



Course title: **Programming in R**

ECTS credit allocation (and other scores): **4**

Semester: spring

Level of study: ISCED-7 - second-cycle programmes (EQF-7)

Branch of science: Engineering and technology

Language: English /Polish

Number of hours per semester: 30 lectures + 30 classes = 60 hours

Course coordinator/ Department and e-mail: Aleksander Denisiuk/ WMil, denisiuk@matman.uwm.edu.pl

Erasmus coordinator Anna Szczepkowska/ WMil, erasmuswmii.uwm.edu.pl

Type of classes: classes and lectures

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Substantive content

CLASSES:

- Basics of R
- Data types in R
- Univariate data analysis
- Two-dimensional data analysis
- Object-oriented programming

LECTURES:

Introduction. Data analysis

- Basics of R
- Data types
- Univariate data: statistical tests
- Bivariate data: relationship analysis
- Functions in R
- Object-oriented programming in R
- Functional programming in R

LEARNING PURPOSE

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Learning R programming language. A very useful tool for data analysis, visualization and creation simulation

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On completion of the study programme the graduate will gain:

Knowledge:

Has theoretically based, detailed knowledge related to selected issues in the field of computer science.

Skills:

Is able to select an appropriate statistical model for data analysis and implement it in practice using computer programs.

Has the ability to self-educate and acquire knowledge in the field of study and related fields, including: in order to improve professional competences.

Social Competencies:



Understands the need for lifelong learning, studying professional literature and updating knowledge, as well as motivating others to systematically develop  
Understands the importance of open standards and open technologies

**BASIC LITERATURE**

Przemysław Biecek: Przewodnik po pakiecie R. Oficyna Wydawnicza GiS, 2017.

Hadley Wickham: Advanced R Chapman & Hall/CRC The R Series, 2019.

**SUPPLEMENTARY LITERATURE**

Nathaniel D. Phillips: YaRrr! The Pirate's Guide to R, 2018.

Garrett Grolemund, Hadley Wickham: R for Data Science O'Reilly, 2017.

The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 1,14 ECTS points,

Student's independent work: 0,86 ECTS points,