COURSE OUTLINE

(1) GENERAL

SCHOOL	School of Agricultural Sciences		
ACADEMIC UNIT	Biosystems & Agricultural Engineering		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	**BAE_320**	**SEMESTER**	**3RD**
COURSE TITLE	**STATISTICS**		

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	3	
Tutorials	2	
Laboratory	0	
TOTAL	**5**	**5**
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*	Background General Knowledge Skills development
PREREQUISITE COURSES:	There are no prerequisite courses.
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek .-For Erasmus students in English
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes
COURSE WEBSITE (URL)	

(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*

At the end of this course the student should know the basic principles of probability theory and statistics. It should also be able to apply these principles to problems relating to environmental applications.

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…
…….

At the end of this course the student will have further developed the following skills:
1. Ability to understand the basic concepts and methods.
2. Ability to apply them.
3. Search, analysis and synthesis of data and information, using the necessary technologies
4. Decision making
5. Autonomous work

(3) SYLLABUS

1. Introduction to statistical science and methodology.
2. Probabilities / Distributions. The normal distribution
3. How do I find out if a set of measurements follows the normal distribution?
4. Statistical tests I: t-student distribution, t-test for a population
5. Statistical tests II: Comparison of two populations [Independent samples t-test]
6. Statistical tests III: t-test for dependent samples [Paired samples t-test.
7. Statistical tests IV: One-Way ANOVA [One-Way ANOVA]
8. Linear regression (+ laboratory).
9. Applications of Statistics I in Biosystems (+ laboratory).
10,11,12.Applications of Statistics II in Agriculture (+ laboratory).
13 Summary

(4) TEACHING and LEARNING METHODS - EVALUATION

<table>
<tr><td>DELIVERY
Face-to-face, Distance learning, etc.</td><td>Face to face teaching, Experiential activities, Laboratory training</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY
Use of ICT in teaching, laboratory education, communication with students</td><td>• Use of ICT (power point) in Teaching
• Use of ICT (power point) in Laboratory Training
• Use of ICT in Communication with students (Learning process support through the electronic 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>39</td></tr><tr><td>UNGUIDED STUDY</td><td>46</td></tr><tr><td>Study hours. Literature survey’EXAMS</td><td>40</td></tr><tr><td>Course total</td><td>125</td></tr></table></td></tr>
<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>1. The main assessment criteria focus on understanding and correlating the knowledge that students gain from the course with other knowledge. Particular emphasis is placed on whether they have developed the ability to apply this knowledge to crop selection and to assess the impact of these changes on the environment. Emphasis is also placed on demonstrating critical ability and justifying the choices they make in each problem.
2. Evaluation is dynamic. It mainly involves problem solving. is done orally or in writing or with a combination of the two, with or without pre-examination on the basic principles of the course, with or without exculpatory advances and with</td></tr>
</table>

	other test or inventive methods, depending on the composition of the dynamics and the needs of the audience. 3. The above are done in the Greek language. For foreign language students (eg Erasmus students) conducted in English

(5) ATTACHED BIBLIOGRAPHY

- Kolmogorov, A. N. (1956). Foundations of the Theory of Probability. Chelsey Publishing Company, New York.
- Κολυβά-Μαχαίρα, Φ. & Μπόρα-Σέντα, Ε. (2013). Στατιστική: Θεωρία και Εφαρμογές. Εκδόσεις Ζήτη, Θεσσαλονίκη.
- Κούτρας, Μ. (2004). Εισαγωγή στις Πιθανότητες, Θεωρία και Εφαρμογές, 2η Έκδοση, Μέρος Ι. Εκδόσεις Σταμούλη.
- Lehmann, E. L. (1983). Theory of Point Estimation. John Wiley and sons, Inc., New York.
- Rao, C. R. (2008). Linear Statistical Inference and its Applications, 2nd edition. Wiley Series on Probability and Statistics
- Snedecor, G. W. & Cochran, W. G. (1989). Statistical Methods, 8th edition. Ames, Iowa: Blackwell Publishing Professional.