**Course descriptor**

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| Title of the course | **Data analysis in sociology** |
| Title of the Academic Programme  | BA Sociology and social informatics |
| Type of the course[[1]](#footnote-1) | Core |
| Prerequisites | Algebra and analysis; methods and methodology for sociological research; Argumentation Theory and Academic Writing; Information Systems |
| ECTS workload | 4 |
| Total indicative study hours | Directed Study | Self-directed study  | Total |
| 60 | 92 | 152 |
| Course Overview | The discipline aims at laying the grounds of data analysis skills and analytics in R. The major goal of the course is to train students in basic methods of data analysis as applied to the social sciences, which includes reading and interpreting published results, as well as reporting their own analyses. The course covers quantitative data analysis from linear regression analysis with interaction effects, model comparison, basic diagnostics, to more advanced topics such as exploratory and confirmatory data analysis, and basics of structural equation modeling.  |
| Intended Learning Outcomes (ILO)[[2]](#footnote-2) | Students are expected to:* develop the general skill of creating an analytical framework of a study (goal, hypotheses, and methods)
* be able to give a meaningful interpretation of the results of data analysis.

These includes such technical skills as:* determining variables’ types and choosing applicable methods of analysis for each case;
* creating, evaluating, and comparing statistical models;
* linking theoretical assumptions to data analysis results;
* and writing a comprehensive analytical report.
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| Indicative Course Content | Linear regression (OLS); interaction effects; model diagnostics; model comparison; exploratory factor analysis; confirmatory factor analysis; structural equation modeling; lavaan; reporting analytical results; model interpretation; visualization |
| Teaching and Learning Methods | Course consists of lectures (20 hours), seminars (20 hours), and practical classes (20 hours) |
| Indicative Assessment Methods and Strategy | Students’ progress will be measured by 3 major homeworks (30% of the final grade), in-class tests (40% of the final grade), and a final home-taken exam (30% of the final grade) |
| Readings / Indicative Learning Resources[[3]](#footnote-3) | Mandatory Crawley, M. (2014). Statistics: An Introduction Using R, Second Edition. John Wiley & Sons. Available from HSE library: http://proxylibrary.hse.ru:2099/toc.aspx?bookid=72929 Crawley, M. (2013). The R Book, Second Edition. John Wiley & Sons. Available from HSE library: <http://proxylibrary.hse.ru:2099/toc.aspx?bookid=51275> Field, Andy, Miles, Jeremy and Zoë Field (2012). Discovering Statistics Using R. SAGE.Stowell, Sarah (2014). Using R for Statistics. Apress. Available from HSE library: <http://proxylibrary.hse.ru:2099/toc.aspx?bookid=66684> Optional Jaccard, J., & Jacoby, J. (2010). Theory construction and model-building skills: A practical guide for social scientists. Guilford Press.Brown, T. A., & Moore, M. T. (2012). Confirmatory factor analysis. Handbook of structural equation modeling, 361-379.Kline, R. B. (2005). Principles and Practice of Structural Equation Modeling (2nd ed.). New York: Guilford. 366 ppHooper, D., Coughlan, J., & Mullen, M. (2008). Structural equation modelling: Guidelines for determining model fit. Articles, 2.Lowry, P. B., & Gaskin, J. (2014). Partial least squares (PLS) structural equation modeling (SEM) for building and testing behavioral causal theory: When to choose it and how to use it. IEEE transactions on professional communication, 57(2), 123-146. |
| Course Instructor | Ksenia A. Tenisheva, senior lecturer, PhD in Sociology |

1. ***Notes:***

 Type of the course - core (mandatory); optional or elective. [↑](#footnote-ref-1)
2. Intended Learning Outcomes (ILO) - for the academic programmes which are exposed to international accreditation or other forms of external evaluation, the list of ILO must be complemented with “Mapping of Programme and Course/module learning outcomes”. [↑](#footnote-ref-2)
3. Indicative Learning Resources - to be filled either in the Course descriptor or in the Course Syllabus. [↑](#footnote-ref-3)