COURSE OUTLINE

1. GENERAL INFORMATION

FACULTY/SCHOOL	SCHOOL OF PLANT SCIENCE		
DEPARTMENT	CROP SCIENCE		
LEVEL OF STUDY	*Undergraduate*		
COURSE UNIT CODE	3515	**Semester:**	6th
COURSE TITLE	**Agricultural Experimentations**		
INDEPENDENT TEACHING ACTIVITIES *in case credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the entire course, give the weekly teaching hours and the total credits*		**WEEKLY TEACHNG HOURS**	**ECTS**
Lectures		3	3
Laboratory Exersices		2	2
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail under section 4			
COURSE TYPE *Background knowledge, Scientific expertise, General Knowledge, Skills Development*	*Scientific expertise*		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION:	Greek (and English if required)		
LANGUAGE OF EXAMINATION/ASSESSMENT:			
THE COURSE IS 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 (certain) level, which students will acquire upon successful completion of the course, are described in detail. It is necessary to consult:

APPENDIX A

- *Description of the level of learning outcomes for each level of study, in accordance with the European Higher Education Qualifications' Framework.*
- *Descriptive indicators 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 students/graduates must acquire (as those are described in the Diploma Supplement and are mentioned below), at which of the following does the course attendance aim?

Search for, analysis and synthesis of data and information by the use of appropriate technologies,	*Project planning and management*
Adapting to new situations	*Respect for diversity and multiculturalism*
Decision-making	*Environmental awareness*
Individual/Independent work	*Social, professional and ethical responsibility and sensitivity to gender issues*
Group/Team work	*Critical thinking*
Working in an international environment	*Development of free, creative and inductive thinking*
Working in an interdisciplinary environment	*……*
Introduction of innovative research	*(Other…….citizenship, spiritual freedom, social awareness, altruism etc.)*
	…….

Information and data acquisition, analysis, and synthesis, using appropriate technologies.

Adaptation to different cases

Decision-making

Ability to work independently.

Generating new research ideas

Promotion of free, creative and inductive thinking.

3. COURSE CONTENT

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 METHODS--ASSESSMENT

MODES OF DELIVERY *Face-to-face, in-class lecturing, distance teaching and distance learning etc.*	Classroom and field lecturing
USE OF INFORMATION AND COMMUNICATION 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.

COURSE DESIGN

Description of teaching techniques, practices and methods:
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, Internship, Art Workshop, Interactive teaching, Educational visits, projects, Essay writing, Artistic creativity, etc.

The study hours for each learning activity as well as the hours of self-directed study are given following the principles of the ECTS.

Activity/ Method	Semester workload
Lectures	39
Laboratory practice	26
Individual laboratory project (data processing and commenting)	
Personal study	60
Total of Course (25 hours of workload per ECTS)	***125***

STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS

Detailed description of the evaluation procedures:

Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice tests, short- answer questions, open-ended questions, problem solving, written work, essay/report, oral exam, presentation, laboratory work, other……etc.

Specifically defined evaluation criteria are stated, as well as if and where they are accessible by the students.

I. Final written exam in the theory of the course including a combination 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 answer, 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).

5. 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

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Related scientific journals: Crop Science, Molecular Breeding, Euphytica, Transgenic Research

6. TEACHERS:

-Theory:

Penelope Bebeli, Professor
Vasileios Papasotiropoulos, Professor
Eleni Tani, Assistant Professor

-Laboratory:

Penelope Bebeli, Professor
Vasileios Papasotiropoulos, Professor
Eleni Tani, Assistant Professor
Anastasios Katsileros, Teaching assistant
Gkoufa Maria, Teaching assistant