Study programmes: Bachelor studies – Informatics	
Course name: M165 – Introduction to sampling theory	
Lecturers: Jelena Jocković	
Status: Optional	
ECTS: 5	
Attendance prerequisites: M111, M161, M162	
Course aims: Acquiring general and specific knowledge from the sampling theory.	
Course outcome: After finishing course, the student has basic knowledge on how to form and use a random sample.	

Course content:

Population, variable, variable distribution, sample. Simple random sample with and without replacement from finite and infinite population. Estimates of mean and variance. Confidence intervals, estimates of total and proportion. Required sample size for specified accuracy. Stratified sample. Stratums and sample. Estimates of mean and variance. Estimates of total and proportion. Uniform, proportional and optimal allocation of sample size by strata. Optimal allocation for fixed costs. Determining the sizes of the stratums and selection of the stratums. Cluster and systematic sample. Estimates of mean and total and variances of those estimates. Clusters of equal sizes. Two-phase sample. Estimates of mean and variance. Optimal sample size. Proportional allocation of the sample by clusters. Three-phase and multi-phase sample. Comparison of cluster, stratified and simple random sample. Design of samples and surveys.

Literature:

1. Ljiljana Petrović: Teorija uzoraka i planiranje eksperimenata, 2003.
2. Ljiljana Petrović: Zbirka rešenih zadataka iz teorije uzoraka i planiranja eksperimenata, 2005.
3. William G. Cochran: Sampling Techniques, 1977.

Number of hours: **4**	Lectures: **2**	Tutorials: **2**	Laboratory: **-**	Research: **-**

Teaching and learning methods: Frontal / Lectures / Tutorials

Assessment (maximal 100 points)				
Course assignments	**points**	**Final exam**	**points**	
Lectures	10	Written exam	-	
Exercises / Tutorials	-	Oral exam	-	
Colloquia	10	Written-oral exam	70	
Essay / Project	10			