

## COURSE OUTLINE

### (1) GENERAL

<b>SCHOOL</b>	SCHOOL OF ENGINEERING		
<b>ACADEMIC UNIT</b>	Department of Informatics and Computer Engineering		
<b>LEVEL OF STUDIES</b>	Undergraduate		
<b>COURSE CODE</b>	ICE-5002	<b>SEMESTER</b>	5th
<b>COURSE TITLE</b>	Network Programming		
<b>INDEPENDENT TEACHING ACTIVITIES</b> 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	<b>WEEKLY TEACHING HOURS</b>	<b>CREDITS</b>	
Lectures	3		
<b>Laboratories</b>	2		
	5	5	
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).			
<b>COURSE TYPE</b> general background, special background, specialised general knowledge, skills development	Special Background		
<b>PREREQUISITE COURSES:</b>	Application Development Methodologies		
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	Greek		
<b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>	Yes (in English)		
<b>COURSE WEBSITE (URL)</b>	<a href="https://eclass.uniwa.gr/courses/CS131/">https://eclass.uniwa.gr/courses/CS131/</a>		

### (2) LEARNING OUTCOMES

<p><b>Learning outcomes</b> 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</p> <ul style="list-style-type: none"> <li>• Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</li> <li>• Descriptors for Levels 6, 7 &amp; 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</li> <li>• Guidelines for writing Learning Outcomes</li> </ul>		
<p>This course aims to make students competent to understand advanced topics of the Java language and advanced topics of programming for the network.</p> <p>Upon completion of the course, students will be able to:</p> <ul style="list-style-type: none"> <li>Develop application in Java using threads</li> <li>Use the networking classes of sockets for implementing services with Java that serve many clients</li> <li>Implement Java Server Pages (JSP) and Servlets to utilize network resources (usually HTTP resources)</li> <li>Develop SOAP and Rest web services</li> <li>Develop the corresponding consumer applications (SOAP clients and Rest clients)</li> </ul>		
<p><b>General Competences</b> 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?</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">Search for, analysis and synthesis of data and information, with the use of the necessary technology</td> <td style="width: 50%; border: none;">Project planning and management Respect for difference and multiculturalism Respect for the natural environment</td> </tr> </table>	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 Respect for the natural environment
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Adapting to new situations	Showing social, professional and ethical responsibility and sensitivity to gender issues
Decision-making	Criticism and self-criticism
Working independently	Production of free, creative and inductive thinking
Team work	.....
Working in an international environment	Others...
Working in an interdisciplinary environment	.....
Production of new research ideas	

- Search for, analysis and synthesis of data and information, with the use of the necessary technology
- Working independently

**(3) SYLLABUS**

- Introduction to network programming
- Java Threads
- Java Socket Programming
- Java Data Base Connectivity
- Java Server Pages
- Servlets
- SOAP Web services
- Rest Web services
- XML APIs for Java
- Java and Multimedia
- Security and Java Objects
- Introduction to client-side programming

**(4) TEACHING and LEARNING METHODS - EVALUATION**

<b>DELIVERY</b> Face-to-face, Distance learning, etc.	Face-to-face	
<b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b>  Use of ICT in teaching, laboratory education, communication with students	<ul style="list-style-type: none"> <li>• Use of ICT in teaching,</li> <li>• Use of electronic documents for supporting of lectures (presentations and other materials in electronic form)</li> <li>• Support of learning process with the Asynchronous Learning Platform open eclass</li> </ul>	
<b>TEACHING METHODS</b>  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	<b>Activity</b>	<b>Semester workload</b>
	Lectures	39
	Laboratory practise	13
	Project	30
	Independent personal study	43
	Course total	<b>125</b>
<b>STUDENT PERFORMANCE EVALUATION</b>  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.	<p>I. Written final exams (80%) that includes:</p> <ul style="list-style-type: none"> <li>- short-answer questions</li> <li>- problem solving</li> </ul> <p>II. Laboratory work (20%)</p>	

**(5) ATTACHED BIBLIOGRAPHY**

- Suggested bibliography:

1. Java για λίγους, Νικήτας Ν. Καρανικόλας
2. Προγραμματισμός δικτυακών εφαρμογών με Java, Elliotte Rusty Harold
3. Java Προγραμματισμός, 10η Εκδ., Harvey M., Paul J. Deitel
4. Servlets και σελίδες διακομιστή Java, M. Hall, L. Brown
5. Core Java 2, Vol. 2 Advanced Features, Horstmann, Cornell

- Related academic journals: