

Course Outline: “1103 - Biostatistics”

1. General information

FACULTY/SCHOOL	Physical Education, Sport Science & Nutrition		
DEPARTMENT	Nutrition & Dietetics		
LEVEL OF STUDY	Undergraduate		
COURSE UNIT CODE	1103	SEMESTER	1st
COURSE TITLE	Biostatistics		
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 TEACHING HOURS	CREDITS
Lectures		3	
Laboratory Exercises		2	
<i>Add rows if necessary. The organization of teaching and the teaching methods used are described in detail under section 4</i>		5	5
COURSE TYPE <i>Background knowledge, Scientific expertise, General Knowledge, Skills Development</i>	Background knowledge, Scientific Expertise, General Knowledge, Skills Development		
PREREQUISITE COURSES	NO		
LANGUAGE OF INSTRUCTION	Greek, English		
LANGUAGE OF EXAMINATION/ASSESSMENT	Greek, English		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	NO		
COURSE WEBSITE (URL)	https://eclass.uth.gr/courses/DND_U_154/		

2. LEARNING OUTCOMES

<p>Learning Outcomes</p> <p><i>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:</i></p> <p>APPENDIX A</p> <ul style="list-style-type: none"> <i>Description of the level of learning outcomes for each level of study, in accordance with the European Higher Education Qualifications' Framework.</i> <i>Descriptive indicators for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and</i> <p>APPENDIX B</p> <ul style="list-style-type: none"> <i>Guidelines for writing Learning Outcomes</i> 		
<p>The aim of the course is to familiarize students with the basic data analysis using the Statistical Package for the Social Science (SPSS). More specifically, students upon completion of the course will be able to:</p> <ul style="list-style-type: none"> • Understand and select the different statistical analyzes in relation to the research question • To perform basic statistical analyzes through the statistical program SPSS • Evaluate the statistical findings in relation to the research question 		
<p>General Competences</p> <p><i>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?</i></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"><i>Search for, analysis and synthesis of data and information by the use of appropriate technologies, adapting to new situations Decision-making Individual/Independent work Group/Team work Working in an international environment Working in an interdisciplinary environment Introduction of innovative research</i></td> <td style="width: 50%; border: none;"><i>Project planning and management Respect for diversity and multiculturalism Environmental awareness Social, professional, and ethical responsibility and sensitivity to gender issues Critical thinking Development of free, creative, and inductive thinking (Other.....citizenship, spiritual freedom, social awareness, altruism etc.)</i></td> </tr> </table>	<i>Search for, analysis and synthesis of data and information by the use of appropriate technologies, adapting to new situations Decision-making Individual/Independent work Group/Team work Working in an international environment Working in an interdisciplinary environment Introduction of innovative research</i>	<i>Project planning and management Respect for diversity and multiculturalism Environmental awareness Social, professional, and ethical responsibility and sensitivity to gender issues Critical thinking Development of free, creative, and inductive thinking (Other.....citizenship, spiritual freedom, social awareness, altruism etc.)</i>
<i>Search for, analysis and synthesis of data and information by the use of appropriate technologies, adapting to new situations Decision-making Individual/Independent work Group/Team work Working in an international environment Working in an interdisciplinary environment Introduction of innovative research</i>	<i>Project planning and management Respect for diversity and multiculturalism Environmental awareness Social, professional, and ethical responsibility and sensitivity to gender issues Critical thinking Development of free, creative, and inductive thinking (Other.....citizenship, spiritual freedom, social awareness, altruism etc.)</i>	
<p>Upon successful completion of the course, students would be able to:</p> <ul style="list-style-type: none"> • Manage their knowledge through autonomous or group work and final exams. • Practice their critical ability and self-criticism. • Understand issues in an international environment. 		

- Promote creative and inferential thinking.
- Cooperate and create interpersonal relations.
- Use verbal and non-verbal communication skills effectively in a wide range of activities.
- Familiarize themselves with the use of IT.
- Apply their scientific knowledge in practice.
- Be able to apply the appropriate statistical analyses in the field of biological sciences.

3. COURSE CONTENT

<p>1. Descriptive Statistics</p> <p>1.1. Position and Dispersion measures</p> <p>1.2. Prevalence, Incidence, Mortality</p> <p>2. Clinical Biostatistics</p> <p>2.1. Sensitivity, Specificity, ROC curve, Positive Predictive Value, Negative Predictive Value</p> <p>3. Hypothesis testing</p> <p>3.1. Chi square- Odds Ratio & Relative risk</p> <p>3.2. T- test- Independent & Dependent samples</p> <p>3.3. One- way Analysis of Variance</p> <p>3.4. Pearson correlation coefficient</p> <p>4. Regression analysis</p> <p>4.1. Linear regression</p> <p>4.2. Logistic regression</p> <p>4.3. Cox proportional hazards model</p> <p>5. Evaluation of scientific articles and abstracts</p> <p>6. Revision</p>
--

4. TEACHING METHODS - ASSESSMENT

<p>MODES OF DELIVERY</p> <p><i>Face-to-face, in-class lecturing, distance teaching and distance learning etc..</i></p>	Face-to-face, in-class lecturing, distance teaching and learning	
<p>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY</p> <p><i>Use of ICT in teaching, Laboratory Education, Communication with students</i></p>	Use of ICT in teaching (e.g. PowerPoint, Videos etc.), communication with students via e-mails and general support of the educational process via the platform e-class.	
<p>COURSE DESIGN</p> <p><i>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.</i></p>	<p>Activity/Method</p>	<p>Semester workload</p>
	Lectures	40
	Personal Assignment (Microsoft Word). Students should be able to recognize, analyse and write the results in a number of research hypotheses.	25
	Simulation Assignment	20
	Individual study	40
	Total	125
<p>STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS</p> <p><i>Detailed description of the evaluation procedures:</i></p> <p><i>Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice tests, short- answer questions, open-ended questions, problem solving, written work,</i></p>	<p>The final evaluation of the students will be done with the following two ways:</p> <ul style="list-style-type: none"> • Delivery of a mandatory personal assignment in the form of a report, which includes simulated research questions that must be solved with the help of the SPSS statistical package that will be taught during the semester. • Final written exam, where one part of the subjects consists of questions on the theory and the 	

<p><i>essay/report, oral exam, presentation, laboratory work, other.....etc.</i> <i>Specifically defined evaluation criteria are stated, as well as if and where they are accessible by the students.</i></p>	<p>interpretation of published results, while the other part of questions on the results (output) of an analysis from the statistical package SPSS.</p> <p>The final grade is calculated in the following way:</p> <p>Final grade = 0,2*(Personal assignment) + 0,8*(Final written exam)</p> <p>In order to take into account the assignment's grade, the students should pass the final exam (Grade of written exam >= 5).</p>
--	--

5. SUGGESTED BIBLIOGRAPHY

-Suggested bibliography:

1. Δημοσθένης Β. Παναγιωτάκος (2011). ΜΕΘΟΔΟΛΟΓΙΑ ΤΗΣ ΕΡΕΥΝΑΣ & ΤΗΣ ΑΝΑΛΥΣΗΣ ΔΕΔΟΜΕΝΩΝ ΓΙΑ ΤΙΣ ΕΠΙΣΤΗΜΕΣ ΤΗΣ ΥΓΕΙΑΣ.
2. Μπερσίμης Σωτήριος, Μπερσίμης Φραγκίσκος, Σαχλάς Αθανάσιος (2022). Εισαγωγή στη Στατιστική και στις Πιθανότητες, 2η Έκδοση.
3. Πετρίδης Δημήτριος (2021). ΕΦΑΡΜΟΣΜΕΝΗ ΣΤΑΤΙΣΤΙΚΗ ΣΤΗΝ ΕΠΙΣΤΗΜΗ ΤΡΟΦΙΜΩΝ ΚΑΙ ΔΙΑΤΡΟΦΗΣ.