission Lines, Digital Signal Processing, Biomedical Engineering and Data Structures – Data Bases.
3. In the sixth and seventh semesters Specialization Courses are offered that provide students with further knowledge in contemporary areas of Electronic Engineering, such as Communication systems, Data compression and coding, Radio links, Radar, Microwaves, Antennas, Marine Communications, Optical / Mobile communications, Communication networks, Computer networks / Internet services, Internet of Things, VLSI design, Automatic control systems, Micro-controllers, Electronic measurements – Sensors and EMC, Video and Audio Broadcasting Systems, Sound Systems, Intelligent Control, Renewable Energy Systems and Smart Grids.
4. Additionally, two more courses are offered in the field of Management, Economy, Law, Humanities (MELHC), for the students to broaden their horizons and develop the necessary skills required in the contemporary social and professional environment.
5. Finally, the students are encouraged to attend Optional Courses (OC, free electives) offered by the Department itself or in collaboration with other Departments of TEI

Piraeus, including foreign language courses. These courses do not bear credit units, but they are mentioned on the student's Transcript of marks and grades (Diploma Supplement).

In the final year of their studies, students are required to carry out a graduation project and submit a dissertation (BSc thesis) on the results. The later they prepare either individually or in pairs. This up-to-date survey of relevant scientific results or applied research gives students the opportunity to develop in-depth knowledge and to specialize in the field of their interest.

The six-month Work Placement takes place in selected enterprises, production units and plants, or service provision units, of the private or the public sector, in a field related to the curriculum. This training gives students the opportunity to experience real work conditions, participate in business activities under the guidance and supervision of qualified and experienced personnel. In this way students develop their interpersonal, communicative and project management skills.

A.7. Courses in the Undergraduate Curriculum

The current curriculum was launched in the academic year 2008-2009 and revised in 2012-2013 and in 2015-16. This program is designed for eight (8) semesters, and includes seven (7) full-time semesters of taught courses, one (1) semester of work placement and a dissertation on a graduation project. Each semester offers a total of 30 ECTS credit units, summing up to 240 ECTS credit units for the degree.

1st SEMESTER

	Course Code	Course Title		LE	PR	LA	H/W	WL	ECTS
1	EN-GC-101-6	Mathematics I	GC-1	4	0	0	4	12	6
2	EN-GC-102-7	Physics	GC-2	4	0	2	6	14	7
3	EN-GC-103-7	Electronic Physics & Optoelectronics	GC-3	4	0	4	8	16	7
4	EN-GC-104-6	Electric Circuits I	GC-4	4	0	0	4	12	6
5	EN-GC-105-4	Structured Programming	GC-5	2	0	2	4	8	4
	Total			18	0	8	26	62	30

2nd SEMESTER

	Course Code	Course Title		LE	PR	LA	H/W	WL	ECTS
1	EN-GC-201-7	Mathematics II	GC-6	4	0	0	4	12	7
2	EN-GC-202-4	Electric Circuits II	GC-7	2	0	2	4	8	4
3	EN-SPC-203-7	Analog Electronics I	SPC	4	0	2	6	14	7
4	EN-GC-204-4	Object-oriented Programming	GC-8	2	0	2	4	8	4
5	EN-GC-205-4	Electronic Component Technology & PCB Design	SPC	2	0	2	4	8	4
6	EN-GC-206-4	Measurements	GC-9	2	0	2	4	8	4
	Total			16	0	10	26	58	30

3rd SEMESTER

#	Course Code	Course Title		LE	PR	LA	H/W	WL	ECTS
1	EN-GC-301-6	Applied Mathematics	GC-10	4	0	0	4	12	6
2	EN-GC-302-4	E/M & E/M Wave Propagation	GC-11	2	0	0	2	6	4
3	EN-SPC-303-6	Analog Electronics II	SPC	4	0	2	6	14	6
4	EN-GC-MELHC-304-4	Project Management – CAD & Construction	GC-MELHC	2	0	2	4	8	4
5	EN-SPC-305-4	Architecture & Organization of Microcomputers I	SPC	2	0	2	4	8	4
6	EN-SPC-306-6	Logic Circuits Design	SPC	4	0	2	6	14	6
	Total			18	0	8	26	62	30

4th SEMESTER

	Course Code	Course Title		LE	PR	LA	H/W	WL	ECTS
1	EN-SpIC-401-4	R/F Electronic Circuits Design	SpIC	2	0	2	4	8	4
2	EN-SPC-402-7	Signals, Systems and Circuits	SPC	4	0	0	4	12	7
3	EN-SPC-403-4	Architecture & Organization of Microcomputers II	SPC	2	0	2	4	8	4
4	EN-SpIC-404-7	Digital Systems Design	SpIC	4	0	2	6	14	7
5	EN-SPC-405-4	Introduction to Telecommunications	SPC	2	0	2	4	8	4
6	EN-SPC-406-4	Transmission Lines	SPC	2	0	2	4	8	4
	Total			16	0	10	26	58	30

5th SEMESTER

#	Course Code	Course Title		LE	PR	LA	H/W	WL	ECTS
1	EN-SPC-501-4	Stochastic Signals and Systems	SPC	2	0	2	4	8	4
2	EN-SpIC-502-7	Electronic Filters	SpIC	4	0	2	6	14	7
3	EN-SpIC-503-7	Power Electronics	SpIC	4	0	2	6	14	7
4	EN-SpIC-504-6	Digital Signal Processing	SpIC	4	0	2	6	14	6
	Select 1 of the following 2								
5a	EN-GC-MELHC505-3	Quality Assurance Systems	GC-MELHC	2	0	0	2	6	3
5b	EN-SPC-506-3	Foreign Language Technical Terminology	SPC	2	0	0	2	6	3
	Select 1 of the following 2								
6a	EN-SPC507-3	Biomedical Engineering	SPC	2	2	0	0	6	3
6b	EN-SPC-508-3	Data Structures and Data Management	SPC	2	2	0	0	6	3
	Total			18	0/2	8	26/24	62	30

6th SEMESTER

#	Course Code	Course Title		LE	PR	LA	H/W	WL	ECTS
1	EN-SpIC-601-7	Communication Systems	SpIC	4	0	2	6	14	7
2	EN-SpIC-602-7	Automatic Control Systems	SpIC	4	0	2	6	14	7
3	EN-SpIC-603-8	Antennae – Radio Links – RADAR	SpIC	4	0	4	8	16	8
	Select 2 of the following 5								
4/5 a	EN-SpIC-604-4	Electronic Measurements – Sensors & EMC	SpIC	2	0	2	4	8	4
4/5 b	EN-SpIC-605-4	Sound Systems	SpIC	2	0	2	4	8	4

4/5 c	EN-SplC-606-4	Optical Communications	SplC	2	0	2	4	8	4
4/5 d	EN-SplC-607-4	Microelectronics – VLSI	SplC	2	0	2	4	8	4
4/5 e	EN-SplC-608-4	Renewable Energy Sources & Smart Grids	SPC	2	0	2	4	8	4
	Total			16	0	12	28	60	30

7th SEMESTER

#	Course Code	Course Title		LE	PR	LA	H/W	WL	ECTS
1	EN-SplC-701-6	Computer Networks	SplC	3	0	2	5	11	6
2	EN-SplC-702-7	Mobile Communications & Telecom. Networks	SplC	4	0	2	6	14	7
3	EN-SplC-703-7	Microwaves	SplC	4	0	2	6	14	7
	Select 1 of the following 3								
4a	EN-SplC-704-6	Microcontrollers – Embedded Systems	SplC	3	0	2	5	11	6
4b	EN-SplC-705-6	Video and Audio Broadcasting Systems	SplC	3	0	2	5	11	6
4c	EN-SplC-708-6	Marine Electronics and Communications	SPC	3	0	2	5	11	6
	Select 1 of the following 3								
5a	EN-SplC-706-4	Data Compression & Coding	SplC	2	0	2	4	8	4
5b	EN-SplC-707-4	Intelligent Control Systems	SplC	2	0	2	4	8	4
5c	EN-SplC-709-4	Internet of Things	SPC	2	0	2	4	8	4
	Total			16	0	10	26	58	30

8th SEMESTER

#	Course / Act. Code	Course / Activity Title		LE	PR	LA	H/W	WL	ECTS
1	EN-SplC-801-20	Graduation Project & Dissertation	SplC				0	40	20
(-)	EN-WP-802-10	Work Placement					40	20	10
	Total						40	60	30

Nomenclature:

LE: Lecture hours per week
 PR: Practice hours per week (case studies, problem solving, etc.)
 LA: Laboratory hours per week
 H/W: Hours per week

Course Code:

X-Y-NM-L
 X Department (EN: Electronics)
 Y Type of course (GC, SPC, SplC, MELHC)
 N Semester number (1 digit, 1-8)
 M Course number within semester (2 digits)

WL: Work load ECTS: European Credit Transfer System GC: General Course SPC: Degree-Specific Course SpIC: Specialization Course MELHC: Management, Economics, Law, Humanities Course	L ECTS credit units
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The following courses have a prerequisite course:

#	Course	Prerequisite course
1	Digital Systems Design	Logic Circuits Design
2	Analog Electronics II	Analog Electronics I
3	RF Electronic Circuits Design	Analog Electronics II
4	Signals, Systems and Circuits	Electric Circuits II
5	Electronic Filters	Signals, Systems and Circuits
6	Communication Systems	Stochastic Signals and Systems
7	Microwaves	E/M and E/M Wave Propagation
8	Antennae-Radio Links-RADAR	E/M and E/M Wave Propagation

The six-months Work Placement can start only after the student has successfully completed the following seven (7) Specialization Courses:

1. R/F Electronic Circuits Design
2. Transmission Lines
3. Logic Circuits Design
4. Architecture and Organization of Microcomputers II
5. Electronic Measurements - Sensors & EMC
6. Introduction to Telecommunications
7. Antennae - Radio Links - RADAR

A.8. Academic Staff, Teaching and Technical Staff, Administrative Personnel

The academic staff of the Department, engaged in undergraduate and graduate instruction and research, is the following:

Professors

1. Dimopoulos, Hercules
2. Kalivas, Dimitrios
3. Kyriakis-Bitzaros, Efstathios
4. Papageorgas, Panagiotis
5. Rangoussi, Maria
6. Savaidis, Stylianos
7. Stathopoulos, Nikolaos
8. Vassiliadis, Savvas
9. Voglis, Evangelos

Associate Professors

1. Papadopoulos, Pericles
2. Patrikakis, Charalampos
3. Potirakis, Stelios
4. Vokas, Georgios
5. Zachariadou, Katerina

Assistant Professors

1. Goustouridis, Dimitrios
2. Kostis, Ioannis
3. Metafas, Dimitrios
4. Mitilineos, Stelios
5. Tatlas, Nicolas-Alexander

Lecturers

1. Kokkosis, Apostolos
2. Prekas, Kleanthis
3. Simos, Hercules

In addition, the Department employs the following Teaching Staff, Technical Staff and Administrative Personnel:

Teaching Staff

1. Charitopoulos, Angelos
2. Kokkaliaris, Ioannis
3. Monachelis, Panagiotis

Technical Staff

1. Mantas, Alexandros
2. Ntovoris, Aristotelis

Administrative Personnel / Secretariat of the Department

1. Kantzou, Fotini (Head)
2. Spiropoulos, Kimon-Ioannis
3. Triantafyllou, Kalliope

A.9. Number of students

- The number of undergraduate students enrolled in the first year of studies is around 150 per year while the total number of undergraduate students currently enrolled in the Department is about 1400 (active students: approximately 1000 out of them).
- The number of graduate students currently enrolled in the 3 MSc programs offered by the Department is approximately 125.
- Each academic semester the Department receives a number of incoming ERASMUS students, undergraduate and graduate, who attend classes (in English), carry out research projects or complete their dissertation or degree thesis under supervision. Courses offered in English can be found here: <http://www.electronics.teipir.gr/index.php/el/2016-01-28-17-46-58/2015-05-18-18-40-07/courses-in-english>

A.10. Courses Descriptions