

INSTITUTION	NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS																			
SCHOOL	SCHOOL OF SCIENCE																			
DEPARTMENT	INFORMATICS AND TELECOMMUNICATIONS																			
COURSE LEVEL	UNDERGRADUATE																			
COURSE TITLE	Didactics of Informatics																			
COURSE CODE	ΥΣ10	Semester	7	ECTS	6															
TEACHING HOURS per week	THEORY	2	SEMINAR.		LABORATORY	2														
COURSE TYPE	<p>Select one of the following and delete the rest Electives (ΠΜ)</p> <table border="1"> <thead> <tr> <th>K</th> <th>E1</th> <th>E2</th> <th>E3</th> <th>E4</th> <th>E5</th> <th>E6</th> </tr> </thead> <tbody> <tr> <td>A-B</td> <td>E</td> <td>E</td> <td>E</td> <td>E</td> <td>E</td> <td>E</td> </tr> </tbody> </table> <p><i>Fill the table as in the curriculum: Track (A-Computer Science, B- Computer Engineering) / Specialization Compulsory (Y) / Core Specialization (B)/ Elective Specialization (E)</i></p>						K	E1	E2	E3	E4	E5	E6	A-B	E	E	E	E	E	E
K	E1	E2	E3	E4	E5	E6														
A-B	E	E	E	E	E	E														
URL	https://eclass.uoa.gr/courses/D261/																			
EXPECTED PRIOR KNOWLEDGE/ PREREQUISITES AND PREPARATION:																				
TEACHING AND EXAMINATIONS LANGUAGE:	GREEK																			
THE COURSE IS OFFERED TO ERASMUS STUDENTS	NO																			

COURSE CONTENT
<p>Didactics of Informatics studies the educational environment which enables the knowledge construction of primary concepts of Computer Science and the development of relevant skills. In this context a number of issues are studied concerning the teaching and learning of programming, alternative didactical approaches and educational environments that support learning, text comprehension, design of suitable learning and assessment activities. In particular, the course content involves: Main concepts of Didactics, representation of knowledge and the notion of knowledge conflict, algorithmic and computational thinking, the Greek curricula of Informatics, didactics of programming, misconceptions and difficulties, didactical approaches, didactics of structured and object programming, educational programming environments for various grades, educational</p>

games, educational robotics, the concept of analogy and its role in teaching informatics concepts, concept mapping in informatics, text comprehension of informatics material, assessment forms and tools, the Greek informatics lab.

STUDENT LEARNING OBJECTIVES

Expected Learning Outcomes

Upon successful completion of the course the student will be able to:

- define main didactics concepts and explain by example the didactic transformation
- mention and explain students' misconceptions concerning programming concepts
- name specific didactical approaches that can be used in teaching programming and apply them in designing learning activities to overcome misconceptions or achieve specific learning goals
- use computer-based/web-based educational programming environments in designing learning activities taking into consideration the characteristics of the target group and the concepts to be taught
- exploit and develop educational games for specific concepts
- design text comprehension questions following known models of text comprehension
- utilize concept maps as a tool for learning and assessment
- design assessment activities using various tools

TEACHING AND LEARNING METHODS - ASSESSMENT

TEACHING METHOD	In Class (Face to Face)
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	<p>Learning process supported by the e-class platform: course description, provision of material, announcements, messages, assignment/submission of activities, provision of feedback, discussions concerning the activities/assignments</p> <p>Email communication</p> <p>Live transmission of lectures</p> <p>Ability to track recorded lectures</p> <p>Utilization of Specialized Software during labs</p>
TEACHING ORGANIZATION <i>Describe in detail the way and methods of teaching:</i> <i>Enhanced Lectures,</i> <i>Online Lectures,</i> <i>Seminars,</i> <i>Tutorial,</i> <i>Laboratory,</i> <i>Laboratory Exercise,</i> <i>Study & analysis of literature,</i> <i>Practice (Positioning),</i> <i>Interactive teaching,</i> <i>Developing a project,</i> <i>Individual / group work</i> <i>Telework (reference to tools) etc.</i>	<p>The theoretical part of the course is taking place in a typical classroom using slides, videos and teaching methods that promote students active involvement and the elicitation of their prior knowledge such as brainstorming, Q & A, discussion and activities to introduce them in the subject.</p> <p>The practical part is taking place in a Microsoft Windows lab where dedicated software is installed. The students are engaged in activities that give them the chance to use various computer-based/web-based educational environments, to develop educational applications like games, simulations, etc and design learning and assessment activities. The students have to submit all the lab activities plus one personal assignment (different for each student).</p>

<p><i>Details of the student's study hours for each learning activity and hours of non-guided study are shown to ensure that the total workload at the semester corresponds to the ECTS</i></p>	<p>They present and support their work in front of their colleagues. The students participate in written exams having for use the course material in order to perform adequate knowledge and skills in the course content.</p> <table border="1" data-bbox="768 451 1399 884"> <thead> <tr> <th>Activity</th> <th>Student Workload (hours)</th> </tr> </thead> <tbody> <tr> <td>Lectures</td> <td>26</td> </tr> <tr> <td>Laboratory</td> <td>26</td> </tr> <tr> <td>Completion of lab activities</td> <td>26</td> </tr> <tr> <td>Study and presentation of relevant literature</td> <td>10</td> </tr> <tr> <td>Personal assignment</td> <td>35</td> </tr> <tr> <td>Presentations and commentary of assignments</td> <td>15</td> </tr> <tr> <td>Preparation for the exams</td> <td>12</td> </tr> <tr> <td>Total Course</td> <td>150</td> </tr> </tbody> </table>	Activity	Student Workload (hours)	Lectures	26	Laboratory	26	Completion of lab activities	26	Study and presentation of relevant literature	10	Personal assignment	35	Presentations and commentary of assignments	15	Preparation for the exams	12	Total Course	150
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<p>ASSESSMENT OF STUDENTS <i>Description of the assessment process</i></p> <p><i>Assessment Methods, Formative or Concluding, Multiple Choice Test, Quick Response Questions, Test Development Questions, Problem Solving, Written Work, Report / Report, Oral Examination, Public Presentation, Laboratory Work, Other / Other</i></p> <p><i>Fully defined evaluation criteria are mentioned and if and where they are accessible to students.</i></p>	<p>In the framework of the course formative and summative assessment is followed. For each lab activity, feedback is provided to each student. As feedback to the personal assignment, they receive a rubric enriched with comments. The feedback is provided through eclass.</p> <table border="1" data-bbox="768 1102 1399 1270"> <thead> <tr> <th>Assessment methods</th> <th>Number</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Written examination</td> <td>1</td> <td>50%</td> </tr> <tr> <td>Activities (lab & literature)</td> <td>13</td> <td>20%</td> </tr> <tr> <td>Personal assignment</td> <td>1</td> <td>30%</td> </tr> </tbody> </table>	Assessment methods	Number	Percentage	Written examination	1	50%	Activities (lab & literature)	13	20%	Personal assignment	1	30%						
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LITERATURE AND STUDY MATERIALS / READING LIST
<p>Προτεινόμενα συγγράμματα (Εύδοξος): Διδακτικές Προσεγγίσεις και Εργαλεία για τη διδασκαλία της Πληροφορικής, Συλλογικό Επικουρικό σύγγραμμα: Κόμης, Β. (2005). Εισαγωγή στη Διδακτική της Πληροφορικής. Αθήνα: Εκδόσεις Κλειδάριθμος.</p>