Titolo del corso:

Statistics for Engineers (edition 2020)

Docenti:

Prof. Luigi Salmaso, Prof. Rosa Arboretti, Prof. Livio Corain
Departments: DTG, ICEA, Università degli Studi di Padova

Programma:

Topics:
The course will focus on the discussion of the main statistical tools which can be applied to problems in the field of engineering. The aim is to provide to PhD students the theoretical knowledge and the practical means to carry out quantitative analysis on data of different nature including data from their PhD project. Statistical softwares (Minitab, Knime) will be extensively used to apply the techniques to practical case studies.
The main topics of the course are:
- First Module:
    - Descriptive statistics
    - 1 sample hypothesis tests
    - 2 sample hypothesis tests
    - Linear regression & Multiple Regression
- Second Module:
    - Analysis of variance (ANOVA)
    - Design of experiments: 2 level factorial designs
    - Design of experiments: general factorial and response surface designs
    - Introduction to Big Data Analytics

Language of the course: English
Timetable:
Duration of the course: First Module (14 hours); Second Module (18 hours)
Schedule February, 2020: First Module (10 and 12 February); Second Module (14, 18 and 20 February)
Location: Aule informatiche Polo Meccanico.
Examination:
Students can choose to attend one or both modules.
Final evaluation will be based on a personal project (home assignment) in which the student is asked to apply the techniques learned to their individual PhD project or other data of their choice.

Testi di riferimento:

Montgomery, D. C. (2001). Design and analysis of experiments. New York: John Wiley.
James G., Witten D., Hastie T., Tibshirani R. (2017). An Introduction to Statistical Learning. New York: Springer.