

DESIGN AND DEVELOPMENT OF INFORMATION SYSTEMS

1. GENERAL

SCHOOL	ENGINEERING		
DEPARTMENT	INFORMATICS AND COMPUTER ENGINEERING		
LEVEL OF EDUCATION	UNDERGRADUATE		
COURSE CODE		SEMESTER OF STUDIES	7 ^o , 9 ^o
COURSE TITLE	DESIGN AND DEVELOPMENT OF INFORMATION SYSTEMS		
INDEPENDENT TEACHING ACTIVITIES <i>in case the credits are awarded in separate parts of the course e.g. Lectures, Laboratory Exercises, etc. If the credits are awarded uniformly for the whole course, indicate the weekly teaching hours and the total number of credits.</i>		WEEKLY HOURS OF TEACHING	ECTS CREDITS
Lectures		2	
Practice -Exercises		2 - 1	
<i>Add rows if needed. The teaching organization and teaching - methods used are described in detail in 4.</i>		5	5
COURSE TYPE <i>Background, General Knowledge, Scientific Area, Skills Development</i>	Scientific Area, Skill Development		
PREREQUISITE COURSES:	Analysis and Design of Information Systems		
LANGUAGE OF TEACHING AND EXAMS :	Greek		
ERASMUS STUDENTS	Yes (English)		
ONLINE COURSE (URL) (if available)			

2. LEARNING OUTCOMES

<p>Learning outcomes</p> <p><i>The learning outcomes of the course are described, the specific knowledge, skills and abilities of an appropriate level that students will acquire after the successful completion of the course.</i></p> <p><i>Refer to Appendix A.</i></p> <ul style="list-style-type: none"> • <i>Description of the Level of Learning Outcomes for each course according to the Qualifications Framework of the European Higher Education Area</i> • <i>Descriptive Indicators Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Annex B</i> • <i>Summary Guide for writing Learning Outcomes</i> <p>The course covers design, development and management issues of information systems in the context of an integrated business architectural and strategic approach. Emphasis is placed on advanced and specialized information and business modeling techniques systems as well as administrative and industrial processes. There are discussions about various theoretical approaches to the above objects in order the student to develops the ability to make decisions but also to create new ones. Its field of knowledge is thoroughly examined administration/management of large (organizational) and/or specialized information systems. Particular emphasis is placed on project management development of information systems.</p> <p>Upon successful completion of the course the student will be able to:</p> <ul style="list-style-type: none"> ● have in-depth knowledge of models, tools, techniques and methodologies of business and information systems design as well as the corresponding management and development techniques. ● to be able to deal autonomously and comprehensively with a development/management project and the operation of an information system of a decent size and complexity. ● to organize and plan their work as a group, to coordinate and control its

<p>progress, collect and organize it necessary material, to prepare the deliverables, to communicate with them involved with clarity and clearness and develop prototypes of the system.</p> <ul style="list-style-type: none"> ● have the ability to combine knowledge and deal with a whole interdisciplinary dimensions that enter into the design, development and the management of an information system, such as social, operational, psychological, moral and others. ● possess the necessary learning skills that enable them to continue their studies in a largely self-sufficient manner or/and autonomous. 	
General Abilities	
<i>Taking into account the general skills that the graduate must have acquired (as they are listed in the Diploma Supplement and are listed below), which of them is intended for the course ?.</i>	
<i>Search, analysis and synthesis of data and information, using the necessary technologies</i> <i>Adaptation to new situations</i> <i>Decision making</i> <i>Autonomous work</i> <i>Teamwork</i> <i>Working in an international environment</i> <i>Work in an interdisciplinary environment</i> <i>Production of new research ideas</i>	<i>Project design and management</i> <i>Respect for diversity and multiculturalism</i> <i>Respect for the natural environment</i> <i>Demonstration of social, professional and moral responsibility and sensitivity in gender issues</i> <i>Exercise criticism and self-criticism</i> <i>Promoting free, creative and inductive thinking</i>
<ul style="list-style-type: none"> ● Search, analysis and synthesis of data and information, using the necessary technologies ● Adaptation to new situations ● Decision making ● Autonomous work ● Team work ● Work in an interdisciplinary environment ● Production of new research ideas ● Promoting free, creative and inductive thinking 	

3. COURSE CONTENT

The teaching deals with:

- (a) The architecture of an integrated information system (data, application and technology architecture) in relation to business system architectures. Utilization of architecture frameworks (eg TOGAF)
- (b) Overall and integrated, the design, implementation, development methodologies and management of an Information System within an organization
- (c) Thoroughly the known types of analysis and design methods and techniques information systems as well as reorganization (BPR) of administrative and industrial process (such as IDEF, Business Process Model and Notation (BPMN), MERISE, UML, SysML Modelling) as well as the build framework and background specialized methodologies and tools.
- (d) Information systems life cycle theories and principles design, implementation and management of the relevant projects.

There is also a selection and application of the appropriate ones, for the specific ones problems, implementation tools (business development tools architecture and systems, software, database management, workflow management etc.) of the Information System.

Exercises Actions : a hypothetical problem is presented and thoroughly analyzed (case study). Design, development, management alternatives are discussed.

Workshop: The use and exploitation of tools and techniques is consolidated in the analysis, design and development of an integrated project information system.

4. TEACHING AND LEARNING METHODS - EVALUATION

METHOD OF DELIVERY <i>Face to face, Distance education etc.</i>	In class face to face														
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES <i>Use of ICT in Teaching, in Laboratory Education, in Communication with students</i>	Different platforms of systems design are used (e.g. enterprise architecture modeling tool) and project management software (project management). Support learning process through e-class electronic platform														
TEACHING ORGANIZATION <i>The way and methods of teaching are described in detail.</i> <i>Lectures, Seminars, Laboratory Exercise, Field Exercise, Bibliography study & analysis, Tutoring, Internship (Placement), Clinical Exercise, Art Workshop, Interactive teaching , Study visits, Study work, artwork, creation. λπ.</i> <i>The student study hours for each learning activity are indicated as well as the non-guided study hours so that the total workload at the semester level corresponds to the ECTS standards .</i>	<table> <tr> <th><i>Activity</i></th><th><i>Semester Workload</i></th></tr> <tr> <td>Lectures</td><td>26</td></tr> <tr> <td>Practice exercises</td><td>26</td></tr> <tr> <td>Laboratory exercises</td><td>13</td></tr> <tr> <td>Working out assignments</td><td>30</td></tr> <tr> <td>Independent Study</td><td>30</td></tr> <tr> <td>Total Course Load (25 hours per credit)</td><td>125</td></tr> </table>	<i>Activity</i>	<i>Semester Workload</i>	Lectures	26	Practice exercises	26	Laboratory exercises	13	Working out assignments	30	Independent Study	30	Total Course Load (25 hours per credit)	125
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STUDENT EVALUATION <i>Description of the evaluation process</i> <i>Assessment Language, Assessment Methods, Formative or Concluding, Multiple Choice Test, Short Answer Questions, Essay Development Questions, Problem Solving, Written Assignment, Report / Report, Oral Examination, Public Presentation, Public Presentation, Others</i> <i>Explicitly defined assessment criteria are stated and if and where they are accessible to students.</i>	I. Written final exam (60%) which include: - Brief case study - Comparative assessment of theory elements II. Presentation of Laboratory Work and Exercises (40%)														

5. RECOMMENDED-BIBLIOGRAPHY

- Suggested Bibliography:

- Wallace P. Πληροφοριακά συστήματα διοίκησης, Εκδόσεις Κριτική, 2014
- A. Dennis, B-H. Wixom, D. Tegarden ANAΛΥΣΗ και ΣΧΕΔΙΑΣΜΟΣ ΣΥΣΤΗΜΑΤΩΝ με τη UML 2.0: μια αντικειμενοστραφής προσέγγιση, Εκδόσεις Κλειδάριθμος 2010
- Cadle J., Yeates D., Project Management for Information Systems, Pearson Education, 2008.
- Avison D., Torkzadeh R., Torkzadeh G., Information Systems Project Management, Sage Publications, 2008.
- Irani Z., Love P., Evaluating Information Systems: Public and Private Sector, Butterworth-Heinemann, 2008.
- Avison D.E., Fitzgerald J.E., Information Systems Development: Methodologies, Techniques and Tools, 2nd ed., McGraw-Hill, 2003.
- Errol S., Distributed Multimedia Information Systems, McGraw-Hill, 1996.
- Cohen B., Heckenroth H., Asselborn J-C., Ingénierie des Systèmes d' Information: MERISE Deuxième génération, 4e édition, Editions Vuibert, 2017.
- Dittman K.C., Application Cases in Systems Analysis & Design, McGraw-Hill, 1997.
- M. Fowler, Patterns of Enterprise Application Architecture, Addison-Wesley, 2014.

- *Related scientific journals:*

- Journal of Systems and Information Technology ISSN: 1328-7265
- Business and Information Systems Engineering, Springer ISSN: 1867-0202
- Journal of Strategic Information Systems ELSEVIER, ISSN:09638687