General information		
Course leader	**Leo Mršić, PhD Assistant Professor**	
Course title	**Quantitative methods and modeling**	
Study programme		
Course status	Mandatory	
Year	Year 1, semester 1	
Number of credits and mode of teaching delivery	ECTS student workload coefficient	4
	Number of hours (L+E+S)	45 (30 P + 15 V + 0 S)

COURSE DESCRIPTION

1.1. Course objectives

Enable students to independently apply quantitative analysis and modelling. Students will acquire theoretical and practical knowledge of quantitative methods, recognize certain types of problems and choose the appropriate method of analysis and modelling. It is especially important through examples and exercises to develop the skill of modelling realistic problems.

1.2. Conditions for enrolment in the course

No formal conditions.

1.3. Expected learning outcomes of the course

- **LO1 - Select and apply appropriate methods of univariate analysis and interpret the results obtained.**
- **LO2 - Analyse the interdependence of variables using appropriate graphical display methods and measures of the degree of correlation of variables.**
- **LO3 - Select and apply an appropriate regression model, interpret the obtained results and argue the quality of model adaptation to the data.**
- **LO4 - Apply important properties of discrete and continuous random variables and vectors.**
- **LO5 - Select, apply and interpret the appropriate parameter estimation method and the appropriate statistical test.**

1.4. Course content

Introduction to quantitative methods.
Descriptive statistics.
Correlation coefficients.
Linear regression.
Probability distributions.
Estimating parameters of distribution.
Confidence intervals.
Statistical hypothesis testing.

Contingency table analysis.

1.5. Teaching delivery modes:	☒ lectures ☐ seminars and workshops ☒ exercises ☐ remote learning ☐ field work	☒ independent work ☐ multimedia and network ☐ laboratory ☒ mentoring ☐ other _____

1.6. Comments	

1.7. Student obligations

STUDENT ATTENDANCE

Class attendance is mandatory in the percentage prescribed by the Studies and examination regulations.

PASSING THE EXAM

The course has defined learning outcomes. In order for a student to pass the course, he/she must achieve a minimum of 50% of the points available for each learning outcome and collect a minimum of 50.01 points out of a possible 100 points per course.

1.8. Monitoring[1] student work

Class attendance		Activity during class		Seminar paper	25%	Experimental work	
Written exam	75%	Oral exam		Essay		Research	
Project		Continuous assessment of knowledge		Student report		Practical work	
Portfolio		Homework					

1.9. Assessment and evaluation of student work during classes and the final exam

A grading system based is on a credit accumulation model combined with a defined sub-model, providing a model of the grading method and checking the satisfaction of learning outcomes used in this course.

CONCRETE REVIEW OF EVALUATION METHODS

The maximum number of points that a student can earn in a course is 100. Grades are calculated according to the following criteria table within which the distribution of passing grades in terms of the number of points is applied.

Points	**Grade**

---

[1] IMPORTANT NOTES: Next to each method of monitoring student work it is necessary to insert an adequate share of each activity in ECTS credits, so the total number of ECTS credits corresponds to the credit value of the course. You can use empty fields for additional activities.

0,00 - 50,00	(1) unsatisfactory
50,01 - 58,00	(2) sufficient
58,01 - 75,00	(3) good
75,01 - 92,00	(4) very good
92,01 - 100,00	(5) excellent

The method of accumulating points is determined in this course in accordance with the elements of scoring as follows:

Criterion	Maximum points
Written exam	75
Seminar paper	25
TOTAL	100

The way of taking the colloquiums, the learning outcomes it covers, as well as the implementation of exams and remedial exams are defined by the "Instructions for attending and taking the course".

1.10.   Required reading (at the moment of submitting the joint study programme report)

- **Ksenija Dumičić, Vlasta Bahovec, Mirjana Čižmešija, Nataša Kurnoga, Anita Čeh Časni, Saša Jakšič, Irena Palić, Petar Sorić, Berislav Žmuk: Business Statistics, Element, 2011**

1.11.   Additional reading (at the moment of submitting the joint study programme report)

- **Mastering Python for Data Science.pdf**

1.12.   Number of copies of required reading in relation to the number of students who currently attend a course

Title	Number of copies	Number of students

1.13. Methods of quality monitoring that ensure the acquisition of knowledge, skills and competencies.

Monitoring the fulfilment of the desired learning outcomes is an important element of assessment because learning outcomes are the "guarantees" that the school gives to students, but also to employers and the wider community. Learning outcomes represent the minimum threshold that each student must achieve in order to pass the course. For a passing grade, the student must satisfy all the learning outcomes with the demonstrated knowledge, which corresponds to 50% of the points achieved for each learning outcome.

The method of scoring based on learning outcomes is presented in the document "Instructions for attending and taking the course".