

Introduction to Informatics [3330]

COURSE OUTLINE

(1) GENERAL

SCHOOL	ANIMAL BIOSCIENCES		
ACADEMIC UNIT	DEPARTMENT OF ANIMAL SCIENCE		
LEVEL OF STUDIES	Undergraduate [Required]		
COURSE CODE	3330	SEMESTER	2 nd
COURSE TITLE	INTRODUCTION TO INFORMATICS		
INDEPENDENT TEACHING ACTIVITIES <i>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</i>		WEEKLY TEACHING HOURS	CREDITS (ECTS)
Theory: Lectures		2	2
Laboratory: Use of Software Tools		3	3
Total		5	5
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	Scientific Area (M4.017)		
PREREQUISITE COURSES:	-		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS:	Yes (in gREEK)		
COURSE WEBSITE (URL):	https://oeclass.aua.gr/eclass/courses/277/		

(2) LEARNING OUTCOMES

Learning outcomes
<i>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.</i>
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
Upon successful completion of the course, students will be able (according to Bloom) to: - Understand the basic concepts of Information Science and their implications in society, employment, scientific progress, and philosophy (Knowledge / Comprehension). - Distinguish the capabilities of the components of a computer and select appropriate parts for a computer system according to the needs of their scientific field (Analysis / Application). - Understand the capabilities and features of their computer's Operating System (Knowledge / Comprehension). - Use specific software packages for data processing, analysis, evaluation of results, and decision-making in their scientific field (Application / Analysis). - Use the computer for collaborative learning with partners in the context of group work (Application / Synthesis). - Understand the concept of an algorithm and create algorithms in the form of flowcharts to solve computational problems (Knowledge / Comprehension / Application). - Implement algorithms using the Python programming language (Application / Synthesis). - Understand the concept of a database, its utility, design principles, methodology, and data processing methods, and design, implement, and manage simple databases (Knowledge / Comprehension / Application / Analysis). - Know the basic concepts of networking, the internet, its services, and related security issues (Knowledge / Comprehension). - Understand issues related to cutting-edge technologies (artificial intelligence, virtual reality, big data, IoT, cloud computing) and their applications and techniques (Knowledge / Comprehension / Application).
General Competences
<i>Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear</i>

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
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

Project planning and management
Respect for difference and multiculturalism
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
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Others...
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- Search, analysis and synthesis of data and information by use of the necessary information and communication technologies.
- Adaptation to new situations.
- Decision making.
- Individual work.
- Team work.

(3) SYLLABUS

Theory

1. Representation, storage and manipulation of data in a computer system, IT applications.
2. Computer Hardware: Central Processing Unit, Main Memory, Peripheral Units.
3. Algorithms - Data Flow Diagrams - Programming Languages – Python Programming.
4. Computer Software: Operating Systems, Application Software.
5. Database Systems.
6. Artificial Intelligence.
7. Information Systems: Analysis-Design of Systems, Decision-Making Systems.
8. Communications-Computer Networks: Internet Technology, Internet Services, Internet Multimedia Applications.
9. Computer Security.
10. Recent advancements and technological achievements.

Laboratory

1. Spreadsheets (formats, functions, reports, graphs)
2. Database Software (design, data entry, query design, forms)

(4) TEACHING and LEARNING METHODS - EVALUATION

TEACHING METHOD <i>Face-to-face, Distance learning, etc.</i>	In classroom and in laboratory (face-to-face). If needed, synchronous distance teaching can be applied in both theory and laboratory. Also, educational material for asynchronous distance teaching has been uploaded in the course Web page.	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	Exploitation of Information and Communication Technologies in teaching, in laboratory training and in the communication with students. Use of dedicated software. Use of integrated e-learning system. Communication with students via open eclass platform and e-mail.	
TEACHING METHODS <i>The manner and methods of teaching are described in detail.</i> <i>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.</i> <i>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</i>	Activity	Semester workload
	Lectures	26
	Laboratory work	39
	Independent study	60
	Course total (25 h of workload per ECTS)	125
STUDENT PERFORMANCE EVALUATION <i>Description of the evaluation procedure</i> <i>Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report,</i>	I. Theory Final Exam, written or oral, of increasing difficulty, which may include Multiple choice test, Questions of brief answer, Questions to develop a topic, Judgment questions and Exercise solving. Marking Scale: 0-10. Minimum Passing Mark: 5. II. Laboratory	

<i>oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other</i> <i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i>	Final Exam, hands on computer, of the software tools taught. Assuming feasibility, progress exams will take place during the semester and the mark of the above will contribute to the determination of the final Laboratory mark. Marking Scale: 0-10. Minimum Passing Mark: 5. The final Course mark is the average of the marks on Theory and Lab.
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(5) ATTACHED BIBLIOGRAPHY

Suggested:

Εισαγωγή στην Πληροφορική και τους Υπολογιστές. Μποζάνης Παναγιώτης Δ. Έκδοση 1η , 2016, ISBN: 9789604185382 (Κωδικός Βιβλίου στον Εύδοξο: 50656007), ΕΚΔΟΣΕΙΣ Α. ΤΖΙΟΛΑ & ΥΙΟΙ Α.Ε.

Εισαγωγή στην πληροφορική. Evans Alan, Martin Kendall, Poatsy Mary Anne. 3η έκδ./2022, ISBN: 9789605864071 (Κωδικός Βιβλίου στον Εύδοξο: 112692279), ΕΚΔΟΣΕΙΣ ΚΡΙΤΙΚΗ ΑΕ

Η ΕΠΙΣΤΗΜΗ ΤΩΝ ΥΠΟΛΟΓΙΣΤΩΝ: ΜΙΑ ΟΛΟΚΛΗΡΩΜΕΝΗ ΠΑΡΟΥΣΙΑΣΗ. J. GLENN BROOKSHEAR, 10η έκδοση /2009, ISBN: 9789604612703, Κωδικός Βιβλίου στον Εύδοξο: 13957, ΕΚΔΟΣΕΙΣ ΚΛΕΙΔΑΡΙΘΜΟΣ ΕΠΕ

Εισαγωγή στην Πληροφορική. Beekman Ben, Beekman George, 10η Έκδοση/2015 ISBN: 9789605126674, Κωδικός Βιβλίου στον Εύδοξο: 50658777, ΕΚΔΟΣΕΙΣ Χ. ΓΚΙΟΥΡΔΑ & ΣΙΑ ΕΕ

ΕΙΣΑΓΩΓΗ ΣΤΟΥΣ ΥΠΟΛΟΓΙΣΤΕΣ ΚΑΙ ΤΗΝ ΠΛΗΡΟΦΟΡΙΚΗ. ΓΚΛΑΒΑ ΜΑΙΡΗ, Έκδοση: 1/2021, ISBN: 9786182020722, Κωδικός Βιβλίου στον Εύδοξο: 102076250, ΕΚΔΟΣΕΙΣ ΔΙΣΙΓΜΑ ΙΚΕ

Additional (optional) Bibliography:

1. Computers and Electronics in Agriculture.
2. Information Sciences.