EFFECTUS
University of Applied Sciences

DESCRIPTION OF THE COLLEGE

GENERAL INFORMATION		
Course leader	**Ph.D. Višnja Jurić**	
Name of the course	**Business Statistics**	
Study program	**Professional Short Study Entrepreneurship**	
Course status	Compulsory	
Year	Second year	
Point value and method of teaching	ECTS student load coefficient	6
	Number of hours (L+E+S)	(30+30+0)

DESCRIPTION OF THE COLLEGE
1.1. Objectives of the college
Introduction to basic statistical methods and techniques for data collection, presentation, organization, and analysis with an emphasis on calculating and interpreting results of basic statistical indicators. Students will become familiar with fundamental procedures and methods for utilizing and applying statistical computer programs, and apply acquired knowledge in the field of entrepreneurial practice.
1.2. *Conditions for course enrollment*
Passed the course Mathematics for Economists
1.3. *Expected learning outcomes for the course*
1. Define basic statistical concepts. ***2. Calculate and interpret basic statistical indicators – measures of central tendency and measures of data dispersion.*** ***3. Calculate and interpret the correlation coefficient and the coefficients of the regression equation using appropriate software.*** ***4. Calculate and interpret chain and base indices and model time series using an appropriate trend model in statistical software.*** ***5. Apply fundamental rules of combinatorics, set theory, and probability.*** ***6. Apply theoretical probability distribution models for discrete and continuous random variables (Binomial distribution, Normal distribution).***
1.4. *Course content*
Basic Statistical Concepts: Concept of population and sample, population parameter and statistical characteristic. Simple random sampling. Descriptive and inferential statistics.

Objective, grouping, and presentation of statistical data.
Graphical representation of data.
Qualitative and quantitative data. Measurement scales.
Graphical representations - bar chart, pie chart, Pareto diagram, time series plot. Frequency distribution. Histogram.
Stem-and-leaf plot. Distribution shape. Two-way table. Scatter plot. Numerical description of data.

Basic Statistical Indicators:

Measures of central tendency and measures of data variability in a series. Coefficient of variation.
Interquartile range. Box plot.

Correlation and Regression Analysis:

Measures of association 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:

Sets and set operations.
Definition of probability, basic probability rules - union and complement rule. Conditional probability. Independent events.
Probability distribution of discrete and continuous random variables.
Table of distribution of discrete random variable.
Mean and variance of discrete random variable.
Normal distribution.
Standard normal distribution. Determining areas under the curve.

1.5. *Types of teaching*	☒ lectures ☐ seminars and workshops ☒ exercises ☐ distance education ☐ field work	☐ independent tasks ☒ multimedia and network ☐ laboratory ☐ mentoring work ☐ the rest _____

1.6. *Obligations of students*

The obligations of students are prescribed in detail in the Statute, the Rules of Study and the Instructions on Student Obligations. The key obligations of students are:
ATTENDANCE AT CLASSES: students have an obligation to attend classes, actively monitor lectures and exercises, and participate constructively in classes, and to acquire the right to sit for the exam, it is necessary to attend classes in the percentages prescribed by the Study Regulations. For each student, his attendance at classes is recorded through the Infoeduk digital attendance system. The minimum obligations are;
• Full-time students must attend at least 70% of the total number of hours of classes to exercise the right to sign.

• Part-time students must attend at least 50% of the total number of hours of classes to exercise the right to sign.
PASSING THE EXAM: in order to obtain a positive grade, it is necessary to obtain at least 54 points in the total number of points and at least 50% of points for each learning outcome. A more detailed way of taking the exam is described in 1.8.
CLASS ACTIVITY includes writing (optional) homework, answering more complex questions and active work on the computer.

1.7. *Monitoring of students' work (add X next to the appropriate form of monitoring)*

Class attendance	X	Class activity	X	Seminar work		Experimental work	
Written exam	X	Oral exam		Essay		Research	
Project		Continuous verification of knowledge	X	Report		Practical work	
Portfolio							

1.8. *Assessment and evaluation of student work during classes and at the final exam*

Assessment and evaluation of students' work during classes and at the final exam is carried out based on the Study Regulations of the EFFECTUS University.

To improve students' progress in classes, lectures, exercises, continuous testing of knowledge (interim exams and activity in classes) and a final exam are conducted. In this way, students adopt smaller teaching units and master the course material more easily.

The total number of points is distributed through the following activities:

Assessment Structure and Student Engagement

The course is designed to evaluate students' theoretical understanding and practical application of statistical methods, ensuring they develop the necessary analytical and computational skills. The total ECTS credit allocation is 6, with various assessment components contributing to the final grade.

Class Attendance

- *ECTS Credits: 2*
- *Learning Outcomes: 1 - 6*
- *Student Activity: Participation in lectures and exercises*
- *Assessment Method: Attendance record*
- *Maximum Points: 0*

Midterm Exams

- *ECTS Credits: 3.5*
- *Midterm Exam 1: Covers learning outcomes 1, 2, and 3*
- *Midterm Exam 2: Covers learning outcomes 4, 5, and 6*
- *Student Activity:*
    - *Participation in written knowledge assessments*
    - *Solving calculation-based tasks*
    - *Interpreting statistical results*
    - *Generating and analyzing computer-based statistical outputs*
- *Assessment Method:*

- *Midterm Exam 1: Maximum 16 points per learning outcome*
- *Midterm Exam 2: Maximum 16 points per learning outcome*

- *Total Possible Score: 0 - 96 points*

In-Class Participation

- *ECTS Credits: 0.5*
- *Student Activity:*
  - *Completing optional homework assignments*
  - *Answering complex questions*
  - *Active engagement in computer-based exercises*
- *Assessment Method: Maximum 4 points*

Final Exam

- *ECTS Credits: Included in the total*
- *Learning Outcomes: 1 - 6*
- *Student Activity:*
  - *Participation in a written examination*
  - *Solving problem-based tasks related to real-world economic practices*
- *Assessment Method: Grading of correct answers*
- *Total Possible Score: 0 - 96 points*

Total ECTS and Grading Distribution

- *Total ECTS Credits: 6*
- *Overall Maximum Score: 100 points*

This structured assessment ensures that students develop both theoretical knowledge and practical expertise in statistical analysis, preparing them for real-world economic and business applications.

The results of the examinations are shown in more detail in the table below:

NAME OF THE LEARNING OUTCOME	***INTERMEDIATE EXAM/EXAM***	***CLASS ACTIVITY***	***TOTAL***
OUTCOME 1	*16*	*0*	*16*
OUTCOME 2	*16*	*0*	*16*
OUTCOME 3	*16*	*0*	*16*
OUTCOME 4	*16*	*0*	*16*
OUTCOME 5	*16*	*0*	*16*
OUTCOME 6	*16*	*0*	*16*
OUT OF THE OUTCOME		*4*	*4*
TOTAL	***96***	***4***	***100***

**FINAL EXAM - a student who, during the continuous assessment of knowledge, did not meet the requirements for passing the exam (achieved a total of at least 54 points in the course and met the lower*

point threshold for acceptance of each learning outcome, i.e. a minimum of 50% points for each learning outcome), can take the learning outcome of the course in the final exam. In the final exam, it is possible to achieve a maximum of 96 points. (100 points – class activity 4 points = 96 points).
The student can get additional points through the Challenge learning outcome.

EVALUATION:
To achieve a positive grade in the course, the student must cumulatively fulfill two conditions: achieve a total of at least 54 (fifty-four) points from the course and meet the lower point threshold for acceptance of each individual learning outcome, which is 50% of the total points of the learning outcome.
Grades are calculated based on the following distribution of points:

NUMBER OF POINTS	*GRADE*
0,00 – 53,90	Unsufficient (1)
54,00 – 64,90	Sufficient (2)
65,00 – 79,90	Good (3)
80,00 – 89,90	Very Good (4)
90,00 i više	Excellent (5)

The assessment is carried out in a transparent way by collecting points. The course is valued at 100.00 points (with the possibility of obtaining an additional 8 points on the Challenge learning outcome).

CHALLENGE LEARNING OUTCOME - through the Challenge learning outcome, the student can earn an additional (max) 8 points. To achieve "challenge" points, the student independently collects data, and with the help of appropriate computer software, performs a statistical analysis of the collected data and presents the obtained results during class. The points for the Challenge learning outcome are not distributed according to the learning outcomes, but the number achieved constitutes 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 he has attended a certain percentage of classes determined by the Study Regulations and that he has received an electronically encrypted permit to take the exam.

1.9. *Mandatory literature and the number of copies in relation to the number of students currently attending classes in the course*

Title	*Number of copies*	*Number of students*
Papić, M.: Applied statistics in MS Excel (5th edition), Likarija d.o.o, Zagreb, 2024.	*50*	*50*
Lectures and materials published on the Infoeduka portal		

1.10. Supplementary literature

Paul Newbold, William L-Carlson, Betty Thorne: STATISTICS for business and economics, MATE d.o.o.

Rozga, A. Grčić, B.: Business statistics, Split, 2009.

1.11. Methods of quality monitoring that ensure the acquisition of output knowledge, skills and competences
• Statistical processing and analysis of exam results (checking for Gaussian curve/normal distribution of success, comparing and tracking exam results across different cohorts, analyzing understanding of individual modules/questions on the exam, etc.), *• Conducting surveys among students,* *• Evaluation and self-assessment of instructors,* *• Achieved results and level of knowledge demonstrated during the preparation and defense of the final thesis (for students who choose a thesis in this subject),* *• Analysis of quality center manager reports,* *• Feedback from graduates on the usefulness of the content of this subject in their professional activities.*