NAME OF THE COURSE	Selected Topics in Quantitative Methods					
Code		Year of study	2nd graduate			
Course teacher	assoc. prof. Assoc. prof. Jelaska Igor, PhD	Credits (ECTS)	3			
Associate teachers		Type of instruction (number of hours)	L	S	E	F
			30	0	15	
Status of the course	Elective	Percentage of application of e-learning	0%			

COURSE DESCRIPTION

Course objectives	Introduce students to advanced statistical topics and make them capable for data acquisition, data analysis, application and interpretation of selected multivariate topics.
Course enrolment requirements and entry competences required for the course	English language course
Learning outcomes expected at the level of the course (4 to 10 learning outcomes)	• Independently realize multivariate data acquisition and processing • Explain conditions for application of selected multivariate and univariate methods • Construct research hypothesis • Compare different multivariate statistical methods • Suggest multivariate analysis for appropriate research question

Course content broken down in detail by weekly class schedule (syllabus)

Lectures

1. Introduction to data acquisition (2L)	Assoc. prof. Jelaska Igor, PhD
2. Advanced data acquisition using LabView(3L)	Assoc. prof. Jelaska Igor, PhD
3. Graphical programming(3L)	Assoc. prof. Jelaska Igor, PhD
4. ANCOVA(2L)	Assoc. prof. Jelaska Igor, PhD
5. Multivariate ANCOVA(3L)	Assoc. prof. Jelaska Igor, PhD
6. Factorial ANOVA(3L)	Assoc. prof. Jelaska Igor, PhD
7. Within-within ANOVA(2L)	Assoc. prof. Jelaska Igor, PhD
8. Within-between ANOVA(2L)	Assoc. prof. Jelaska Igor, PhD
9. Between-between ANOVA(2L)	Assoc. prof. Jelaska Igor, PhD
10. Logistic regression(4L)	Assoc. prof. Jelaska Igor, PhD
11. Psychometric characteristics of measurement instruments(4L)	Assoc. prof. Jelaska Igor, PhD

Exercises

1. Introduction to data acquisition (1E)	Assoc. prof. Jelaska Igor, PhD
2. Advanced data acquisition using LabView(2E)	Assoc. prof. Jelaska Igor, PhD
3. Graphical programming(1E)	Assoc. prof. Jelaska Igor, PhD
4. ANCOVA(1E)	Assoc. prof. Jelaska Igor, PhD

	5. Multivariate ANCOVA(1E)	Assoc. prof. Jelaska Igor, PhD
	6. Factorial ANOVA(2E)	Assoc. prof. Jelaska Igor, PhD
	7. Within-within ANOVA(1E)	Assoc. prof. Jelaska Igor, PhD
	8. Within-between ANOVA(1E)	Assoc. prof. Jelaska Igor, PhD
	9. Between-between ANOVA(1E)	Assoc. prof. Jelaska Igor, PhD
	10. Logistic regression(2E)	Assoc. prof. Jelaska Igor, PhD
	11. Psychometric characteristics of measurement instruments(2E)	Assoc. prof. Jelaska Igor, PhD

Format of instruction	☒ lectures ☐ seminars and workshops ☒ exercises ☐ *on line* in entirety ☐ partial e-learning ☐ field work	☐ independent assignments ☐ multimedia ☐ laboratory ☐ work with mentor ☐ (other)
Student responsibilities	Attend lectures, written and oral exam.	

Screening student work *(name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course)*						
	Class attendance	0.5	Research		Practical training	
	Experimental work	0.5	Report		(Other)	
	Essay		Seminar essay		(Other)	
	Tests		Oral exam	1	(Other)	
	Written exam	1	Project		(Other)	

Grading and evaluating student work in class and at the final exam	Grades are from 1 to 5 : grade 1 (below 59%); grade 2 (60% -72%); grade 3 (73% - 82%); grade 4 (83% - 90%); grade 5 (91% - 100%) Class attendance: 15% Data acquisition: 20% Oral exam: 30% Written exam: 35% Total: 100%

Required literature (available in the library and via other media)	**Title**	**Number of copies in the library**	**Availability via other media**
	Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics*. Boston: Pearson/Allyn & Bacon.	1	10
	Crocker L., Algina J. (1986). Introduction to Classical and Modern Test Theory. Belmont, CA: Wadsworth		10
	Garson G. D. (2012). Hierarchical Linear Modeling: Guide and Applications. Thousand Oaks, CA: Sage Publications, Inc.		10
	Howell D. D. (1992). Statistical Methods for Psychology, 3rd Edn. Boston: PWS-Kent		10
	Cohen J., Cohen P., West S. G., Aiken L. S. (2003). Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences, 3rd Edn. Mahwah, NJ: Erlbaum		10

Optional literature (at the time of submission of study	Kerlinger F. N. (1986). Foundations of Behavioral Research, 3rd Edn. New York: Holt, Rinehart and Winston Kreft I. G. G., de Leeuw J. (1998). Introducing Multilevel Modeling. Thousand Oaks, CA: Sage Osborne J. W. (2012). Best Practices in Data Cleaning: A Complete Guide to Everything You Need

programme proposal)	to Do Before and After Collecting Your Data. Thousand Oaks, CA: Sage Schumacker R. E., Lomax R. G. (2004). A Beginner's Guide to Structural Equation Modeling. Mahwah, NJ: Erlbaum Stevens J. (2002). Applied Multivariate Statistics for the Social Sciences, 4th Edn. Mahwah, NJ: Erlbaum
Quality assurance methods that ensure the acquisition of exit competences	Final exam and activity on the exercises.
Other (as the proposer wishes to add)	Web interface (Moodle): https://moodle.kifst.hr/course/view.php?id=85