



|                                                                      |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                        |
|----------------------------------------------------------------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| <b>Subject code:</b><br>STAT-114/I                                   |                | <b>Subject name:</b> Statistics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                        |
| <b>Study cycle:</b> I                                                | <b>Year:</b> I | <b>Semester:</b> II                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>ECTS credits:</b> 6 |
| <b>Status:</b> Mandatory                                             |                | <b>Contact hours:</b> 60<br>Lectures: 30<br>Exercises: 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                        |
| <b>Assigned professors and assistants:</b>                           |                | Lecturers and assistants selected for the field to which the course belongs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |
| <b>Prerequisites:</b>                                                |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                        |
| <b>Subject objectives:</b>                                           |                | Training students in methods of descriptive and inferential statistical analysis.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |
| <b>Teaching units:</b>                                               |                | <div>1. Introduction to statistical methods.</div> <div>2. Data collection and organization. Statistical series.</div> <div>3. Graphical representation of statistical series.</div> <div>4. Absolute measures of central tendency.</div> <div>5. Positional measures of central tendency.</div> <div>6. Measures of dispersion.</div> <div>7. Measures of skewness.</div> <div>8. Measures of kurtosis.</div> <div>9. Basic elements of probability theory.</div> <div>10. Probability distributions.</div> <div>11. Point and interval estimates of the mean, proportion, and standard deviation.</div> <div>12. Parametric statistical tests (Z-test, t-test).</div> <div>13. Chi-square (<math>\chi^2</math>) test.</div> <div>14. Test of independence.</div> <div>15. Linear regression model.</div> |                        |
| <b>Learning outcomes:</b>                                            |                | <b>Knowledge:</b><br>The student acquires knowledge of statistical methods.<br><b>Skills:</b><br>Data collection, analysis, and interpretation of statistical data.<br><b>Competencies:</b><br>Application of statistics in geography.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                        |
| <b>Teaching methods:</b>                                             |                | Multimedia presentation. Statistical software.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                        |
| <b>Knowledge testing methods with grading structure<sup>1</sup>:</b> |                | <div><div>Maximum Points</div><div>Minimum points</div><div>Attendance</div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                        |

<sup>1</sup> The structure of points and point criteria for each subject is determined by the Council of the organizational unit before the beginning of the academic year in which the subject is taught in accordance with Article 64, paragraph 6 of the Law on Higher Education of Sarajevo Canton



UNIVERSITY OF SARAJEVO – FACULTY OF SCIENCE  
SUBJECT DESCRIPTION

Form SP2

Page 2 of 2

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                           |  |  |       |    |    |               |  |  |            |    |    |       |  |  |       |     |    |              |                   |                     |    |               |          |   |               |         |   |          |         |   |                  |         |   |                |         |       |  |  |   |                      |    |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|--|--|-------|----|----|---------------|--|--|------------|----|----|-------|--|--|-------|-----|----|--------------|-------------------|---------------------|----|---------------|----------|---|---------------|---------|---|----------|---------|---|------------------|---------|---|----------------|---------|-------|--|--|---|----------------------|----|
|                                | <table><tr><td colspan="3">Participation on lectures</td></tr><tr><td>Tests</td><td>40</td><td>22</td></tr><tr><td colspan="3">Seminar paper</td></tr><tr><td>Final exam</td><td>60</td><td>33</td></tr><tr><td colspan="3"><hr/></td></tr><tr><td>TOTAL</td><td>100</td><td>55</td></tr></table> <p><b>Assessment:</b></p> <table><tr><td><i>Grade</i></td><td><i>ECTS grade</i></td><td><i>Points scale</i></td></tr><tr><td>10</td><td>(A) excellent</td><td>95 - 100</td></tr><tr><td>9</td><td>(B) very good</td><td>85 - 94</td></tr><tr><td>8</td><td>(C) good</td><td>75 - 84</td></tr><tr><td>7</td><td>(D) satisfactory</td><td>66 - 74</td></tr><tr><td>6</td><td>(E) sufficient</td><td>55 - 64</td></tr><tr><td colspan="3"><hr/></td></tr><tr><td>5</td><td>(F, FX) insufficient</td><td>55</td></tr></table> | Participation on lectures |  |  | Tests | 40 | 22 | Seminar paper |  |  | Final exam | 60 | 33 | <hr/> |  |  | TOTAL | 100 | 55 | <i>Grade</i> | <i>ECTS grade</i> | <i>Points scale</i> | 10 | (A) excellent | 95 - 100 | 9 | (B) very good | 85 - 94 | 8 | (C) good | 75 - 84 | 7 | (D) satisfactory | 66 - 74 | 6 | (E) sufficient | 55 - 64 | <hr/> |  |  | 5 | (F, FX) insufficient | 55 |
| Participation on lectures      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                           |  |  |       |    |    |               |  |  |            |    |    |       |  |  |       |     |    |              |                   |                     |    |               |          |   |               |         |   |          |         |   |                  |         |   |                |         |       |  |  |   |                      |    |
| Tests                          | 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 22                        |  |  |       |    |    |               |  |  |            |    |    |       |  |  |       |     |    |              |                   |                     |    |               |          |   |               |         |   |          |         |   |                  |         |   |                |         |       |  |  |   |                      |    |
| Seminar paper                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                           |  |  |       |    |    |               |  |  |            |    |    |       |  |  |       |     |    |              |                   |                     |    |               |          |   |               |         |   |          |         |   |                  |         |   |                |         |       |  |  |   |                      |    |
| Final exam                     | 60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 33                        |  |  |       |    |    |               |  |  |            |    |    |       |  |  |       |     |    |              |                   |                     |    |               |          |   |               |         |   |          |         |   |                  |         |   |                |         |       |  |  |   |                      |    |
| <hr/>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                           |  |  |       |    |    |               |  |  |            |    |    |       |  |  |       |     |    |              |                   |                     |    |               |          |   |               |         |   |          |         |   |                  |         |   |                |         |       |  |  |   |                      |    |
| TOTAL                          | 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 55                        |  |  |       |    |    |               |  |  |            |    |    |       |  |  |       |     |    |              |                   |                     |    |               |          |   |               |         |   |          |         |   |                  |         |   |                |         |       |  |  |   |                      |    |
| <i>Grade</i>                   | <i>ECTS grade</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <i>Points scale</i>       |  |  |       |    |    |               |  |  |            |    |    |       |  |  |       |     |    |              |                   |                     |    |               |          |   |               |         |   |          |         |   |                  |         |   |                |         |       |  |  |   |                      |    |
| 10                             | (A) excellent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 95 - 100                  |  |  |       |    |    |               |  |  |            |    |    |       |  |  |       |     |    |              |                   |                     |    |               |          |   |               |         |   |          |         |   |                  |         |   |                |         |       |  |  |   |                      |    |
| 9                              | (B) very good                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 85 - 94                   |  |  |       |    |    |               |  |  |            |    |    |       |  |  |       |     |    |              |                   |                     |    |               |          |   |               |         |   |          |         |   |                  |         |   |                |         |       |  |  |   |                      |    |
| 8                              | (C) good                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 75 - 84                   |  |  |       |    |    |               |  |  |            |    |    |       |  |  |       |     |    |              |                   |                     |    |               |          |   |               |         |   |          |         |   |                  |         |   |                |         |       |  |  |   |                      |    |
| 7                              | (D) satisfactory                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 66 - 74                   |  |  |       |    |    |               |  |  |            |    |    |       |  |  |       |     |    |              |                   |                     |    |               |          |   |               |         |   |          |         |   |                  |         |   |                |         |       |  |  |   |                      |    |
| 6                              | (E) sufficient                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 55 - 64                   |  |  |       |    |    |               |  |  |            |    |    |       |  |  |       |     |    |              |                   |                     |    |               |          |   |               |         |   |          |         |   |                  |         |   |                |         |       |  |  |   |                      |    |
| <hr/>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                           |  |  |       |    |    |               |  |  |            |    |    |       |  |  |       |     |    |              |                   |                     |    |               |          |   |               |         |   |          |         |   |                  |         |   |                |         |       |  |  |   |                      |    |
| 5                              | (F, FX) insufficient                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 55                        |  |  |       |    |    |               |  |  |            |    |    |       |  |  |       |     |    |              |                   |                     |    |               |          |   |               |         |   |          |         |   |                  |         |   |                |         |       |  |  |   |                      |    |
| <b>Literature<sup>2</sup>:</b> | <p><b>Mandatory:</b></p> <ul style="list-style-type: none"><li>• Šošić, I.: Primijenjena statistika, Školska knjiga, Zagreb, 2004.</li><li>• Petz, B.: Osnovne statističke metode za nematematičare, Zagreb, 1997.</li></ul> <p><b>Recommended:</b></p> <ul style="list-style-type: none"><li>• Rogerson A. Peter: Statistical methods for geography, Sage Publications UK, 2019.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                 |                           |  |  |       |    |    |               |  |  |            |    |    |       |  |  |       |     |    |              |                   |                     |    |               |          |   |               |         |   |          |         |   |                  |         |   |                |         |       |  |  |   |                      |    |

<sup>2</sup> The Senate of the higher education institution as an institution or a council of the organizational unit of the higher education institution as a public institution determines mandatory and recommended textbooks and manuals, as well as other recommended literature on the basis of which exams are prepared by a special act which is required to be published on its website before the beginning of the academic year in accordance with Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton.