**COURSE OUTLINE**

1. **GENERAL**

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| **SCHOOL** | BUSINESS AND ECONOMICS |
| **DEPARTMENT** | BUSINESS ADMINISTRATION |
| **LEVEL OF STUDY**  | POSTGRADUATE/ MANAGEMENT OF EDUCATIONAL ORGANISATIONS |
| **Course Unit Code** |  | **SEMESTER OF STUDY** | A |
| **Course Title** | Quantitative and Qualitative Research Methods  |
| **Coursework Breakdown** | **TEACHING WEEKLY HOURS** | **ECTS Credits** |
| Lectures, Tutorials, Projects, Labs | 5 | 7 |
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| **Course Unit Type** | SCIENTIFIC AREA COURSE |
| **Prerequisites :** |  |
| **Language of Instruction/Exams:** | GREEK  |
| **COURSE DELIVERED TO ERASMUS STUDENTS** | YES |
| **Module web page (URL)** | http://moodle.teipir.gr/course/view.php?id=444 |

1. **Learning Outcomes**

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| **Learning Outcomes** |
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| The aim of the course is to introduce students to the basic concepts of statistical inference and to familiarize students with the usage of statistical packages . After completing the course, students will be able to:* Describe data sets by using Graphical and numerical techniques
* Understand the basic concepts of Estimation with applications primarily in the confidence intervals.
* Apply statistical tests of mean values and rates for one and two samples and interpret the results
* Apply the statistical test chi square and interpret the results
* Develop basic concepts of quality control charts
* Select and apply the appropriate methodological approach in Forecasting Data sets
* Analyze the results and propose a solution or solutions (decisions) for data analysis problems
* Apply the data analysis techniques analysis and ponder over hypothetical “what..if” questions to evaluate alternative
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| **General Skills** |
| - Search, analysis and synthesis of data with the use of new technologies- Teamwork- Decision-making - Planning and management of projects |

1. **Course Contents**

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| Definition of Probability through Laplace.Descriptive Statistics with emphasis on understanding the charts but also on the interpretation of the descriptive measures.Correlation and linear regression between two variables. The study goodness fit of the linear regression model through the study of the residuals.Estimability-Confidence IntervalsStatistical tests of mean values Statistical tests of percentagesChi square testForecastingQuality control in order to check on industrial production before it reaches the consumer |

1. **Teaching Methods - Assessment**

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| **Mode of DeliverY** | In-Class |
| **USE OF INFORMATION AND COMMUNICATION TECHNOLOGY** | Support of the learning process through the e-class platform. Use the following Software SystemsMS EXCEL SPSS |
| **TEACHING METHODS** |

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| ***Method description*** | ***Semester Workload*** |
| Lectures | 39 |
| Class Work | 13 |
| Preparation Group Projects | 50 |
| Preparation of Individual Project | 60 |
| Workshops | 23 |
| ***TOTAL*** | **185** |

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| **ASSESSMENT METHODS** | **Ι. Final Examination** (50%) (Summative Evaluation) includes:- Multiple choice questions or true/false questions- Short answer questions Evaluation Objective: To understand the fundamentals of the course.Evaluation Criteria: Comprehensiveness, accuracy, and critical evaluation.**ΙI. Multiple Choice Test** (10%) (Formative Evaluation)Concerns issues covered by lectures. Evaluation Objective: Examination of students' progress in relation to learning outcomes, feedback and fine tuning of the course lectures.Evaluation Criteria: Comprehensiveness, accuracy, and critical evaluation.**ΙΙΙ. Laboratory Exercise** (40%)(Summative Evaluation): Concerns issues covered by laboratory lessons. Evaluation Objective: Examination of students' progress in relation to learning outcomes, feedback and fine tuning of the laboratory lessons.Evaluation Criteria: Comprehensiveness, accuracy, and critical evaluation.Evaluation criteria are explicitly referred on the site of the course for each learning activity. |

1. **Resources**

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| *-**Recommended Books and Journal Article Resources:** Bickel P.J., Doksum K. A., Mathematical Statistics, Volume 1, Basic Ideas and Selected Topics, 2rd ed. Prentice Hall, 2001
* Casella G., Berger R. L., Statistical Inference, 2nd ed., Duxbury Press, 2001.
* Hogg R. V., Craig A T., McKean J W., An Introduction to Mathematical Statistics, 6th ed., Prentice Hall, 2004
* Landow, S. and Everitt, B. A Handbook of Statistical Analyses Using SPSS, Chapman and Hall/CRC Press Company, New York, Washington 2004
* Montgomery D C., Peck E A., Vining G. G, Introduction to Linear Regression Analysis, 3rd ed., Wiley-Interscience, 2001
* [Mood](http://www.google.com/url?q=http%3A%2F%2Fwww.amazon.com%2Fexec%2Fobidos%2Fsearch-handle-url%2Findex%3Dbooks%26field-author-exact%3DAlexander%2520McFarlane%2520Mood%26rank%3D-relevance%252C%252Bavailability%252C-daterank%2F102-8076457-8366515&sa=D&sntz=1&usg=AFrqEzdlEQoOf0_4KBmmzbxL_T7XIEeooA) A. M.,  [Graybill](http://www.google.com/url?q=http%3A%2F%2Fwww.amazon.com%2Fexec%2Fobidos%2Fsearch-handle-url%2Findex%3Dbooks%26field-author-exact%3DFranklin%2520A.%2520Graybill%26rank%3D-relevance%252C%252Bavailability%252C-daterank%2F102-8076457-8366515&sa=D&sntz=1&usg=AFrqEzc5uqjeHrNswcUXXDSQzA7YJxVdqQ) F. A.,  [Boes](http://www.google.com/url?q=http%3A%2F%2Fwww.amazon.com%2Fexec%2Fobidos%2Fsearch-handle-url%2Findex%3Dbooks%26field-author-exact%3DDuane%2520C.%2520Boes%26rank%3D-relevance%252C%252Bavailability%252C-daterank%2F102-8076457-8366515&sa=D&sntz=1&usg=AFrqEzfYm_WLcT2MuYrI5ty8oYVBLc6W7w) D. C.  Introduction to the Theory of Statistics. McGraw-Hill Series in Probability and Statistics. McGraw-Hill 2002

**JOURNALS*** Annals of Statistics
* Statistics and Probability Letters
* Journal of statistical planning and inference
* Journal of statistics and probabilities
* Journal of business statistics and economics
* Journal of business and economic statistics
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