SCHOOL	SCHOOL OF SCIENCE		
ACADEMIC UNIT	COMPUTER SCIENCE		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	**810SKEC**	**SEMESTER**	**8th**
COURSE TITLE	TECHNOLOGIES OF THE INTERNET OF THINGS		

INDEPENDENT TEACHING ACTIVITIES *if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
Lectures	2	3
Seminars	1	2
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Specialization
PREREQUISITE COURSES:	INTERNET PROTOCOLS AND ARCHITECTURES
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek, English (for erasmus student)
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes
COURSE WEBSITE (URL)	

LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
- *Guidelines for writing Learning Outcomes*

This course constitutes a holistic approach on the Internet of Things (IoT) model. It focuses on the rapid developments on the research and application fields of Internet of Things. Emphasis is put on the dominant trends in the respective area, as well as on innovative related paradigms.

Specifically, as outcome of completing the course, the student will be able to:

- Identify in significant depth the fundamental concepts, as well as the enabling technologies for the growth of Internet of Things
- Analyze the different components of an IoT architecture
- Follow the standardization activities, as well as IoT technologies compatibility issues
- Design and develop IoT platforms
- Examine critical security and privacy issues, which are related with the application of IoT technologies
- Study multiple use cases of IoT technologies in the real world
- Conduct research on multiple aspects that concern the evolution of IoT technologies

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology	*Project planning and management*
	Respect for difference and multiculturalism

Adapting to new situations *Decision-making* *Working independently* *Team work* *Working in an international environment* *Working in an interdisciplinary environment* *Production of new research ideas*	*Respect for the natural environment* *Showing social, professional and ethical responsibility and sensitivity to gender issues* *Criticism and self-criticism* *Production of free, creative and inductive thinking* *……* *Others…* *……*

- Search for, analysis and synthesis of data and information, with the use of the necessary technology
- Adapting to new situations
- Decision-making
- Working independently
- Team work
- Production of free, creative and inductive thinking
- Project planning and management

SYLLABUS

- Introduction to the Internet of Things
- Standardization activities for the Internet of Things
- The Architecture of the Internet of Things
- Edge and Fog Computing for the Internet of Things
- RFID technologies for the Internet of Things
- Introduction to the design of IoT platforms
- Security mechanisms for the Internet of Things
- The Industrial Internet of Things
- Applications of the Internet of Things in Smart Cities
- Applications of the Internet of Things in Smart Homes
- Applications of the Internet of Things in Smart Power Management
- Applications of the Internet of Things in Healthcare
- The "Flying" Internet of Things (applications with Unmanned Aerial Vehicles)
- Case studies of the Internet of Things
- Development of IoT Systems

TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face-to-face (in class)
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Supporting learning process through the online platform e-class
TEACHING METHODS *The manner and methods of teaching are described in detail.* *Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.* *The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS*	

Activity	***Semester workload***
Lectures	26x2 = 52 hours
Seminars	26x1 = 26 hours
Independent Study	47 hours
Course total	***125 hours***

STUDENT PERFORMANCE EVALUATION *Description of the evaluation procedure* *Language of evaluation, methods of evaluation, summative or conclusive, multiple*	Total grade (100%): - Final written examination (70%) - Assignment (30%)

choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other *Specifically-defined evaluation criteria are given, and if and where they are accessible to students.*	

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[4] William Stalling, "Foundations of modern networking: SDN, NFV, QoE, IoT, and Cloud", Addison-Wesley Professional, 2015.
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[9] T. Lagkas, V. Argyriou, S. Bibi, and P. Sarigiannidis, "UAV IoT Framework Views and Challenges: Towards Protecting Drones as "Things"", Sensors, MDPI, Volume 18, Issue 11, November 2018. DOI: 10.3390/s18114015
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[12] V. Karagiannis, P. Chatzimisios, F. Vazquez-Gallego and J. Alonso-Zarate, "A Survey on Application Layer Protocols for the Internet of Things", Transactions on Internet of Things and Cloud Computing, vol. 1, no. 1, January 2015.