**COURSE OUTLINE**

1. **GENERAL**

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| **SCHOOL** | School of Economics and Management Science |
| **ACADEMIC UNIT** | Department of Economics |
| **LEVEL OF STUDIES** | 6 |
| **COURSE CODE** | 107 | **SEMESTER** | 1st  |
| **COURSE TITLE** | Introduction to Computational Economics |
| **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 | 7,5 |
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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* | General background, skills development |
| **PREREQUISITE COURSES:** | No |
| **LANGUAGE OF INSTRUCTION and EXAMINATIONS:** | Greek |
| **IS THE COURSE OFFERED TO ERASMUS STUDENTS** | No |
| **COURSE WEBSITE (URL)** | http://stavrakoudis.econ.uoi.gr/stavrakoudis/?iid=2 |

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*
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|  By the end of the course the student will be able to:* Perform simple calculations using spreadsheets (Excel, Google sheets) or computational statistics software like R.
* Use Maxima to solve mathematical problems like solving polyonymic equations, systems of linear/nolinear equations, calculate direvatives and integrals, static optimization of functions with up to 2 variables.
* Solve simple introductory problems of economic analysis
* Make plots and graphs of mathematical functions or stitistical related graphs (scatter plots, histograms, bar chars, etc) using spreadsheets, Maxima or R.
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| **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…**…….* |
| Working independently Working in an interdisciplinary environment Writing computer code Production of creative and inductive thinkingPresenting their work |

1. **SYLLABUS**

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| 1. Plotting and graphing data sets
2. Getting familiar with economic data (ELSTAT, Eurostat, etc)
3. Simple mathematical and statistical computations
4. Numerical data, floating point numbers, accuracy of computations
5. Solving equations
6. Utility computations with the computer
7. Market equilibrium
8. Elastisity
9. Consumer and Producer Surplus
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1. **TEACHING and LEARNING METHODS - EVALUATION**

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| **DELIVERY***Face-to-face, Distance learning, etc.* | Face-to-face, online video lectures  |
| **USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY** *Use of ICT in teaching, laboratory education, communication with students* | Complete course management via website <http://stavrakoudis.econ.uoi.gr/stavrakoudis/?iid=2>, video lectures, slides, code and examples, announcements, polls, comments, etc. Lectures with laptop/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* |

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| ***Activity*** | ***Semester workload*** |
| Lectures, | 52 |
| Directed study | 25 |
| Computer work | 75 |
| Test and quiz | 10 |
| Homework | 25 |
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| Course total  | 187 hours |

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| **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.* | Mixture of :a) online quiz and testsb) computer lab workc) presentations of assignments |

1. **ATTACHED BIBLIOGRAPHY**

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| --- |
| * A. Stavrakoudis, Introductions to Computational Methods for Economics and Business Studies (in Greek), Athens, 2012
* A. Ekonomidis, V. Karatzoglou, T. Chatzidaki, Excel usage and applications to Economics and Management Economics (in Greek)
* J. Leypold, M. Petry, Maxima for Economics, http://statmath.wu.ac.at/~leydold/maxima/
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