Medicinski fakultet u Rijeci

IZVEDBENI NASTAVNI PLAN
2026/2027

Za kolegij

Biostatistics

Studij:	**Medical Studies in English (R)** Sveučilišni integrirani prijediplomski i diplomski studij
Katedra:	**Katedra za medicinsku fiziku i biofiziku**
Nositelj kolegija:	**prof. dr. sc. Žauhar Gordana, prof. fizike i kemije**
Godina studija:	**2**
ECTS:	**1.5**
Stimulativni ECTS:	**0 (0.00%)**
Strani jezik:	**Mogućnost izvođenja na stranom jeziku**

Podaci o kolegiju:

Biostatistics is a compulsory course on the second year of the Integrated Undergraduate and Graduate University Study of Medicine, with 15 hours of lectures and 15 hours of exercises. It is held during IV. Semester. Lectures are held in lecture hall number 9, and practical in the computer classroom at the Faculty of Medicine. The estimated duration of course is 7 weeks.

COURSE STRUCTURE Formal lectures: 15 hours Practicals: 15 hours Total hours: 30

The objective of the course is to teach students about statistical reasoning, when and how to apply and how to interpret the basic statistical tests. In this way students will develop the ability of quantitative approach to data gathering, analysis and interpretation within the fields of biological sciences and humanities, which is the necessary requirement for their professional development, ability to critically follow the scientific and technical literature and participate in its creation.

Popis obvezne ispitne literature:

Triola M.M, Triola M.F, Biostatistics for the Biological and Health Sciences, Pearson, 2018.

Popis dopunske literature:

Dawson B, Trapp R.G, Basic & Clinical Biostatistics, McGraw-Hill, 2004.

Nastavni plan:

Vježbe popis (s naslovima i pojašnjenjem):

P1-2 Preparing and Writing Data In The Data Processing Program.

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P3 Visualising of Data. Histograms. Pie Charts. Time Series Graph.

.

P4 Descriptive Statistics. Calculation of Basic Measures of Centre and Variation of the Numerical Data. Graphic Representation of Empirical Distribution

,

P5 Testing of Data Distribution for Normality with Kolmogorov-Smirnov test

,

P6 z-Scores (determination of the position for each result in the normal distribution with z-scores)

.

P7 Comparing the means of two independent samples with Student t-test

,

P8 Comparing the means of two dependent samples

,

P9 Analisis of Variance (ANOVA)

,

P10 Correlation and regression

,

P11 Comparison of Qualitative Data

,

P12 The Chi-squared Test

,

P13 Non-Parametric Methods

,

P14 Repeating and Testing of Knowledge

,

P15 Repeating and Testing of Knowledge

,

Predavanja popis (s naslovima i pojašnjenjem):

L1 Introduction to Statistics. Statistics in Medicine. Scales of Measurement.

.

L2 Presenting of Data in Tables and Graphs. Summarizing and Displaying Numerical Data in Graphs.

Empirical Distribution and Data Grouping Within Intervals of a Continuous Variable and Classes.

.

L3 Measures of central tendency - arithmetical mean, mode, median, geometrical mean and harmonic mean.

,

L4 Measures of Variation - range, mean deviation, variance, and standard deviation. Variability coefficient. Percentiles, deciles and quartiles.

.

L5 Normal Probability Distributions. The position of a result within the group (z-Scores).

,

L6 Population and the sample. Inferences about the population based on sample-results. Confidence limits.

,

L7 Statistical significance of differences between the means of mutually independent samples.

,

L8 Correlation between variables.

,

L9 Regression analysis.

,

L10 Statistical significance of differences between the means of mutually dependent (correlated) samples.

,

L11 Analysis of Variance (ANOVA).

,

L12 Analysis and Comparison of Qualitative Data. Proportions. Inferences about Two Proportions: Independent Samples.

,

L13 Chi-Square Test. Mc-Nemar test (Chi-Square Test for Dependent Samples).

,

L14 Written Knowledge Assessment

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L15 Final Lecture and Preparation for the Exam

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Obveze studenata:

Students’ obligations are course attendance and active participation in all practicals.

Ispit (način polaganja ispita, opis pisanog/usmenog/praktičnog dijela ispita, način bodovanja, kriterij ocjenjivanja):

Evaluation of students' work:

Students can obtain a total of 100 credits (a maximum of 70 credits during the course and a maximum of 30 credits on the final exam). Students are allowed to take the final exam if they acquire a minimum of 35 credits during the trimester.

Evaluation of Students' Work During the Course (Maximum 70 credits) a) Active participation during practicals (3 credits) b) Midterm exam (32 credits) c) Colloquium (35 credits)

The attendance at lectures and practicals is mandatory. If necessary, a student can be absent from 30% of the classes.

a) Active participation during seminars:

During the practicals student participation and dedication will be monitored. At the end of each practical, students are also given homework assignments. A maximum of 3 points is awarded through active participation. Activities scoring is done in the following way

number of correctly assigned homework assignments	credits
0	0
1	1
2	2
3	3

b) Midterm Exam (32 credits)

Students have to pass the written midterm exam (in form of a test consisting of 3 problem tasks). In order to pass the midterm exam students have to score at least 50% (16 credits)

c) Colloquium from practical (35 credits)

Practicals end up with a colloquium. The colloquium examines the resolution of statistical tasks in the computer program "Statistica". It is possible to collect up to 35 credits.

Final exam:

Students have to pass the written exam (in form of a test consisting of 29 questions, each containing 5 statements). In order to pass the written part of the exam students have to score at least 50% (15/29 correct answers).

Assessment of the written part of the final exam:

Number of correct answers	Credits
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	30

The ECTS grading system is defined by the following criteria:

A (5) – 90-100 credits B (4) – 75-89,9 credits C (3) – 60-74,9 credits D (2) – 50-59,9 credits

Ostale napomene (vezane uz kolegij) važne za studente:

Retaking the course: A student who acquires less than 35 credits during the course has failed the course and is graded with F and must retake the course BIOSATISTICS.

Professors and associates are available daily during working hours via e-mail for all questions regarding teaching.
Gordana Žauhar, PhD, Full Professor gordana.zauhar@uniri.hr
Ivan Pribanić, assinstant ipribanic@uniri.hr
Marijana Majetić, senior tecnician marijana.majetic@uniri.hr

Course content and all course-related information can be found on the Merlin 2026/2027 portal.

SATNICA IZVOĐENJA NASTAVE 2026/2027

Biostatistics

Predavanja (mjesto i vrijeme / grupa)	**Vježbe** (mjesto i vrijeme / grupa)
19.04.2027	

L1 Introduction to Statistics. Statistics in Medicine. Scales of Measurement.:
• P09 - NASTAVA NA ENGLESKOM JEZIKU (12:15 - 15:00) [149]
  ○ BS
 	
L2 Presenting of Data in Tables and Graphs. Summarizing and Displaying Numerical Data in Graphs. Empirical Distribution and Data Grouping Within Intervals of a Continuous Variable and Classes.:
• P09 - NASTAVA NA ENGLESKOM JEZIKU (12:15 - 15:00) [149]
  ○ BS
 	
L3 Measures of central tendency - arithmetical mean, mode, median, geometrical mean and harmonic mean.:
• P09 - NASTAVA NA ENGLESKOM JEZIKU (12:15 - 15:00) [149]
  ○ BS	

prof. dr. sc. Žauhar Gordana, prof. fizike i kemije [149]	
20.04.2027	
	P1-2 Preparing and Writing Data In The Data Processing Program.: • P09 - NASTAVA NA ENGLESKOM JEZIKU (09:15 - 11:00) [457] [1458] ○ BS P B
Majetić Marijana, viša laborantica [1458] · Pribanić Ivan, mag. edu. phys. et math. [457]	
22.04.2027	

	P1-2 Preparing and Writing Data In The Data Processing Program.:
	• P09 - NASTAVA NA ENGLESKOM JEZIKU (09:15 - 11:00) [457] [1458]
	  ○ BS P C
	• P09 - NASTAVA NA ENGLESKOM JEZIKU (11:15 - 13:00) [457] [1458]
	  ○ BS P A

Majetić Marijana, viša laborantica [1458] · Pribanić Ivan, mag. edu. phys. et math. [457]	
26.04.2027	

L4 Measures of Variation - range, mean deviation, variance, and standard deviation. Variability coefficient. Percentiles, deciles and quartiles.:
• P09 - NASTAVA NA ENGLESKOM JEZIKU (11:15 - 13:00) [149]
  ○ BS
 	
L5 Normal Probability Distributions. The position of a result within the group (z-Scores).:
• P09 - NASTAVA NA ENGLESKOM JEZIKU (11:15 - 13:00) [149]
  ○ BS	

prof. dr. sc. Žauhar Gordana, prof. fizike i kemije [149]	
27.04.2027	

	P3 Visualising of Data. Histograms. Pie Charts. Time Series Graph.:
	• P09 - NASTAVA NA ENGLESKOM JEZIKU (09:15 - 11:00) [457] [1458]
	  ◦ BS P B
	
	P4 Descriptive Statistics. Calculation of Basic Measures of Centre and Variation of the Numerical Data. Graphic Representation of Empirical Distribution:
	• P09 - NASTAVA NA ENGLESKOM JEZIKU (09:15 - 11:00) [457] [1458]
	  ◦ BS P B

Majetić Marijana, viša laborantica [1458] · Pribanić Ivan, mag. edu. phys. et math. [457]	
29.04.2027	

	P3 Visualising of Data. Histograms. Pie Charts. Time Series Graph.:
	• P09 - NASTAVA NA ENGLESKOM JEZIKU (09:15 - 11:00) [457] [1458]
	  ◦ BS P C
	• P09 - NASTAVA NA ENGLESKOM JEZIKU (11:15 - 13:00) [457] [1458]
	  ◦ BS P A
	
	P4 Descriptive Statistics. Calculation of Basic Measures of Centre and Variation of the Numerical Data. Graphic Representation of Empirical Distribution:
	• P09 - NASTAVA NA ENGLESKOM JEZIKU (09:15 - 11:00) [457] [1458]
	  ◦ BS P C
	• P09 - NASTAVA NA ENGLESKOM JEZIKU (11:15 - 13:00) [457] [1458]
	  ◦ BS P A

Majetić Marijana, viša laborantica [1458] · Pribanić Ivan, mag. edu. phys. et math. [457]	
03.05.2027	

L6 Population and the sample. Inferences about the population based on sample-results. Confidence limits.:
• P09 - NASTAVA NA ENGLESKOM JEZIKU (11:15 - 13:00) [149]
  ◦ BS
 	
L7 Statistical significance of differences between the means of mutually independent samples.:
• P09 - NASTAVA NA ENGLESKOM JEZIKU (11:15 - 13:00) [149]
  ◦ BS	

prof. dr. sc. Žauhar Gordana, prof. fizike i kemije [149]	
04.05.2027	

	P5 Testing of Data Distribution for Normality with Kolmogorov-Smirnov test: • P09 - NASTAVA NA ENGLESKOM JEZIKU (09:15 - 11:00) [457] [1458] ◦ BS P B P6 z-Scores (determination of the position for each result in the normal distribution with z-scores): • P09 - NASTAVA NA ENGLESKOM JEZIKU (09:15 - 11:00) [457] [1458] ◦ BS P B
Majetić Marijana, viša laborantica [1458] · Pribanić Ivan, mag. edu. phys. et math. [457]	
06.05.2027	
	P5 Testing of Data Distribution for Normality with Kolmogorov-Smirnov test: • P09 - NASTAVA NA ENGLESKOM JEZIKU (09:15 - 11:00) [457] [1458] ◦ BS P C • P09 - NASTAVA NA ENGLESKOM JEZIKU (11:15 - 13:00) [457] [1458] ◦ BS P A P6 z-Scores (determination of the position for each result in the normal distribution with z-scores): • P09 - NASTAVA NA ENGLESKOM JEZIKU (09:15 - 11:00) [457] [1458] ◦ BS P C • P09 - NASTAVA NA ENGLESKOM JEZIKU (11:15 - 13:00) [457] [1458] ◦ BS P A
Majetić Marijana, viša laborantica [1458] · Pribanić Ivan, mag. edu. phys. et math. [457]	
10.05.2027	
L8 Correlation between variables.: • P09 - NASTAVA NA ENGLESKOM JEZIKU (11:15 - 13:00) [149] ◦ BS L9 Regression analysis.: • P09 - NASTAVA NA ENGLESKOM JEZIKU (11:15 - 13:00) [149] ◦ BS	
prof. dr. sc. Žauhar Gordana, prof. fizike i kemije [149]	
11.05.2027	
	P7 Comparing the means of two independent samples with Student t-test: • P09 - NASTAVA NA ENGLESKOM JEZIKU (09:15 - 11:00) [457] [1458] ◦ BS P B P8 Comparing the means of two dependent samples: • P09 - NASTAVA NA ENGLESKOM JEZIKU (09:15 - 11:00) [457] [1458] ◦ BS P B
Majetić Marijana, viša laborantica [1458] · Pribanić Ivan, mag. edu. phys. et math. [457]	
13.05.2027	

	P7 Comparing the means of two independent samples with Student t-test: • P09 - NASTAVA NA ENGLESKOM JEZIKU (09:15 - 11:00) [457] [1458] ◦ BS P C • P09 - NASTAVA NA ENGLESKOM JEZIKU (11:15 - 13:00) [457] [1458] ◦ BS P A P8 Comparing the means of two dependent samples: • P09 - NASTAVA NA ENGLESKOM JEZIKU (09:15 - 11:00) [457] [1458] ◦ BS P C • P09 - NASTAVA NA ENGLESKOM JEZIKU (11:15 - 13:00) [457] [1458] ◦ BS P A
Majetić Marijana, viša laborantica [1458] · Pribanić Ivan, mag. edu. phys. et math. [457]	
17.05.2027	
L10 Statistical significance of differences between the means of mutually dependent (correlated) samples.: • P09 - NASTAVA NA ENGLESKOM JEZIKU (11:15 - 13:00) [149] ◦ BS L11 Analysis of Variance (ANOVA).: • P09 - NASTAVA NA ENGLESKOM JEZIKU (11:15 - 13:00) [149] ◦ BS	
prof. dr. sc. Žauhar Gordana, prof. fizike i kemije [149]	
18.05.2027	
	P9 Analisis of Variance (ANOVA): • P09 - NASTAVA NA ENGLESKOM JEZIKU (09:15 - 11:00) [457] [1458] ◦ BS P B P10 Correlation and regression: • P09 - NASTAVA NA ENGLESKOM JEZIKU (09:15 - 11:00) [457] [1458] ◦ BS P B
Majetić Marijana, viša laborantica [1458] · Pribanić Ivan, mag. edu. phys. et math. [457]	
20.05.2027	
	P9 Analisis of Variance (ANOVA): • P09 - NASTAVA NA ENGLESKOM JEZIKU (09:15 - 11:00) [457] [1458] ◦ BS P C • P09 - NASTAVA NA ENGLESKOM JEZIKU (11:15 - 13:00) [457] [1458] ◦ BS P A P10 Correlation and regression: • P09 - NASTAVA NA ENGLESKOM JEZIKU (09:15 - 11:00) [457] [1458] ◦ BS P C • P09 - NASTAVA NA ENGLESKOM JEZIKU (11:15 - 13:00) [457] [1458] ◦ BS P A
Majetić Marijana, viša laborantica [1458] · Pribanić Ivan, mag. edu. phys. et math. [457]	

24.05.2027

L12 Analysis and Comparison of Qualitative Data. Proportions. Inferences about Two Proportions: Independent Samples.:
- P09 - NASTAVA NA ENGLESKOM JEZIKU (11:15 - 13:00) [149]
  - BS

L13 Chi-Square Test. Mc-Nemar test (Chi-Square Test for Dependent Samples).:
- P09 - NASTAVA NA ENGLESKOM JEZIKU (11:15 - 13:00) [149]
  - BS

L14 Written Knowledge Assessment:
- P02 (14:00 - 15:00) [149]
  - BS

prof. dr. sc. Žauhar Gordana, prof. fizike i kemije [149]

25.05.2027

P11 Comparison of Qualitative Data:
- P09 - NASTAVA NA ENGLESKOM JEZIKU (09:15 - 11:00) [457] [1458]
  - BS P B

P12 The Chi-squared Test:
- P09 - NASTAVA NA ENGLESKOM JEZIKU (09:15 - 11:00) [457] [1458]
  - BS P B

Majetić Marijana, viša laborantica [1458] · Pribanić Ivan, mag. edu. phys. et math. [457]

31.05.2027

L15 Final Lecture and Preparation for the Exam:
- P15 - VIJEĆNICA (11:15 - 13:00) [149]
  - BS

P11 Comparison of Qualitative Data:
- P09 - NASTAVA NA ENGLESKOM JEZIKU (09:00 - 10:30) [457] [1458]
  - BS P C
- P09 - NASTAVA NA ENGLESKOM JEZIKU (11:00 - 12:30) [457] [1458]
  - BS P A

P12 The Chi-squared Test:
- P09 - NASTAVA NA ENGLESKOM JEZIKU (09:00 - 10:30) [457] [1458]
  - BS P C
- P09 - NASTAVA NA ENGLESKOM JEZIKU (11:00 - 12:30) [457] [1458]
  - BS P A

Majetić Marijana, viša laborantica [1458] · Pribanić Ivan, mag. edu. phys. et math. [457] · prof. dr. sc. Žauhar Gordana, prof. fizike i kemije [149]

01.06.2027

	P13 Non-Parametric Methods: • P09 - NASTAVA NA ENGLESKOM JEZIKU (08:15 - 11:00) [457] [1458] ◦ BS P B P14 Repeating and Testing of Knowledge: • P09 - NASTAVA NA ENGLESKOM JEZIKU (08:15 - 11:00) [457] [1458] ◦ BS P B P15 Repeating and Testing of Knowledge: • P09 - NASTAVA NA ENGLESKOM JEZIKU (08:15 - 11:00) [457] [1458] ◦ BS P B
Majetić Marijana, viša laborantica [1458] · Pribanić Ivan, mag. edu. phys. et math. [457]	
02.06.2027	
	P13 Non-Parametric Methods: • P09 - NASTAVA NA ENGLESKOM JEZIKU (08:15 - 11:00) [457] [1458] ◦ BS P C • P09 - NASTAVA NA ENGLESKOM JEZIKU (13:15 - 16:00) [457] [1458] ◦ BS P A P14 Repeating and Testing of Knowledge: • P09 - NASTAVA NA ENGLESKOM JEZIKU (08:15 - 11:00) [457] [1458] ◦ BS P C • P09 - NASTAVA NA ENGLESKOM JEZIKU (13:15 - 16:00) [457] [1458] ◦ BS P A P15 Repeating and Testing of Knowledge: • P09 - NASTAVA NA ENGLESKOM JEZIKU (08:15 - 11:00) [457] [1458] ◦ BS P C • P09 - NASTAVA NA ENGLESKOM JEZIKU (13:15 - 16:00) [457] [1458] ◦ BS P A
Majetić Marijana, viša laborantica [1458] · Pribanić Ivan, mag. edu. phys. et math. [457]	

Popis predavanja, seminara i vježbi:

PREDAVANJA (TEMA)	Broj sati	Mjesto održavanja
L1 Introduction to Statistics. Statistics in Medicine. Scales of Measurement.	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
L2 Presenting of Data in Tables and Graphs. Summarizing and Displaying Numerical Data in Graphs. Empirical Distribution and Data Grouping Within Intervals of a Continuous Variable and Classes.	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
L3 Measures of central tendency - arithmetical mean, mode, median, geometrical mean and harmonic mean.	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
L4 Measures of Variation - range, mean deviation, variance, and standard deviation. Variability coefficient. Percentiles, deciles and quartiles.	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
L5 Normal Probability Distributions. The position of a result within the group (z-Scores).	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
L6 Population and the sample. Inferences about the population based on sample-results. Confidence limits.	1	P09 - NASTAVA NA ENGLESKOM JEZIKU

L7 Statistical significance of differences between the means of mutually independent samples.	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
L8 Correlation between variables.	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
L9 Regression analysis.	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
L10 Statistical significance of differences between the means of mutually dependent (correlated) samples.	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
L11 Analysis of Variance (ANOVA).	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
L12 Analysis and Comparison of Qualitative Data. Proportions. Inferences about Two Proportions: Independent Samples.	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
L13 Chi-Square Test. Mc-Nemar test (Chi-Square Test for Dependent Samples).	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
L14 Written Knowledge Assessment	1	P02
L15 Final Lecture and Preparation for the Exam	1	P15 - VIJEĆNICA

VJEŽBE (TEMA)	Broj sati	Mjesto održavanja
P1-2 Preparing and Writing Data In The Data Processing Program.	2	P09 - NASTAVA NA ENGLESKOM JEZIKU
P3 Visualising of Data. Histograms. Pie Charts. Time Series Graph.	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
P4 Descriptive Statistics. Calculation of Basic Measures of Centre and Variation of the Numerical Data. Graphic Representation of Empirical Distribution	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
P5 Testing of Data Distribution for Normality with Kolmogorov-Smirnov test	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
P6 z-Scores (determination of the position for each result in the normal distribution with z-scores)	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
P7 Comparing the means of two independent samples with Student t-test	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
P8 Comparing the means of two dependent samples	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
P9 Analisis of Variance (ANOVA)	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
P10 Correlation and regression	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
P11 Comparison of Qualitative Data	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
P12 The Chi-squared Test	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
P13 Non-Parametric Methods	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
P14 Repeating and Testing of Knowledge	1	P09 - NASTAVA NA ENGLESKOM JEZIKU
P15 Repeating and Testing of Knowledge	1	P09 - NASTAVA NA ENGLESKOM JEZIKU

ISPITNI TERMINI (završni ispit):

1.	24.06.2027.
2.	06.07.2027.
3.	08.09.2027.