



Course Code MIS 270	Course Title Statistical Applications in Business	Credits (ECTS) 6
Department MIS	Semester Fall	Prerequisites MATH-220
Type of Course Core	Field Statistics	Language of Instruction English
Level of Course 1 st Cycle	Year of Study 3 rd	Lecturer Dr Haritini Tsangari
Mode of Delivery Face-to-face	Work Placement N/A	Office None

Objectives of the Course:

The main objectives of the course are to:

- Enable students to enhance their skills in data analysis
- Familiarize students with statistical tests specially designed for applications in business problems.
- Enable students to solve common business problems using various statistical methods.
- Combine both a theoretical problem solving component and an equivalent component of structured supervised laboratory experience.
- Familiarize students with statistical software packages or software packages with statistics macros, such as SPSS or Excel.

Learning Outcomes:

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

- 1. Use statistical software packages** (students should be able to use software packages with statistics macros, such as SPSS or Excel.)
- 2. Discuss the basic principles of modeling** (students should be able to understand and perform simple and multiple regression, with the use of real data)
- 3. Explain analysis of variance** (students should be able to perform hypothesis testing for more than two means, with the use of real data).
- 4. Apply statistical methods used for process control and quality management** (students will examine real data and case studies).
- 5. Apply decision theory** (students should be able to apply theory in practice, with real data and case studies)
- 6. Use artificial neural networks** (students should be able to understand the

basic principles behind neural networks and examine various cases where they can be applied)

Course Contents:

1. **Introduction to SPSS:** data recording and variable creation
2. **Data screening and transformation**
3. **Descriptive statistics features of SPSS:** calculation of measures of central tendency and variation, creation of graphs and tables.
4. **Regression analysis:** Linear and Multiple Regression.
5. **Analysis of Variance:** Comparison of more than two population means.
6. **Statistical process control and quality management:** methods and applications
7. **Decision theory:** methods and applications
8. **Applications of artificial neural networks:** the architecture and function of artificial neural networks and applications with real data.

Teaching Methods:

Lectures, supervised lab exercises, projection of relevant material, practical exercises based on personal or team work, assignments and individual guidance when required.

Assessment Methods:

Homework/ Computer assignments, Midterm Exam, Final Exam

Required Textbooks:

Authors	Title	Publisher	Year	ISBN
Lind, D.A., Marchal, W.G., and Wathen, S.A.	Statistical Techniques in Business and Economics	McGraw- Hill Irwin.	2008	978-0-07- 303022-7
Sheridan J. Coakes	SPSS Analysis without Anguish	Wiley Higher Education	2005	0-47-080736-9

Recommended Textbooks/Reading:

Case studies for data analysis will be posted on Students' Intranet.