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DESCRIPTION OF THE COURSE

GENERAL INFORMATION		
Course Holder	**Dr.sc. Višnja Jurić**	
The name of the college	**Fundamentals of Statistics**	
Study program	**Professional Undergraduate Study - Finance and Business Law**	
Status of the College	**Mandatory**	
Year	**1st year**	
Point value and method of teaching	**ECTS coefficient of student workload**	**7**
	Number of hours (P+V)	**45+30**

DESCRIPTION OF THE COURSE

1.1. *Objectives of the course*

The aim of the course is to introduce students to the basic statistical methods and techniques of collecting, presenting, summarizing and analyzing data with an emphasis on the interpretation of the obtained results and the application of the acquired knowledge in the field of statistics in business practice.
Students acquire the knowledge and skills of statistical expression and interpretation of the obtained results using statistical terminology.

1.2. *Requirements for enrolment in the course*

There are no prerequisites for enrolling in the course

1.3. *Expected learning outcomes for the course*

1. Give definitions of basic statistical terms.
2. Calculate and interpret basic statistical indicators – centrality measures and data dispersion measures.
3. Calculate and interpret the correlation coefficient and the coefficients of the regression equation.
4. Model time series with a suitable trend model and calculate and interpret chain and base indices.
5. Apply the basic rules of combinatorics, set theory and probability.

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6. Apply theoretical models of probability distribution of discrete and continuous random variables, (Binomial distribution, Normal distribution).
1.4 Course content
Basic statistical concepts. The concept of population and sample, population parameter and statistical characteristic. Simple random sampling. Descriptive and inferential statistics. Objective, grouping and displaying statistical data. **Graphical description of the data.** Qualitative and quantitative data. Measuring scales. Graphical representations – bar graph, structural circle, Pareto diagram, time graph. frequency distribution. Histogram. Diagram of a tree-sheet. Form of distribution. Two-way table. Scattering diagram. **Numerical description of data** Basic statistical indicators. Measures of centrality and measures of variability of data in sequence. Coefficient of variation. An interquartile rank. Box plot. **Correlation and Regression Analysis** Measures of the correlation between two variables – covariance and correlation coefficient. Simple linear regression model. **Definition and types of time series** Linear trend model. Exponential trend model. Numerical analysis of time series. Base indices. Chain indices. **Combinatorics, set theory and probability.** Clusters and Cluster Operations. Definition of probability, basic rules of probability - the rule of union and complement. Conditional probability. Independent events. **Probability distribution of discrete and continuous random variables.** Discrete random variable distribution table. The mean and variance of a discrete random variable. It's a normal distribution.

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standard normal distribution. Determination of areas under the curve.		
1.5 Types of teaching (put X)	☒ lectures ☐ seminars and workshops ☒ exercises ☐ Distance education ☐ Field Teaching	☐ Independent tasks ☐ Multimedia & Network ☐ laboratory ☐ Mentoring work ☐ Other_____

1.6 Student obligations

The obligations of students are prescribed in detail by the Statute, Study Regulations, and Student Obligations Guidelines. The key obligations of students are:

***ATTENDANCE:** students are obliged to attend classes, actively follow lectures and exercises, and participate constructively in classes, and in order to acquire the right to take the exam, it is necessary to attend classes in the percentages prescribed by the Study Regulations. For each student, their presence in class is recorded through the Infoeduka digital office system. The minimum obligations of students are;*

- *Full-time students need to attend at least 70% of the total number of classes to be eligible for a digital signature.*
- *Part-time students must attend at least 50% of the total number of classes to be eligible for a digital signature.*

***PASSING EXAMS:** in order to achieve a positive grade, it is necessary to achieve at least 54 points in the subject, but also at least 50% of points for each learning outcome. The method of taking the exam is described in more detail in point 1.8 Assessment and evaluation of students' work during classes and at the final exam.*

**FINAL EXAM – a student who has not met the conditions for passing the exam during the continuous examination of knowledge (has achieved a total of at least 54 points in the course and has met the lower point threshold of adoption of each learning outcome, i.e. a minimum of 50% of the points of each learning outcome), may take the learning outcomes of the course at the final exam.*

***WRITTEN EXAM:** During the written exams, students solve a large number of open-ended problem tasks in which it is necessary to present the process of solving tasks and interpret the results obtained in the context of a given problem. By solving the tasks, the student can achieve a partial number of points if, through the process of solving the task, he shows the part of the solution that is considered correct. In addition to problem tasks, written exams also contain a printout of the computer output in which*

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the student needs to interpret the output results. The exam also includes multiple-choice questions and questions in which the student has to ascertain the accuracy of the statements and, for incorrect statements, offer the correct solutions.
**CONTINUOUS EXAMINATION: In order to make students progress more efficiently in class, continuous examinations of knowledge (2 intermediate exams) are carried out. In this way, students acquire smaller teaching units and more easily master the entire subject material.*

1.7 Student Work Tracking (Add X to the appropriate tracking format)

Attending classes	x	Teaching activity		Seminar paper		Experimental work	
Written exam	x	Oral exam		Essay		Research	
Project		Continuous Assessment*		Report		Practical work	
Portfolio							

1.8 Assessment and evaluation of students' work during classes and at the final exam

Evaluation and evaluation of students' work during classes and at the final exam is carried out on the basis of the Regulations on Studying of the EFFECTUS University of Applied Sciences.

The linking of learning outcomes, teaching methods and assessment of learning outcomes is carried out as follows:

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	Attending classes	Written exam	Altogether
I1		16	16
I2		16	16
I3		16	16
I4		16	16
I5		16	16
I6		16	16
OUT OF OUTCOME	4		4
ALTOGETHER	4	96	100

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FORMS OF TRACKING	*NAME OF LEARNING OUTCOMES*	*TEACHING METHOD*	*METHODS OF KNOWLEDGE ASSESSMENT*	*Maximum number of marks*
Written exam	*OUTCOME 1* Give definitions of basic statistical terms.	• **Lecture** • **Solving tasks on board**	**Written exam with problem tasks, multiple-choice questions, binary type questions (True/False**	*16*
Written exam	OUTCOME 2 Calculate and interpret basic statistical indicators - centrality measures and data dispersion measures.	• **Lecture** • **Solving tasks on Board** • **Work on the computer**	**Written exam with problem tasks and questions of interpretation of the output results of computer output**	*16*
Written exam	OUTCOME 3 Calculate and interpret the correlation coefficient and the coefficients of the regression equation.	• **Lecture** • **Solving tasks on board** • ***Work on a computer***	**Written exam with problem tasks and questions of interpretation of the output results of computer output**	*16*
Written exam	OUTCOME 4 Model time series with a suitable trend model and calculate and interpret chain and base indices.	• **Lecture** • **Solving tasks on board** • ***Work on a* computer**	**Written exam with problem tasks and questions of interpretation of the output results of computer output**	*16*

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Written exam	OUTCOME 5 Apply the basic rules of combinatorics, set theory and probability.	• **Lecture** • **Solving tasks on board**	**Written exam with problem tasks and questions of binary type (True/False**	*16*
Written exam	OUTCOME 6 Apply theoretical models of probability distribution of discrete and continuous random variables, (Binomial distribution, Normal distribution).	• **Lecture** • **Solving tasks on board** • **Work on a computer**	**Written exam with problem tasks and questions of interpretation of the output results of computer output**	*16*
Attending classes	**All outcomes**	***Lectures and exercises***	***Attendance records***	***4***
TOTAL POINTS				*100*

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Type of student workload	*Student Load Hours*	*ECTS credits*
Attending contact classes	75	2,5
Field Trips/Visits Outside the College	0	0
Independent study/research	30	1
Out-of-classroom preparation and preparation of seminars/presentations	0	0
Work on an out-of-classroom project assignment	0	0
Independent preparation for exams and exam time	90	3
Consultation activities	15	0,5
Other	0	0
TOTAL ECTS credits	**210**	**7**

RATING:

In order to achieve a positive grade in the course, the student must cumulatively meet two conditions: achieve a total of at least 54 (fifty-four) points in the course and meet the lower point threshold for the adoption of each individual learning outcome, which is 50% of the total points of the learning outcomes.

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Grades are calculated based on the following distribution of points:

SCORE	*RATING*
0,00 – 53,90	*Insufficient (1)*
54,00 – 64,90	*Sufficient (2)*
65,00 – 79,90	*Good (3)*
80,00 – 89,90	*Very good (4)*
90.00 and more	*Excellent (5)*

Grading is carried out in a transparent manner by collecting points. The course is evaluated with 100.00 points (with the possibility of achieving an additional 8 points on the Challenge learning outcome).

CHALLENGE LEARNING OUTCOME - the student has the opportunity to earn an additional maximum of 8 points through the Challenge learning outcome; The student independently chooses one of the activities proposed in the first lesson, and has the opportunity to independently propose an activity with which he wants to increase the number of points and, with the consent of the course holder, achieves them according to the criteria of the course. Points for the Challenge learning outcome are not distributed according to the learning outcomes, but the number achieved makes an additional number of points to the total number of points achieved according to the learning outcomes.

Before taking the final written exam, each student must meet the prescribed conditions, which primarily means that they have attended the prescribed percentage of attendance at classes determined by the Study Regulations and that they have received an electronically encrypted permission to take the exam.

1.9 Required reading and number of copies in relation to the number of students currently attending classes in the course

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Title	Number of copies	Number of students
Papić, Milan.: Applied Statistics in MS Excel, Likarija d.o.o., Zagreb, 2024. *Lectures and materials published on the Infoeduka portal*	*5** **students receive compulsory literature in permanent ownership*	*100*

1.10 Supplementary literature

Rozga, A.; Statistics for Economists, Faculty of Economics, Split, 2017

1.11 Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies

- *analysis of exam results, achieved results, level of understanding and knowledge during exercises, practical tasks and group work,*
- *conducting a survey among students,*
- *The evaluation of the teacher,*
- *achieved results and level of knowledge presented during the preparation and defense of the final thesis (students who choose a graduate thesis in this course),*
- *analysis of the Quality Centre's reports and*
- *Feedback from students who have already graduated and their employers on the usefulness of the content of this course in the performance of the work they do.*