**COURSE OUTLINE**

1. **GENERAL**

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| **SCHOOL** | FINANCE AND STATISTICS | | | | |
| **ACADEMIC UNIT** | STATISTICS AND INSURANCE SCIENCE | | | | |
| **LEVEL OF STUDIES** | UNDERGRADUATE | | | | |
| **COURSE CODE** | SAASF04 | **SEMESTER** | | 5th | |
| **COURSE TITLE** | LIFE INSURANCE II | | | | |
| **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** |
| Lectures | | | 4 | | 6 |
|  | | |  | |  |
|  | | |  | |  |
| *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 | | | | |
| **PREREQUISITE COURSES:** | NONE  However the 4th semester course “Life Insurance I” helps the understanding of this course | | | | |
| **LANGUAGE OF INSTRUCTION and EXAMINATIONS:** | Greek | | | | |
| **IS THE COURSE OFFERED TO ERASMUS STUDENTS** | NO | | | | |
| **COURSE WEBSITE (URL)** | https://eclass.unipi.gr/courses/SAE105/ | | | | |

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* | |
| Life Insurance II is a continuation of the Life Insurance Ι course. The course covers the thematic sections: gross premiums and reserves, profit testing, life insurance models for two or more lives, multiple decrement models and multi state theory.  On completion of this course the student should be able to:   * Calculate gross premiums and total reserves using the equivalence principle. * Calculate modified net premiums and reserves * Perform profit testing analysis. * Solve insurance and annuity problems involving multiple lives. * Construct and analyze multiple decrement tables * Solve life insurance problems involving multiple causes of decrement. | |
| **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*  *Working independently*  *Production of free, creative and inductive thinking* | |

1. **SYLLABUS**

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| **Insurance models including expenses:** Types of expenses, Gross premiums and reserves, Modified reserves, Withdrawal benefits, Asset shares, Profit testing, Unit Linked products.  **Multiple life functions:** Joint distribution of future lifetime of two or more lives, Joint survival function, Joint-life status and last-survivor status, Force of mortality of a survival status, Insurance and annuity benefits depending on survival of two lives, Special mortality assumptions, Compound statuses, Contingent probabilities and insurances, Reversionary annuities.  **Multiple decrement models:** Causes of decrement, Force of decrement for each cause of decrement, Random survivorship group, Deterministic survivorship group, Multiple decrement table and its associated single decrement tables, Net probabilities of decrement, Central rates of multiple decrement, Constant force and uniform assumption for multiple decrements, Applications of multiple decrement theory in insurance, pension and social security. |

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

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| **DELIVERY** *Face-to-face, Distance learning, etc.* | Face-to-face |
| **USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY** *Use of ICT in teaching, laboratory education, communication with students* | Electronic communication with students.  Use of the e-class platform. |
| **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 | | Independent study | 102 | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | | 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.* | Written exams (problem solving)  Oral exams for students with disabilities. |

1. **ATTACHED BIBLIOGRAPHY**

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| *- Suggested bibliography:*  Hatzopoulos P. (2011). *Life Insurance Mathematics*. Symmetria Publications (in Greek).  Newton L. Bowers, Hans U. Gerber, James C. Hickman, Donald A. Jones & Cesil J. Nesbitt (1997)*. Actuarial Mathematics, Published by “The Society of Actuaries”, Schaumburg, Illinois.*  David C. M. Dickson, Mary R. Hardy & Howard R. Waters (2013). *Actuarial Mathematics for Life Contingent Risks, Cambridge University Press.*  *- Related academic journals:* |