ΔΗΜΟΚΡΙΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ

COURSE OUTLINE

(1) GENERAL

SCHOOL	*SCHOOL OF SCIENCE*		
ACADEMIC UNIT	*Department of Informatics*		
LEVEL OF STUDIES	*UNDERGRADUATE*		
COURSE CODE	**404ΓΥΥΚ**	**SEMESTER**	**4th**
COURSE TITLE	*STATISTICS AND PROBABILITIES*		

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	*2*	*3*
Exercises	*1*	
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:	*MATHEMATICS II*
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	*Greek*
IS THE COURSE OFFERED TO ERASMUS STUDENTS	*No*
COURSE WEBSITE (URL)	*https://moodle.cs.ihu.gr/moodle/course/view.php?id=28*

(2) LEARNING OUTCOMES

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 course aims at introducing students in the applications of statistical methods on real problems. It provides knowledge and skills which are necessary to the students of Computer Science for analysing quantitative data by utilizing statistical tests.

Specifically, as outcome of completing the course, the student will be able to:

- Utilize parametric statistical methods
- Set research questions and check hypotheses
- Choose the most suitable statistical test depending on the specific case
- Perform descriptive and inferential tests by utilizing the SPSS tool
- Create questionnaires and check their reliability
- Analyze collected data

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	*Project planning and management*
Adapting to new situations	*Respect for difference and multiculturalism*
Decision-making	*Respect for the natural environment*
Working independently	*Showing social, professional and ethical responsibility and sensitivity to gender issues*
Team work	*Criticism and self-criticism*
Working in an international environment	*Production of free, creative and inductive thinking*
Working in an interdisciplinary environment	*……*
Production of new research ideas	*Others…*
	…….

- 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
- Production of free, creative and inductive thinking
- Project planning and management

(3) SYLLABUS

- Basic concepts and basic elements of statistical tests, probability of false decision, error margin.
- Confidence intervals.
- Hypotheses testing.
- Creation of questionnaires, points of attention, types of questions, questionnaire reliability checking.
- Multiple regression, creation of regression model, model suitability checking.
- Prediction and prediction error.
- Factorial analysis of multiple data.
- Hierarchical Classification.

(4) TEACHING and LEARNING METHODS - EVALUATION

<table>
<tr><td>DELIVERY
Face-to-face, Distance learning, etc.</td><td>Face-to-face (in class)</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY

Use of ICT in teaching, laboratory education, communication with students</td><td>Supporting learning process through the online platform e-class</td></tr>
<tr><td>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</td><td>
<table>
<tr><th>Activity</th><th>Semester workload</th></tr>
<tr><td>Lectures</td><td>26x2 = 52 hours</td></tr>
<tr><td>Independent Study</td><td>23 hours</td></tr>
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<tr><td>Course total</td><td>75 hours</td></tr>
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<tr><td>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.</td><td>Total grade (100%):
- Final written examination (70%)
- Assignment (30%)</td></tr>
</table>

(5) ATTACHED BIBLIOGRAPHY

[1] Δημητριάδης Ευστάθιος Επιχειρήσεων με εφαρμογές σε SPSS και LISREL,, Εκδόσεις Κριτική, 2012.
[2] ΧΡΗΣΤΟΣ ΦΡΑΓΚΟΣ, ΜΕΘΟΔΟΛΟΓΙΑ ΕΡΕΥΝΑΣ ΑΓΟΡΑΣ ΚΑΙ ΑΝΑΛΥΣΗ ΔΕΔΟΜΕΝΩΝ ΜΕ ΧΡΗΣΗ ΤΟΥ ΣΤΑΤΙΣΤΙΚΟΥ ΠΑΚΕΤΟΥ SPSS, Εκδόσεις Interbooks, 2004
[3] Field, A. Discovering Statistics using IBM SPSS Statistics (4th ed.), University of Sussex: Sage Publications LTD, 2013.
[4] Norusis, M. J. IBM SPSS Statistics 19 Guide to Data Analysis, New Jersey: Prentice Hall, 2011
[5] Κολυβά - Μαχαίρα Φωτεινή, Μπόρα - Σέντα Ευθυμία, Μπράτσας Χαράλαμπος, "Στατιστική", Εκδόσεις ΖΗΤΗ, Θεσσαλονίκη, 2018.