COURSE OUTLINE

1. GENERAL

SCHOOL	SCHOOL OF PLANT SCIENCE		
ACADEMIC UNIT	DEPARTMENT OF CROP SCIENCE		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	3515	**SEMESTER**	4th
COURSE TITLE	Agricultural Experimentation		
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	3
Laboratory Exercises		2	2
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*	Scientific expertise		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	GREEEK (and English if required)		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes		
COURSE WEBSITE (URL)	https://oeclass.aua.gr/eclass/courses/EFP182/		

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 provides primary knowledge about agricultural experimental designs and analysis of data.

The aim of this course is to train students in experimental design, statistical processing, analysis and interpretation of data resulting from of one factor (OFAT)- and multifactorial experiments in Agricultural Sciences.

Upon completion of the course, students will be able to evaluate the effect of various interventions on their experiments and make rational decisions with respect to questions raised at the production level or in research.

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*
Teamwork	*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…*

1. Information and data acquisition, analysis, and synthesis, using appropriate technologies.
2. Decision-making
3. Ability to work independently.
4. Generating new research ideas
5. Promotion of free, creative and inductive thinking.

3. SYLLABUS

Basic Principles of Experimental Design (randomization; replication; local control).
Size and shape of experimental units.
Completely randomized design; A posteriori multiple and a priori comparisons tests.
Randomized complete block design; Latin square design; Full factorial designs; Split plot and strip plot designs; Correlation and Linear Regression; Data transformation.

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Classroom and field lecturing
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Use of online resources and electronic devices. Social media Learning process support by access to e-class asynchronous distance learning 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*	
STUDENT PERFORMANCE EVALUATION *Description of the evaluation procedure*	I. Final written exam in the theory of the course including a combination

Activity	***Semester workload***
Lectures	39
Laboratory practice	26
Personal study	60
Course total	**125**

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.*	of 10 short-answer questions, open-ended questions and multiple-choice questions. II. The written examination in the laboratory part of the course includes 5 short answers, open-ended, problem solving and documentation questions (the ability to apply the principles and mechanisms and the way of approaching and documenting the answer is evaluated).

1. ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

- Gomez, K. A., & Gomez, A. A. (1984). Statistical Procedures for Agricultural Research. (2nd ed.) (pp.680). New York: John Wiley and Sons.
- Alan G. Clewer &Scarisbrick DH (2001) Practical Statistics and experimental design for plant and crop science. Wiley
- Kuehl, R. (2000). Design of experiments: statistical principles of research design and analysis (2nd ed.). Pacific Grove (Calif.): Duxbury press.
- Montgomery, D. C. (2012). Design and analysis of experiments (8th ed.). Hoboken (N. J.): Wiley.
- Peterson, R. G. (1994). Agricultural Field Experiments. Design and Analysis. New York: Marcel Dekker.
- Reza Hoshmand, A. (1994): Experimental Research Design and Analysis. CRC Press
- Kaltsikis, Pantousis I (1997). Agricultural Experimentation Simple Experimental Designs

- Related academic journals:

Crop Science, Molecular Breeding, Euphytica, Transgenic Research