**COURSE OUTLINE**

1. **GENERAL**

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| **SCHOOL** | FINANCE AND STATISTICS | | | | |
| **ACADEMIC UNIT** | DEPARTMENT OF STATISTICS AND INSURANCE SCIENCE | | | | |
| **LEVEL OF STUDIES** | Graduate | | | | |
| **COURSE CODE** |  | **SEMESTER** | | **3** | |
| **COURSE TITLE** | Data Management | | | | |
| **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** |
|  | | | 4 | | 5 |
|  | | |  | |  |
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| *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* | Informatics | | | | |
| **PREREQUISITE COURSES:** | The following courses are recommended for comprehending the contents of the course: Introduction to Programming | | | | |
| **LANGUAGE OF INSTRUCTION and EXAMINATIONS:** | GREEK | | | | |
| **IS THE COURSE OFFERED TO ERASMUS STUDENTS** | YES | | | | |
| **COURSE WEBSITE (URL)** |  | | | | |

1. **LEARNING OUTCOMES**

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| **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 lesson aims at the following learning objectives:   * Learning relational DB theory and SQL language * Familiarization with database design issues * Introduction to data warehousing, multidimensional analysis and data mining * Acquiring practical / technological knowledge in databases and data warehouses with PostgreSQL | |
| **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*  *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*  *……*  *Others…*  *…….* |
| * Search for, analysis and synthesis of data and information, with the use of the necessary technology * Production of free, creative and inductive thinking | |

1. **SYLLABUS**

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| The purpose of the course is to understand a DataBase (DB) as a collection of relations, through the presentation of the theoretical background (Relational Model) and the corresponding query language (SQL language), and then to study relational DB design techniques both at the conceptual / logical and physical level. Finally, the course covers issues of Data Warehousing (DW) and MultiDimensional Analysis (MDA) for decision-making at organization level.  The course consists of theoretical lectures and laboratory classes. Also, during the course a compulsory project will be given aiming at the comprehension of the above concepts via the development of a database in the popular "open" DBMS of PostgreSQL (free for educational purposes on postgresql.org). |

1. **TEACHING and LEARNING METHODS - EVALUATION**

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| **DELIVERY** *Face-to-face, Distance learning, etc.* | Lectures in class and practical exercises at labs |
| **USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY** *Use of ICT in teaching, laboratory education, communication with students* | e-class  projector |
| **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* | |  |  | | --- | --- | | ***Activity*** | ***Semester workload*** | | Lectures | 48 | | Laboratory practice | 15 | | Project | 25 | | Autonomus study | 62 | |  |  | |  |  | |  |  | |  |  | |  |  | | Course total | **150** | |
| **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.* | The final grade is 2/3 of the written exams (with open books - notes) and 1/3 of the project. (For both exams, the base is 5/10.) |

1. **ATTACHED BIBLIOGRAPHY**

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| - Suggested bibliography:   1. Silberschatz A., Korth H.F., Sudarshan S. “Database System Concepts (6th Edition)”, McGraw-Hill (2010). 2. Ramakrishnan A., Gehrke J. “Database Management Systems (3rd Edition)”, McGraw-Hill (2003). |