



## Course Syllabus

<b>Course Code</b>	<b>Course Title</b>	<b>ECTS Credits</b>
MBAN-530	Foundations in Statistics and Research	0
<b>Prerequisites</b>	<b>Department</b>	<b>Semester</b>
None	School of Business	Fall, Spring
<b>Type of Course</b>	<b>Field</b>	<b>Language of Instruction</b>
Foundation	Statistics	English
<b>Level of Course</b>	<b>Lecturer(s)</b>	<b>Year of Study</b>
2 <sup>nd</sup> Cycle	Prof. Haritini Tsangari	1st
<b>Mode of Delivery</b>	<b>Work Placement</b>	<b>Corequisites</b>
Face-to-Face	N/A	None

### Course Objectives:

The main objectives of the course are to:

- Introduce students to the basic principles of Statistics
- Provide the foundations to quantitative methods for business.
- Prepare students by giving them the necessary tools needed for the core course in quantitative methods, MBAN-603, Decision Making methods and tools
- Make students appreciate the importance of statistical methods in business
- Make students able to interpret statistical output.

### Learning Outcomes:

After completion of the course students are expected to be able to:

1. **Use the basic concepts of graphical analysis** (students should be able to create and explain graphs and tables that are appropriate for different types of data).
2. **Compute basic descriptive statistics** (students should be able to explain the concept of statistical measures and compute measures of central tendency and variation from data).
3. **Utilize the basic concepts of probability theory** (students should compute classical and empirical probabilities).
4. **Handle discrete probability distributions** (students should explain what a random variable is, calculate expected value and variance of a random variable and compute

probabilities for various discrete distributions).

**5. Use the normal random variable to compute probabilities** (students should use the standard normal variable and transform any normal variable into standard in order to use for real-life problems).

**6. Develop the ability to summarize and present data in a professional way** (students should be able to look beyond the numbers and interpret the numerical results according to the business problem they are dealing with).

### Course Content:

- 1. Introduction to Statistics and Graphical Data Analysis:** data collection methods, questionnaire design, types of data. Graphical Data Analysis for categorical and numerical data: creation and interpretation of graphs and tables. Graphical data analysis for two numerical variables: cross tabulations and scatter diagrams.
- 2. Measures:** measures of central tendency or location, measures of Variation, measures of the association between two variables.
- 3. Probability Theory and Discrete Probability Distributions:** Classical and Empirical Probability, basic relations of probabilities, mutually exclusive and independent events. Discrete Probability Distributions: random variables, distribution requirements, expected value, variance.
- 4. Continuous Distributions: Normal and Standard Normal:** the normal and standard normal random variable, computation of probabilities for real life data with the use of the z-score obtained from the transformation of a normal random variable.

### Learning Activities and Teaching Methods:

1. Lectures
2. Assignments
3. Handouts
4. Discussion on exercises and real-life examples

### Assessment Methods:

Final Exam

**Required Textbooks / Readings:**

<b>Title</b>	<b>Author(s)</b>	<b>Publisher</b>	<b>Year</b>	<b>ISBN</b>
Statistics for Business and Economics	Newbold, P., Carlson, W.L. and Thorne, B.	Pearson Education	2013	978-0-273- 76706-0

**Recommended Textbooks / Readings:**

<b>Title</b>	<b>Author(s)</b>	<b>Publisher</b>	<b>Year</b>	<b>ISBN</b>
Basic Statistics for Social Research	Hanneman, R.A., Kposowa, A.J. and Riddle M.D.		Basic Statistics for Social Research	Hanneman, R.A., Kposowa, A.J. and Riddle M.D.