Subject code: TG-105-1	**Subject name:** Quantitative Methods in Geography		
Study cycle: I	**Year:** I	**Semester:** II	**ECTS credits:** 3
Status: Optional		**Contact hours:** 45 Lectures: 30 Exercises: 15	
Assigned professors and assistants:			
Prerequisits:	/		
Subject objectives:	Training students for independent work with basic quantitative models in the research of geographical processes.		
Teaching units:	1. Quantitative methods - concept, definitions, significance and change in geography. Preparation and editing of geodata. 2. Geoinformatics processing of geostatistical data. Basic software for analysis and processing of geostatistical data. 3. Geostatistical series - concept and structure. Medium values of geostatistical series - concept, definitions and types middle. 4. Dispersion of geostatistical data - definition, structure and measures of dispersion. 5. Asymmetry of geostatistical data - concept, definitions and types of asymmetry. 6. Concentration of geostatistical data - concept, definitions and types of concentration. 7. First test. 8. Probability of geostatistical data - concept, definitions and probability distribution models. 9. Method of samples of geostatistical data - concept and structure. Sampling-distribution. 10. Parameter estimation – concept and structure. Hypothesis testing about a parameter - definitions and types of hypothesis testing. 11. Selected non-parametric tests - concept, structure and basic types of non-parametric tests. 12. Regression analysis of geostatistical data - concept, structure and basic models of regression analysis. 13. Analysis of time geostatistical series - concept, graphic		

	representation, indicators of dynamics, individual and group indices. 14. Time geostatistical series - concept and types of selected models of geostatistical series. 15. Analysis of seminar papers.
Learning outcomes:	**Knowledge:** • a student lists basic geostatistical methods in geography and gives examples of their use • a student actively participates in the research of basic software for entering and processing geostatistical data **Skills:** • a student groups geostatistical data and determines the importance of geostatistical sequences • a student comments on the dispersion of geostatistical data, their structure and measures • a student comments on the asymmetry and concentration of geostatistical data, their structure and measures • a student estimates parameters and tests hypotheses about the parameter • a student presents selected non-parametric tests and their basic types • a student performs basic models of regression analysis of geostatistical data • a student graphically presents time geostatistical series • a student presents selected types of models of geostatistical series **Competencies:** • a student independently applies certain methods of mathematical statistics in the analysis and modeling of geostatistical data; • a student independently creates quantitative models in the field of geographical research; • a student independently applies basic quantitative geoinformatics models in the research of physical and social-geographical processes.
Teaching methods:	Multimedia presentation and discussion (lectures); research independent work of students and joint analysis (exercises).

Knowledge testing methods with grading structure[1]:

	Points
Attendance	5
Participation on lectures	5
Tests	40
Seminar paper	10
Final exam	40
TOTAL	100

Assessment:

Grade	*ECTS grade*	*Points scale*
10	(A) excellent	95 - 100
9	(B) very good	85 - 94
8	(C) good	75 - 84
7	(D) satisfactory	66 - 74
6	(E) sufficient	55 - 64
5	(F, FX) insufficient	<55

Literature[2]:

Mandatory:

1. Koceić - Bilan, N. (2011): Primijenjena statistika. Prirodoslovno-matematički fakultet. Split.
2. Benšić, M., Šuvak, N. (2013): Primijenjena statistika. Sveučilište J. J. Strossmayera. Osijek

Recommended:

1. Šošić, I. (2006): Primijenjena statistika – 2. dopunjeno izdanje. Školska knjiga, Zagreb.
2. Papić, M. (2005): Primijenjena statistika u MS Excelu. Naklada ZORO. Sarajevo.

[1] The structure of points and point criteria for each subject is determined by the Council of the organizational unit before the beginning of the academic year in which the subject is taught in accordance with Article 64, paragraph 6 of the Law on Higher Education of Sarajevo Canton

[2] The Senate of the higher education institution as an institution or a council of the organizational unit of the higher education institution as a public institution determines mandatory and recommended textbooks and manuals, as well as other recommended literature on the basis of which exams are prepared by a special act which is required to be published on its website before the beginning of the academic year in accordance with Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton.