



Course Code ENMA-525	Course Title Statistical Methods in Engineering	ECTS Credits 7.5
Prerequisites None	Department Computer Science	Semester Fall, Spring, Summer
Type of Course Core	Field Engineering Management	Language of Instruction English
Level of Course 2 nd Cycle	Lecturer(s) Dr. Stavros Pouloukas	Year of Study 1 st
Mode of Delivery Face to Face	Work Placement N/A	Co-requisites None

Objectives of the Course:

The main objectives of the course are to:

- Familiarize students with the fundamental concepts of probability and statistics.
- Develop an understanding of the role of statistics with emphasis on engineering applications.
- Provide an understanding of the processes by which real-life statistical engineering problems are analysed.
- Expose students to real-life application examples/problems and provide solutions using statistical methods and probability theory.
- Acquaint students with computer-based statistical analysis.

Learning Outcomes:

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

1. Explain the fundamental rules and concepts of statistical methods and probability theory as applied to engineering.
2. Formulate statistical problems in engineering applications and provide solutions using statistical techniques and computer software.
3. Develop valid designs and set up statistical unbiased experiments.
4. Analyse and evaluate statistical data obtained from computer software.
5. Employ techniques, skills and modern engineering tools required to solve statistical engineering problems.

Course Contents:

1. Introduction to statistics and data analysis.
2. Probability theory.
3. Random variables and probability distributions.
4. Mathematical Expectation.

5. One- and two-sample estimation.
6. Hypothesis Testing.
7. Linear Correlation and Regression

Learning Activities and Teaching Methods:

This encompasses lectures, examples and discussion

Assessment Methods:

Homework, Projects, Mid-term Exam, Final Exam

Required Textbooks / Reading:

Title	Author(s)	Publisher	Year	ISBN
Probability and Statistics for Engineering and the Sciences	Walpole R., Meyers S., Meyers K., Ye K.	Prentice Hall	2012	9780321629111

Recommended Textbooks / Reading:

Title	Author(s)	Publisher	Year	ISBN
Probability and Statistics for Engineers	Jay L. Devore	Brooks/ Cole	2012	9780538733527