Aims of the course:
The purpose of this intensive course is to introduce someone, who has some background in quantitative methods but is new to the R (Studio) environment to the data analysis in R studio. The course assumes no previous knowledge of the R Studio environment, so we start with the basics, but very quickly work our way towards advanced data analytics with the help of the most popular analytical packages in R. At the end of the course the participants should be able to independently do the quantitative analysis on their own data.

Course syllabus:
Introduction to R and R Studio  
Objects in R and basic operations on objects  
Descriptive statistics using Stats and DescTools packages  
Transforming data using the dplyr package  
Visualization of data using the ggplot2 package  
Regression and regression diagnostics using the ggplot’s autoplot  
Generalized linear models and predictions  
Exploratory factor analysis using the psych package  
Confirmatory factor analysis with lavaan package  
Basic structural equation modeling with lavaan package

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<thead>
<tr>
<th>Date</th>
<th>Topics</th>
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<tbody>
<tr>
<td>Monday, 15 Feb</td>
<td>Introduction to R and R Studio, objects and basic operations</td>
</tr>
<tr>
<td>Tuesday, 16 Feb</td>
<td>Descriptive statistics, transformations and visualizations</td>
</tr>
<tr>
<td>Wednesday, 17 Feb</td>
<td>Regression, regression diagnostics and GLM</td>
</tr>
<tr>
<td>Thursday, 18 Feb</td>
<td>Exploratory factor analysis in psych</td>
</tr>
<tr>
<td>Friday, 19 Feb</td>
<td>CFA and SEM with lavaan</td>
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</tbody>
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Teaching methods/Online tools and software:
Lectures will be held over Zoom, the supporting materials will be available on Canvas. Links to both will be provided to registered participants before the start of the course. The course participants are asked to have, before the start of the course on of the following:
- A desktop installation of R base (get it from https://cran.r-project.org) and R Studio (get it from https://rstudio.com/products/rstudio/download/); or
- An account on the RStudio.Cloud.

**List of readings:**

- Grolemund, Garrett and Wickham, Hadley: *R for Data Science*. [https://r4ds.had.co.nz](https://r4ds.had.co.nz), 2017

**Course credit:**

A take-home exam will be provided for students needing credits from this course.

**Course leaders’ biographical note:**

**PAHOR Marko** is a researcher and professor at the University of Ljubljana, School of Economics and Business, currently serving as the vice dean for finance. He teaches courses in applied statistics and research methods at all three Bologna levels. His main research interests are in application of novel approaches in advanced research methods and data analysis, including social network analysis, agent based modeling and non-parametric statistics, to problems in business and economics. His later interests involve also applications of data analytics. He publishes with co-authors in a wide area of business and economics, including tourism economics, marketing and finance.