

**EC2.05**
COMPUTER-ASSISTED DATA
VISUALIZATION

COURSE INFO	
Title	Computer-Assisted Data Visualization
Code	EC2.05
Field of study	054 Sociology
Degree level	Master
Study program	Sociology (language of instruction - English)
Type	elective
Semester	4
ECTS credits	5.00
Language of instruction	English
Final control	exam
Instructor	Dr. Mykola Sydorov
SUMMARY	
The course focuses on a detailed consideration of approaches to visualization of data and findings of statistical analysis in R. Various approaches to plotting graphs and charts are considered, including work with ggplot2 library. The course has a marked practical orientation.	
PREVIOUS KNOWLEDGE	
<ol style="list-style-type: none">1. Know the methods of collection of sociological data and basic methods of analysis.2. Basic skills of social data handling3. Basic skills of work with R.	
COMPETENCES	
SC10	Ability to present research findings and prepare research reports and publications
SC12	Ability to apply contemporary methods of data processing in sociological research and use software packages for data processing and visualization of findings
COURSE LEARNING OUTCOMES	
1.1	Know basic and advanced tools of data visualization
1.2	Know the graphics packages in R
2.1	Be able to plot basic graphs and charts in R
2.2	Be able to prepare data and plot complex diagrams in R
2.3	Be able to use R Markdown to export graphics and text.



COURSE GUIDE



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EVALUATION

6 points	Completion of online course "Data analysis in R" by Stepik	
6 points	Completion of online course "Data analysis in R. Part 2" by Stepik	
18 points	Home assignments	
30 points	Two midterm tests	
40 points	Final exam Admission to exam threshold: 36 points	
Grade explication	90-100	Excellent
	75-89	Good
	60-74	Satisfactory
	0-59	Fail

COURSE STRUCTURE

CHAPTERS	WORKLOAD (in hours)		
	lectures	seminars	self-study
1. Programming in RStudio	4	4	20
2. Basic graphics in R	2	2	20
3. Graphic libraries in R	6	10	60
4. R Markdown	2	4	16

READINGS

Required

1. Michael Friendly, SCS Short Course Data Visualization in R 2018
<https://www.datavis.ca/courses/RGraphics/>
2. Rob Kabacoff Data Visualization with R 2018, <https://rkabacoff.github.io/datavis/datavis.pdf>, p 11-103
3. Maindonald John, Braun W. John Data Analysis and Graphics Using R – an Example-Based Approach 3rd Edition.- : Cambridge, 2010. – 565, p. 25-59. <https://sociology.knu.ua/uk/library/data-analysis-and-graphics-using-r-example-based-approach-3rd-edition>
4. Paul Murrell R Graphics Third Edition <https://www.stat.auckland.ac.nz/~paul/RG3e/>

Additional

1. Maindonald J.H. Using R for Data Analysis and Graphics. Introduction? Code and Commentary- Sydney, Australian National University, 2008, 96h
2. Basic and Advanced Graphics in R
http://media.news.health.ufl.edu/misc/bolt/Software_R/docs/basic-graphics-in-r.pdf



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Other sources

1. The European Social Survey (the ESS) <http://europeansocialsurvey.org/>
2. The R Graph Gallery <https://www.r-graph-gallery.com/>

