**CONTOUR COURSE**

1. **GENERALLY**

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| **LEISURE** | College of Applied Economic and Social Sciences |
| **DEPARTMENT** | Regional and Economic Development |
| **LEVEL OF STUDIES** | Undergraduate |
| **CODE****COURSE** | AUA6315 | **semester OF STUDIES** | 3rd  |
| **TITLE COURSE** | Statistics III |
| **INDEPENDENT TEACHING ACTIVITIES** *where credit is awarded for discrete parts of the course e.g. lectures, laboratory exercises, etc. If credit is awarded for the whole course, indicate the weekly teaching hours and the total number of credits* | **WEEKLY HOURS****TEACHING** | **ECTS** |
|  | 4 | 5 |
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| *Add series if need. THE teaching organization and the teaching methods used are described analytically**in the 4.* |  |  |
| **TYPE COURSE***Background , General**Knowledge, Scientific Area, Development**Skills* | Background |
| **PREREQUISITES****LESSONS:** | - |
| **language TEACHING****and EXAMINATIONS:** | Greek |
| **THE LESSON****OFFERED TO STUDENTS ERASMUS** | No |
| **ELECTRONICS PAGE****COURSE (URL)** | The lesson I will is presented together with notes and another Supporting material in the e-class of AUA (https://oeclass.aua.gr/eclass/) |

1. **COURSE LEARNING OUTCOMES**

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| **Academically Results** |  |
| *They are described the educationally Results of course the specific knowledge, skills**and abilities appropriate level that they will acquire Students after successful completion of the course.**Consult the Appendix A** *Description of Level of Students Results for each one circle studies in accordance with the Qualifications Framework of the European Higher Education Area*
* *Descriptive Indicators Levels 6, 7 & 8 of European Frame Qualifications For Life Learning and Appendix B*
* *Succinct Guide writing Students Results*
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| With her successful monitoring of course, the students:* they know the advantages and them weaknesses of non parametric statistical controls
* they recognize them conditions application and the characteristics each control to select the most appropriate control in each case study
* become familiar with methods multivariate statistics analysis
* have the necessary training and critical thinking to recognize the appropriate methods of multivariate statistical analysis depending on the nature of the research problem
* acquire scientific review thought, to utilize the knowledge and to apply the methodological tools presented during the course to solve future problems
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| ***General skills*** |
| *Taking into account the general competences that the graduate should have acquired (as listed in the Diploma Supplement and listed below), which one(s) does the course aim at?* |
| *Search, analysis and synthesis of data and information, including the use of the necessary technologies* *Adaptation to new situations* ***Decision-making*** ***Autonomous work*** ***Group work*** *Working in an international environment* *Working in an interdisciplinary environment* *Generating new research ideas* | *Project planning and management* *Respect for diversity and multiculturalism* *Respect for the natural environment* *Demonstrating social, professional and ethical responsibility and gender sensitivity* *Exercise of criticism and self-criticism* ***Promotion of free, creative and deductive thinking*** |

1. **CONTENT COURSE**

1th – 2th Lecture: Introduction

* + Repetition basic statistics concepts
	+ THE use statistics controls in applied research
		- Zero case
		- Level importance and size sample
		- Area rejection her zero case
	+ Criteria of choice of appropriate of statistics control
	+ Advantages disadvantages non parametric controls

3th – 7th Lecture: Non parametric statistics controls

* + Controls good one adjustment
		- Control Kolmogorov- Smirnov
		- Control good one adjustment x 2
	+ Control her case equality median price
		- Formal control
		- Control Wilcoxon for one sample
		- Control Wilcoxon for two dependent samples
	+ Control her case that two independently samples they come from from him same population
		- Control Wilcoxon Sum Rank
		- Control Wilcoxon-Mann-Whitney
	+ Control her case that three the more randomly samples they come from from the same population
		- Control Kruskal- Wallis
		- Control equality population fluctuations
	+ Analysis Correlation
		- Coefficient correlation of Spearman
		- Coefficient correlation of Kendall
	+ Examples-applications

8th – 9th Lecture: Analysis Variation - Covariance

* + Analysis variation monastery direction
	+ Analysis variation double direction
	+ Analysis covariance (ANCOVA)
	+ Examples-applications with the use appropriate software Assessment with space

10th – 14th Lecture: Analysis in clusters

* + Introduction
	+ THE distance (sense and distance meters )
	+ Minutes problems
	+ Hierarchical grouping
		- The algorithm
		- Selection method
		- Example and comparison of methods
1. **TEACHING AND LEARNING METHODS – ASSESSMENT**

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| **METHOD OF DELIVERY****Face-to-face, Distance learning, etc.** | Lectures and meetings with students Deliveries take place in the form of face-to-face lectures.In order to better consolidate the teaching content, interactive teaching is carried out with questions and answers. In addition, in each lecture, the presentation of the topics will be accompanied by relevant examples and applications of statistical methodologies in matters related to business, economics and regional economy and development. |
| **USE OF TECHNOLOGY, INFORMATION AND COMMUNICATION***Use of ICT in teaching, laboratory training, communication with students* | Computer, projector and interactive whiteboard will be used in the teaching. Communication with students will be on a personal level, also using e-mail and direct telecommunication (e.g. skype). Learning process support through the AUA Open eClass platform. |
| **ORGANISATION OF TEACHING***The way and methods of teaching are described in detail.**Lectures, Seminars, Laboratory Exercise, Field Exercise, Study & Analysis of Literature, Tutorials, Practical (Placement), Clinical Exercise, Artistic Workshop, Interactive teaching, Educational visits, Study visits, Project work, Writing of work / assignments, Artistic creation, etc.**The student's study hours for each learning activity as well as the hours of unguided study are indicated so that the total workload at semester level corresponds to the ECTS standards.* |

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| ***Activity*** | ***Workload*** |
| Lectures | 52 hours |
| Study of course material (material taught) | 52 hours |
| Exercises and practice of in economic applications | 21 hours |
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| Course Total | 125 hours |

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| **STUDENT ASSESSMENT** *Description of the evaluation process**Language of Assessment, Assessment Methods, Formative or Inferential, Multiple Choice Test, Short Answer Questions, Test Development Questions, Problem Solving, Written Work, Report, Oral Examination, Oral Examination, Public Presentation, Laboratory Work, Clinical Examination of a Patient, Artistic Interpretation, Other**Explicitly identified assessment criteria are stated and if and where they are accessible to students.* | Written Final Exams and exercises during the course

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| Final exams |  |
| Mandatory Final Exam:All matter | 100% |

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1. **BIBLIOGRAPHY**

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| **Main Textbooks (all in Greek):*** **Papadopoulos, G.K. (2015). Introduction to Probability and Statistics. Gutenberg Publications. BASIC COURSE MANUAL**
* Walpole, RE, Myers, RH, Myers, SL, Ye, K (2019). Statistics and Probability. Tsakanikas Angelos (editor), published by Tziolas, 9th Edition.
* Berenson, LM, Levine, MD, Szabat, AK (2018). Fundamentals of Statistics for Business – Concepts and Applications. Broken Hill Publishers Ltd
* Aczel, A (2011). Statistical Thinking in the Business World, Broken Hill Publishers LTD, 1st edn
* Anderson, D., et al. (2013). Statistics for Business & Economics. Cengage Learning.
* Siegel, S. and Castellan, N.J. Non-parametric Statistics for the Behavioral Sciences, McGraw- Hill
* Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E.. 2010. Multivariate data analysis (7th ed.) Pearson Academic.
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