**Study programme(s):** Computer Science

**Level:** master

**Course title:** Continuous and Multivariate Probability and Statistics

**Lecturer:** Ivana Štajner-Papuga

**Status:** elective

**ECTS:** 6

**Requirements:** Discrete Probability and Statistics

**Learning objectives**

Acquiring basic knowledge and skills in joint probability distribution, correlation coefficient, conditional probability distribution, bivariate normal distribution and multivariate distributions, as well as in some further statistical methods.

**Learning outcomes**

Successfull students will be able to recognize the type of a problem and to apply techniques studied during the course. They will be able to use the proper softwer support.

**Syllabus**

- Continuous Distributions
- Bivariate Distributions (joint probability distribution, correlation coefficient, conditional probability distribution, bivariate normal distribution)
- Multivariate Distributions
- Analysis of Variance
- Nonparametric Methods
- Regression Analysis
- Software support (*Statistica and R*)

**Literature**

1. H. P. Hsu, Theory and Problems of Probability, Random Variables, and Random Processes, Schaum's Outline of Calaculus, McGraw-Hill BookCompany –selected chapters
2. D. Salvatore, D. Reagle, Theory and Problems of Statistics and Econometrics, Schaum's Outline of Calaculus, McGraw-Hill BookCompany –selected chapters

| **Weekly teaching load** | | | | |
|---|---|---|---|---|
| Lectures: 2 | Exercises: 2 | Practical Exercises: 0 | Student research: 0 | Other: **0** |

**Teaching methodology**

- classical teaching methods;
- demonstrations of softwer;
- exercises.

**Grading method (maximal number of points 100)**

| **Pre-exam obligations** | **points** | **Final exam** | **points** |
|---|---|---|---|
| *Written test* | **40** | *Oral exam* | *40* |
| *Practical test* | **20** | | |