ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ

Α .Δ Ι .Π .

ΑΡΧΗ ΔΙΑΣΦΑΛΙΣΗΣ & ΠΙΣΤΟΠΟΙΗΣΗΣ

ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΣΤΗΝ ΑΝΩΤΑΤΗ ΕΚΠΑΙΔΕΥΣΗ

HELLENIC REPUBLIC

H .Q .A .

HELLENIC QUALITY ASSURANCE

AND ACCREDITATION AGENCY

ΤΕΧΝΟΛΟΓΙΚΟ ΕΚΠΑΙΔΕΥΤΙΚΟ ΙΔΡΥΜΑ ΑΝΑΤΟΛΙΚΗΣ ΜΑΚΕΔΟΝΙΑΣ ΚΑΙ ΘΡΑΚΗΣ

ΜΟΝΑΔΑ ΔΙΑΣΦΑΛΙΣΗΣ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΕΙ ΑΜΘ

Quality Assurance in Higher Education

Course Data Collection Form

ΤΕΧΝΟΛΟΓΙΚΟ ΕΚΠΑΙΔΕΥΤΙΚΟ ΙΔΡΥΜΑ

ΑΝΑΤΟΛΙΚΗΣ ΜΑΚΕΔΟΝΙΑΣ & ΘΡΑΚΗΣ

ΑΓΙΟΣ ΛΟΥΚΑΣ,

65404 ΚΑΒΑΛΑ

EASTERN MACEDONIA AND THRACE INSTITUTE OF TECHNOLOGY

AGIOS LOUKAS

65404 KAVALA

COURSE OUTLINE

1. GENERAL

Name and surname of lecturer	Panagiotis Kogias		
SCHOOL	of Technological Applications		
ACADEMIC UNIT	Department of Electrical Engineering		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	ZN3	**SEMESTER**	7^{o}
COURSE TITLE	**WIRELESS COMMUNICATIONS**		

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	3 Th	4,5
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*	*general background* *skills development*
PREREQUISITE COURSES:	
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	NO
COURSE WEBSITE (URL)	http://eclass.teikav.edu.gr/ED147/

2. 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*

The course aims to introduce students to wireless communication systems technologies. The course describes the basic principles and properties of wireless transmission in order to explain the peculiarities that lead to the need for specialized wireless networking protocols. Then the course presents and analyzes known wireless telecommunications network technologies, ranging from wireless LANs to cellular telecommunications systems in order to: a) provide theoretical and practical knowledge of wireless edge technologies, b) to analyze the peculiarities of wireless networks than wired, and c) explain the challenges in the implementation of a wireless network.

Upon successful completion of the course students will be able to:
• To understand the utility and applications of wireless networks
• understand the key constraints posed by wireless transmission in a network design
• To distinguish the major types of wireless networks
• be able to explain the functioning of most known wireless networking protocols
• Be aware of key security issues of wireless networks
• Be aware of technological developments in a rapidly growing field

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

• Search, analysis and synthesis of data and information, the use and the necessary technologies
• Autonomous Work
• Teamwork
• Design and Project Management
• Generate new research ideas

3. SYLLABUS

. Introduction and overview of wireless communications
II. Wireless signal propagationIII. Introduction and overview of wireless communications

IV. Wireless signal propagation III. Noise, interference
IV. satellite systems
V. Multiple access protocols for wireless networks
VI. Wireless LANs
VII. Wireless broadband
VIII. Mobile Networks type Ad-hoc (MANETs)
IX. Standardization (Bluetooth, IEEE 802.11)
X. Cellular Networks: Architecture, Frequency Assignment
XI. Security of wireless networks and mobile communications

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face to face (in the classroom)
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Presentation using slides. Website of the course with supporting and auxiliary material.
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*	
STUDENT PERFORMANCE EVALUATION *Description of the evaluation procedure* *Language of evaluation, methods of evaluation, summative or conclusive, multiple 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.*	Theoretical Course final written examination (100%)

Activity	***Semester workload***
Lectures	39
Independent study	73,5
Course total ***(25 hours per credit)***	***112,5***

5. ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

- Related academic journals:

- Kottis P. – Arapoglou P. , Wireless Communications
- Stallings William, Wireless Communications and networks

- I. N. Sahalos, Antennas (Thessaloniki 1986)
- Tri – Ha, Digital Satellite Communications, McGraw Hill Inc, 1989
- Michael P. Fitz, Fundamentals of communication systems (KLidarithmos)
- David Tse Pramod Viswanath, Fundamentals of wireless communication (KLidarithmos)