

Course code: R/F

Course title: **Basic programming in R**

Days: 2

Description:

Course intended for:

Any person dealing with data analysis and modeling, wishing to learn basic R language programming (different trades – banking and insurance data, marketing, as well as medical data). If you want to improve your work by automating certain processes, present your results more clearly, using transparent charts, or simply analyze data easily – this course is for you!

Course objective:

The training objectives include:

- Introducing the user to R programming environment and the necessary tools (RStudio),
- Getting familiar with basic data structures and types,
- Basic programming in R language,
- Basic issues associated with quantitative and qualitative data analysis,
- Data visualization.

Requirements:

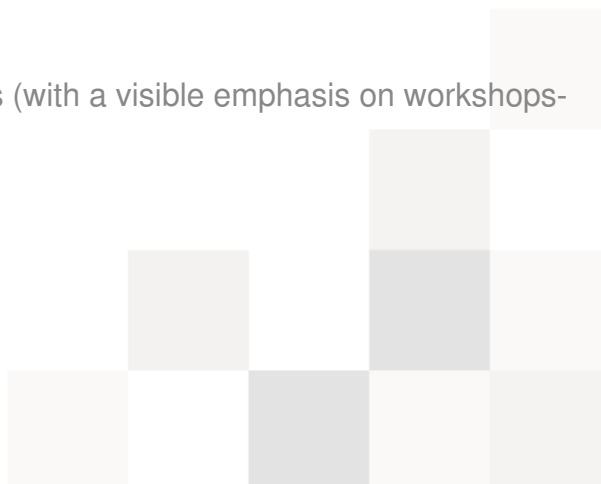
The training participant should have basic experience in programming in any language.

Course parameters:

2*8 hours (2*7 net hours) of lectures and workshops (with a visible emphasis on workshops-70%).

Group size: no more than 8-10 participants.

Course curriculum:



1. Introduction to R environment

- installation and configuration of R and IDE
- use of R
- help system
- using in-built functions

2. Basic data types and structures

- Variable types
- Objects, their basic properties (vectors, matrixes, text variables, letters and data frames) and operations on these
- Modification of signs using the "strings" package
- Date and time in R

3. Components of programming in R

- Basics of R language
- Vectorized operations as the main feature of this language
- Instructions that control the code flow
- Development of own scripts and functions

4. Basic data analysis

- Data loading from various file formats
- basic operations on data frames
- descriptive statistics

5. Graphic presentation of results

- Chart generation
- Low- and high-level graphics



- Saving charts in jpg/pdf formats

6. Selected advanced aspects of R programming

- Code profiling
- Optimization
- Parallel (multi-thread) calculations

