CONTOUR COURSE

1. GENERALLY

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| **FACULTY** | Applied Economic and Social Sciences | | | | |
| **DEPARTMENT** | Regional and Economic Development | | | | |
| **LEVEL OF STUDIES** | Undergraduate | | | | |
| **CODE**  **COURSE** | 6103 | **semester OF STUDIES** | | 1st | |
| **TITLE COURSE** | Statistics I | | | | |
| **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 TEACHING HOURS** | | **ECTS** |
|  | | | 4 | | 6 |
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|  | | |  | |  |
| *Add series if need. THE organization teaching and the teaching methods that they are used are described analytically*  *in the 4.* | | |  | |  |
| **TYPE COURSE**  *Background , General*  *of knowledge, Scientific*  *area, Development*  *Skills* | Background | | | | |
| **PREREQUISITES**  **LESSONS:** | - | | | | |
| **language TEACHING**  **and EXAMINATIONS:** | Greek | | | | |
| **THE LESSON OFFERED IN**  **STUDENTS ERASMUS** | No | | | | |
| **website 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. **STUDENTS RESULTS**

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| **Academically Results** | | |  |
| The educationally Results of course is:   * THE familiarity with them authorities introductory level statistics. * The students I will must to they understand and to they explain them basic authorities of statistics with simple diagrams and formulas. * Solve basic statistics problems using formulas and diagrams. | | | |
| By successfully attending the course, students:   * understand basic concepts of Statistics * they can use statistical tests on real problems * know basic distributions and become familiar with random variables. * have the necessary training and critical skills to recognize the appropriate statistical methods depending on the nature of the research problem * acquire scientific critical thinking, utilize knowledge and apply the methodological tools presented during the course to solve future problems | | | |
| ***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 MATERIAL

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| **1st – 2nd Lecture​**  **Introduction** | * Statistical approach to problems * Principles of enumeration * The concept and basic properties of probability * Basic concepts * Actions between contingencies * Definition of probability * Examples - applications   *Chapters 1 & 2 of the core coursebook* |
| **3rd – 5th Lecture​**  **Bound Probability and Contingency Independence** | * The bound probability * The multiplicative formula * The total probability theorem * Bayes theorem * Contingency independence * Examples-applications   *Chapter 2 of the core coursebook* |
| **6th – 7th Lecture :**  **Random Variables** | * The concept and meaning of random variable * Distribution function of a random variable * Discrete random variables * Continuous random variables * Independence of random variables * Examples-applications   *Chapters 3 & 4 of the core coursebook* |
| **8th – 9th Lecture :**  **Discrete Distributions** | * Basic discrete distributions * Bernoulli distribution and Binomial distribution * Multinomial distribution * Poisson distribution and process   *Chapter 5 of the core coursebook* |
| **10th – 11th Lecture :**  **Continuous distributions / Central Limit Theorem** | * Normal distribution * The standard normal distribution * Probability calculation * The Central Limit Theorem * Examples-applications   *Chapters 6 & 8 of the core coursebook* |
| **12th – 13th Lecture :**  **x 2 , t and F distributions** | * Allocation x 2 * t distribution (Student) * Distribution F * Examples-applications   *Chapters 6 & 8 of the core coursebook* |

1. **TEACHING AND LEARNING METHODS - ASSESSMENT**

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| **METHOD of TEACHING**  *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 TECHNOLOGIES INFORMATION AND COMMUNICATION**  *Use of ICT in Teaching, Laboratory training, in Contact 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. |

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| **ORGANIZATION OFTEACHING**  *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.* |  | ***Activity*** | ***Workload Semester*** |  |
| Lectures | 52 hours |  |
| Study of course material | 52 hours |  |
| Exercises, practice, case studies and homework | 21 hours |  |
| Examinations |  |  |
| Total course | 150 |  |
| **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   |  |  | | --- | --- | | Final Exams |  | | Mandatory final exams:  (All subjects) | 100% | | | | |

1. RECOMMENDED-BIBLIOGRAPHY

**Main textbooks (in Greek)**

* **Walpole, RE, Myers, RH, Myers, SL, Ye, K. (2019). Statistics and Probability. Tsakanikas Angelos (editor), published by Tziolas, 9th Edition.**

**BASIC COURSE MANUAL**

* Papadopoulos, G.K. (2015). Introduction to Probability and Statistics. Gutenberg Publications.
* 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 , Edition: 1 n
* Anderson, D., et al. (2013). Statistics for Business & Economics. Cengage Learning.