

## Statistical Analysis and Data Processing with PC

### COURSE OUTLINE

#### GENERAL

<b>SCHOOL</b>	AGRICULTURAL SCIENCES		
<b>DEPARTMENT</b>	FOOD SCIENCE AND NUTRITION		
<b>EDUCATION LEVEL</b>	<i>Undergraduate</i>		
<b>COURSE CODE</b>	<b>ΒΠ415</b>	<b>SEMESTER</b>	D'
<b>COURSE TITLE</b>	Statistical Analysis and Data Processing with PC RESPONSIBLE: I. Giovanoudis		
<b>SELF-ENDED TEACHING ACTIVITIES</b> <i>in case the credits are awarded in separate parts of the course e.g. Lectures, Laboratory Exercises, etc. If the credits are awarded uniquely for the entire course, enter the weekly teaching hours and total credits</i>		<b>WEEKLY TEACHING HOURS</b>	<b>CREDIT UNITS (ECTS)</b>
<b>Lectures</b>		3	6
<b>Laboratory / Application Exercises</b>		3	
<b>COURSE TYPE</b> <i>Background, General Knowledge, Scientific Area, Development Skills</i>	Scientific Area/ Special Background/ Skills Development		
<b>PREREQUISITE COURSES:</b>	NO		
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	GREEK		
<b>THE COURSE IS OFFERED TO ERASMUS STUDENTS</b>	NO		
<b>COURSE WEBSITE (URL)</b>			

#### LEARNING OUTCOMES

##### Learning Outcomes

The purpose of the course is to make students proficient in statistical data analysis using a computer and specialized software. Also, the necessary knowledge for the use of statistical packages on a PC will be given.

The course aims to enable students to:

1. Develop critical thinking for statistical problem analysis.
2. Know how to handle software packages specialized in statistical analysis (eg SPSS, Maple, etc.).
3. Organize a statistical data collection program.
4. Analyze, interpret, present and describe statistical data.
5. Draw statistical conclusions and make predictions from the study and analysis of the data.

Upon completion of the course, students will:

1. Know the introductory concepts of statistics and the processing of statistical data.
2. Can apply statistical hypotheses tests and construct confidence intervals of their own choosing to draw

conclusions from experimental or sample data.

3. Have knowledge of the conditions required for the application of statistical methods.
4. Understand and correctly interpret statistical significance.
5. Can judge and evaluate claims and conclusions based on experimental or sample data.
6. Can use appropriate software (statistical packages) for the description and statistical analysis and processing of experimental or sample data.
7. Have knowledge of ethical and moral issues related to the collection and use of data and the publication of conclusions drawn from them.

### General Skills

*At the end of the course, the student will acquire the following general skills:*

- *Theoretical thinking and ability to transform theory into practice*
- *Search, analysis and synthesis of data and information, using the necessary technologies*
- *Decision making*
- *Autonomous work*
- *Teamwork*
- *Promotion of free, creative and inductive thinking*
- *Development of lateral and divergent thinking*

### COURSE CONTENT

1st Week: Principles of statistical analysis, recognition, recording, study and utilization of data.  
 Week 2: Significance Levels, T-Test, Normality Test, ANOVA, etc.  
 Week 3: Sample Survey Models, Sampling Types, Questionnaire Design.  
 4th Week: Microsoft Excel statistical package.  
 5th Week: Microsoft Excel statistical package.  
 Week 6: IBM SPSS statistical package.  
 Week 7: IBM SPSS statistical package.  
 Week 8: Maplesoft Maple Statistical Package.  
 Week 9: Maplesoft Maple Statistical Package.  
 Week 10: JMP Pro Stat Pack.  
 Week 11: JMP Pro Stat Pack.  
 Week 12: Other stat packages.  
 13th Week: Presentation of statistical analysis results.

### TEACHING and LEARNING METHODS - EVALUATION

<b>TEACHING METHOD</b>	Face to face. In the laboratory, after a short presentation by the teacher of the methodology of each subject, the students perform the exercise. In addition, students practice using software.	
<b>USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES</b>	Course deliveries are supported by electronic slide shows and other audio-visual material.	
<b>TEACHING ORGANISATION</b>	<b>Activity</b>	<b>Semester's Workload</b>
	Lectures	39
	Laboratory Exercises	39
	Study	72
	<b>Total for Course</b>	<b>150</b>

<b>STUDENT EVALUATION</b>	The evaluation language is Greek. The final grade of the course is formed by 50% from the theoretical part and 50% from the laboratory courses. The theoretical part exams may include multiple choice questions. The exams of the laboratory part include exercises (50%) and assignments (50%).
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#### **RECOMMENDED BIBLIOGRAPHY**

<ul style="list-style-type: none"><li>• <i>Statistikí Análysi me to R. Michael J. Crawley, Ekdótis: Broken Hill Publishers Ltd.</i></li><li>• <i>Statistikí Epexergasía kai Análysi Dedoménon me chrísi tou Microsoft Excel. Fráncos Chrístos. Ekdótis: STAMOULIS ATH.</i></li><li>• <i>Methodología Érevnas kai Eisagogí sti Statistikí Análysi Dedoménon me to IBM SPSS STATISTICS. Miltiádis Chalikiás, Alexándra Manolésou, Panagióta Lálou. SYNDESMOS ELLINIKON AKADIMAÏKON VIVLIOTHIKON. <a href="http://www.kallipos.gr">www.kallipos.gr</a></i></li></ul>
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