Detailed Course Syllabus

Academic Year		2023/2024		**Semester**	Winter
Study Program	Undergraduate University Studies	**Specialization / Major in**	Communication Sciences, Psychology, Sociology, History	**Year of Study**	1-3

I. BASIC COURSE INFORMATION

Name	Introduction to Statistics		
Abbreviation	IZBP233	**Code**	252568
Status	Elective	**ECTS**	6
Prerequisites			

Total Course Workload

Teaching Mode	**Total Hours**	**Teaching Mode**	**Total Hours**
Lectures	30	Practical	30

Class Time and Place

II. TEACHING STAFF

Course Holder

Name and Surname	Luka Sikic		
Academic Degree	PhD	**Professional Title**	Assistant professor
Contact E-mail	luka.sikic@unicath.hr	**Telephone**	+385 (1)
Office Hours			

Course Assistant	Petra Palic		
Academic Degree	Phd	**Professional Title**	Assistant professor
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Office Hours			

III. DETAILED COURSE INFORMATION

Teaching Language English

Course Description

Course Objectives:

This course introduces the fundamental statistics principles, focusing on developing research questions, hypothesis formation, research design, and data analysis. Students will gain practical experience using statistical software and learn the proper application of statistical tests. Moreover, the course highlights the importance of effectively communicating research results to various audiences, giving students the skills to present their findings. Students must pass two-semester and final oral exams to complete the course successfully.

Course Content:

Foundations: Introduction to the key concepts and principles of descriptive statistics.
Statistical Programming Essentials: Familiarization with a widely-used programming language for statistical analysis, including basic syntax and functionality.
Descriptive Statistics: Measures of central tendency, Measures of variability, Measures of association, and Data visualization.
Statistical Theory: Probability distributions, Population, Sample, Hypothesis testing.
Data Analysis: Inferential statistical techniques, such as testing of the mean, categorical analysis, ANOVA, and regression.

Expected Educational Outcomes

1. Demonstrate a solid understanding of fundamental statistical concepts, including probability theory, descriptive statistics, hypothesis testing, and basic inferential techniques.
2. Formulate research questions and generate testable hypotheses relevant to real-world problems in social science research.
3. Design and execute simple experiments, collect data, and apply appropriate statistical techniques to analyze and interpret the results.
4. Develop proficiency in using statistical software for data management, visualization, and analysis, as well as interpreting the output generated by the software.
5. Critically evaluate and assess the validity of statistical analyses and conclusions in scientific research papers and reports.
6. Collaborate effectively in group tasks and discussions, contributing to the collective understanding of statistical concepts and their applications.
7. Demonstrate a solid statistical foundation, paving the way for further studies in more advanced statistical techniques and methodologies.

Textbooks and Materials

Required

Navarro, D. J. (2019). Learning Statistics with R: A tutorial for psychology students and other beginners. Adelaide, Australia: University of Adelaide Press. Available online: https://learningstatisticswithr.com/ Peck,

	R., Olsen, C., & Devore, J. L. (2011). Introduction to Statistics and Data Analysis. Boston: Cengage Learning. Weiss, N. A. (2015). Introductory Statistics. Boston: Pearson.
Supplementary	Moore, D. S., Notz, W. I., & Flinger, M. A. (2018). The Basic Practice of Statistics. New York: W. H. Freeman and Company. Triola, M. F. (2017). Elementary Statistics. Boston: Pearson. De Veaux, R. D., Velleman, P. F., & Bock, D. E. (2016). Intro Stats. Boston: Pearson. Diez, D. M., Barr, C. D., & Çetinkaya-Rundel, M. (2014). OpenIntro Statistics. CreateSpace Independent Publishing Platform. Peck, R., Olsen, C., & Devore, J. L. (2011). Introduction to Statistics and Data Analysis. Boston: Cengage Learning. Johnson, R. A., & Kuby, P. (2016). Just the Essentials of Elementary Statistics. Boston: Cengage Learning. Agresti, A., & Franklin, C. (2013). Statistics: The Art and Science of Learning from Data. Boston: Pearson.

Examination and Grading					
To Be Passed	Yes	**Exclusively Continuous Assessment**	No	**Included in Average Grade**	Yes
Prerequisites to Obtain Signature and Take Final Exam	Attendance is crucial for success in this course, and students are expected to attend at least 70% of lectures and seminar sessions. This				
Examination Manner	Class activities: Two-semester exams and a final oral exam.				

Grading Manner

The final course grade is based on 100 points earned through the student's continuous involvement in-class activities:
Fair (2) – 50 to 64 points
Good (3) – 65 to 79 points
Very good (4) – 80 to 89 points
Excellent (5) – 90 to 100 points

Earning credits:
Class activities contribute to 70% of the grade:
Exam 1 – maximum 35 points
Exam 2 – maximum 35 points
The final (oral) exam contributes to 30% of the grade:
Final exam – maximum of 30 points

Detailed Overview of Grading within ECTS	Activity	ECTS points	Grade share (%)
	Attending	1.5	0
	Exam 1	1.575	35

Exam 2	1.575	35
TOTAL CLASSES	4.65	70
Final exam	1.35	30
TOTAL	6	100

Midterm Exam Dates	The first exam is in the 7th week of the course, and the second is in the 15th week.
Final Exam Dates	According to the official schedule.

IV. WEEKLY CLASS SCHEDULE

Lectures

Week	Topic
1.	Introduction to the course.
2.	Introduction to the R programming language.
3.	Descriptive statistics.
4.	Graphs and visualization.
5.	Basics of probability theory.
6.	Estimating population parameters.
7.	Testing statistical hypotheses.
8.	Midterm exam.
9.	Categorical data analysis.
10.	Comparing means.
11.	Linear regression.
12.	ANOVA.
13.	Factorial ANOVA.
14.	Multivariate statistical models.
15	Final exam.

Seminars

Week	Topic
1.	Introduction to the course.
2.	Introduction to the R programming language.
3.	Descriptive statistics.
4.	Graphs and visualization.
5.	Basics of probability theory.
6.	Estimating population parameters.
7.	Testing statistical hypotheses.
8.	Midterm exam.

9.	Categorical data analysis.
10.	Comparing means.
11.	Linear regression.
12.	ANOVA.
13.	Factorial ANOVA.
14.	Multivariate statistical models.
15	Final exam.