



# Detailed Course Syllabus

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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| <b>Academic year:</b><br>2024/2025                                                                                                                                                                                                                                          | <b>Semester:</b><br>Winter semester |
| <b>Study Program:</b><br>Komunikologija (R)<br>(elective)<br>Povijest (R) (elective)<br>Psihologija (R) (elective)<br>Sociologija (R) (elective)<br>Sestrinstvo (I) (elective)<br>Sestrinstvo (R) (elective)<br>Primaljstvo (R)<br>(elective)<br>Primaljstvo (I) (elective) | <b>Year of study:</b><br>1          |

## I. BASIC COURSE INFORMATION

**Name:** Introduction to Statistics

**Status:** Compulsory

**ECTS:** 6

**Code:** 252568

*Total Course Workload*

**Teaching Mode**

**Total Hours**

Lecture

30

Auditory exercise

30

**Class Time and Place:** HKS - according to the published schedule

## II. TEACHING STAFF

*Course Holder*

**Name and Surname:** Šikić Luka

**Academic Degree:**

**Contact E-mail:**

[luka.sikic@unicath.hr](mailto:luka.sikic@unicath.hr)

**Telephone:**

**Office Hours:** According to the published schedule

*Course Assistant*

## III. DETAILED COURSE INFORMATION

**Teaching Language:** Hrvatski

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|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Course Description</b>                                    | 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Educational Outcomes</b>                                  | 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. |
| <b>Student obligations</b>                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <i>Textbooks and Materials</i>                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Required</b>                                              | <p>Navarro, D. J. (2019). Learning Statistics with R: A tutorial for psychology students and other beginners. Adelaide, Australia: University of Adelaide Press. Available online: <a href="https://learningstatisticswithr.com/">https://learningstatisticswithr.com/</a> Peck, R., Olsen, C., &amp; Devore, J. L. (2011). Introduction to Statistics and Data Analysis. Boston: Cengage Learning.</p> <p>Weiss, N. A. (2015). Introductory Statistics. Boston: Pearson</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Supplementary</b>                                         | <p>Moore, D. S., Notz, W. I., &amp; Flinger, M. A. (2018). The Basic Practice of Statistics. New York: W. H. Freeman and Company.</p> <p>Triola, M. F. (2017). Elementary Statistics. Boston: Pearson.</p> <p>De Veaux, R. D., Velleman, P. F., &amp; Bock, D. E. (2016). Intro Stats. Boston: Pearson.</p> <p>Diez, D. M., Barr, C. D., &amp; Çetinkaya-Rundel, M. (2014). OpenIntro Statistics. CreateSpace Independent Publishing Platform.</p> <p>Peck, R., Olsen, C., &amp; Devore, J. L. (2011). Introduction to Statistics and Data Analysis. Boston: Cengage Learning.</p> <p>Johnson, R. A., &amp; Kuby, P. (2016). Just the Essentials of Elementary Statistics. Boston: Cengage Learning.</p> <p>Agresti, A., &amp; Franklin, C. (2013). Statistics: The Art and Science of Learning from Data. Boston: Pearson.</p>                                                                                                                                                                                                                                           |
| <i>Examination and Grading</i>                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Prerequisites to Obtain Signature and Take Final Exam</b> | Attendance is crucial for success in this course, and students are expected to attend at least 70% of lectures and seminar sessions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

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

#### Examination Manner

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

#### Grading Manner

Class activities: Two-semester exams and a final oral exam.

#### Detailed Overview of Grading within ECTS

| VRSTA AKTIVNOSTI                  | ECTS bodovi - koeficijent opterećenja studenata | UDIO OCJENE (%) |
|-----------------------------------|-------------------------------------------------|-----------------|
| Pohađanje nastave                 | 1.5                                             | 0               |
| Kolokvij-međuispit                | 1.575                                           | 35              |
| Kolokvij-međuispit                | 1.575                                           | 35              |
| Ukupno tijekom nastave            | 4.65                                            | 70              |
| Završni ispit                     | 1.35                                            | 30              |
| UKUPNO BODOVA (nastava+zav.ispit) | 6                                               | 100             |

#### Midterm exam dates:

#### Exam period dates:

## IV. WEEKLY CLASS SCHEDULE

[Predavanja]

| # | 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.                      |