# Detaljni izvedbeni plan

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| **Akademska godina:**<br>2026/2027 | **Semestar:**<br>Ljetni |
| **Godina studija:**<br>1 | **Studiji:**<br>Sestrinstvo (I) (izborni) (Diplomski)<br>Komunikologija - Interkulturalna komunikacija i novinarstvo (R) (izborni) (Diplomski)<br>Povijest (R) (izborni) (Diplomski)<br>Sestrinstvo (R) (izborni) (Diplomski) |

## I. OSNOVNI PODACI O KOLEGIJU

**Naziv kolegija:** Multivariate statistical methods

**Kratica kolegija:** IZBD252

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| **ECTS bodovi:** 6 | **Šifra kolegija:** 252578 |

**Preduvjeti za upis kolegija:** Nema

*Ukupno opterećenje kolegija*

| **Vrsta nastave** | **Ukupno sati** |
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| Predavanje | 30 |
| Auditorna vježba | 30 |

**Mjesto i vrijeme održavanja nastave:** HKS – prema objavljenom rasporedu

## II. NASTAVNO OSOBLJE

*Nositelj kolegija*

**Ime i prezime:** Šikić Luka

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| **Akademski stupanj/naziv:** | **Izbor:** docent |
| **Kontakt e-mail:**<br>luka.sikic@unicath.hr | **Telefon:** |

**Konzultacije:** Prema objavljenom rasporedu

*Suradnici na kolegiju*

**Ime i prezime:** Šagovac Mislav

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| **Akademski stupanj/naziv:** | **Izbor:** |
| **Kontakt e-mail:**<br>mislav.sagovac@unicath.hr | **Telefon:** |

**Konzultacije:** Prema objavljenom rasporedu

## III. DETALJNI PODACI O KOLEGIJU

**Jezik na kojem se nastava održava:** English

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| **Opis kolegija** | This course covers advanced empirical research design, including developing questions, creating hypotheses, designing research, and analyzing data. Students will gain hands-on experience using statistical software and learn to properly analyze data using appropriate statistical tests. The course will also cover effective communication of experimental findings, helping students develop skills to communicate their research findings to different audiences effectively. By the end of the course, students should be able to design and conduct their experiments and analyze the data they collect using statistical techniques appropriate for their research questions. They should also effectively communicate their experimental findings to scientific audiences. This will allow them to stay up-to-date with the course content and participate in scientific discussions.<br><br>In addition to attending lectures and seminars, students will be required to complete a data analysis project, which will be presented as an oral seminar presentation. This project will allow students to apply the data science skills they have learned to a real-world social science research problem. To complete the course, students must accumulate at least 70% of their grade through class activities, including midterm exams and written and orally presented seminar projects. This will ensure that students regularly engage with the course content and actively work towards mastering the skills and concepts covered in the course |
| **Očekivani ishodi učenja na razini kolegija** | 1. Develop a thorough understanding of multivariate statistical techniques, including their theoretical foundations and practical applications. 2. Learn to apply multivariate statistical techniques to real-world data analysis problems and research questions. 3. Understand the assumptions underlying multivariate statistical methods and how to assess their validity. 4. Gain experience in using statistical software to analyze multivariate data. 5. Develop skills in interpreting and presenting results of multivariate statistical analyses to various audiences. |
| *Literatura* | |
| **Obavezna** | Hair Jr., J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). Multivariate Data Analysis. Pearson. |
| **Dopunska** | Stevens, J. P. (2009). Applied Multivariate Statistics for the Social Sciences. Routledge.<br><br>Izenman, A. J. (2013). Modern Multivariate Statistical Techniques: Regression, Classification, and Manifold Learning. Springer.<br><br>Sharma, S. (1996). Applied Multivariate Techniques. John Wiley & Sons.<br><br>Bartholomew, D. J., & Steele, F. (2008). The Analysis of Multivariate Social Science Data. CRC Press |
| *Način ispitivanja i ocjenjivanja* | |

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| **Polaže se** DA | **Isključivo kontinuirano praćenje nastave** NE | **Ulazi u prosjek** DA |

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| **Preduvjeti za dobivanje potpisa i polaganje završnog ispita** | Attendance is crucial for success in this course, and students are expected to attend at least 70% of lectures and seminar sessions. |

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| **Način ocjenjivanja** | Final course grade is based on 100 points earned through student's continuous involvement in class activities:<br>Fair (2) – 50 to 64 points<br>Good (3) – 65 to 79 points<br>Very good (4) – 80 to 89 points<br>Excellent (5) – 90 to 100 points<br>Earning credits:<br>Class activities contribute to 50% of the grade:<br>Seminar – maximum 40 points<br>Seminar presentation – maximum 10 points<br>Final exam contributes to 50% of the grade:<br>Final exam – maximum of 50 points (50% of correct answers necessary for passing) |
| **Način polaganja ispita** | Class activities: Midterm exam (written), seminar presentation (written and oral) and final exam. |

**Detaljan prikaz ocjenjivanja unutar Europskoga sustava za prijenos bodova**

| VRSTA AKTIVNOSTI | ECTS bodovi - koeficijent opterećenja studenata | UDIO OCJENE (%) |
|---|---|---|
| Pohađanje nastave | 1.5 | 0 |
| Kolokvij-međuispit | 1.8 | 40 |
| Seminarski rad | 0.9 | 20 |
| Seminarsko izlaganje | 0.45 | 10 |
| Ukupno tijekom nastave | 4.65 | 70 |
| Završni ispit | 1.35 | 30 |
| UKUPNO BODOVA (nastava+zav.ispit) | 6 | 100 |

## IV. TJEDNI PLAN NASTAVE

*Predavanja*

| # | Tema |
|---|---|
| 1 | Overview of the Course and Student Obligations |
| 2 | Fundamentals of the R Programming Language |
| 3 | Descriptive Statistics Refresher |
| 4 | Inferential Statistics Refresher |
| 5 | Principal Component Analysis (PCA) |
| 6 | Factor Analysis |
| 7 | Cluster Analysis |
| 8 | Multivariate Regression Analysis |

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| 9 | Content (text) Analysis |
| 10 | Survival Analysis |
| 11 | Network Analysis |
| 12 | Time Series Analysis |
| 13 | Machine Learning |
| 14 | Conducting Empirical Research |
| 15 | Final exam |
| *Seminari* | |
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