UNIVERSITY OF WARMIA AND MAZURY IN OLSZTYN

Faculty of Technical Sciences

Course title: Programming Languages

ECTS credit allocation (and other scores): 3

Semester: autumn

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

Branch of science: Engineering and technology

Language: English

Number of hours per semester: 45

Course coordinator/ Department and e-mail: Wojciech Sobieski / Department of Mechanical Engineering and the Fundamentals of Machine Design / wojciech.sobieski@uwm.edu.pl.

Type of classes: classes and lectures

Substantive content

CLASSES: Learning Fortran programming in Windows and Linux Operating Systems. Data visualisation by the use of the Gnuplot environment (2D) and the VTK file format (3D).

LECTURES: Generations of programming languages. Introduction to programming. Fortran compilers. Elements of programming languages. Instructions of programming languages. Algorithms. Good practices in programming.

Learning purpose:

On completion of the study programme, the graduate will gain:

Knowledge: Basic knowledge about elements and instructions applied in the so-called imperative programming. Basic knowledge on data visualisation on 2D and 3D space.

Skills: Practical ability to use the Fortran programing language, the Gnuplot environment and the VTK file format.

Social Competencies: Implementation of IT projects in Windows and Linux operating systems based on the Free Software.

Basic literature: 1. Adams J.C., Brainerd W.S, Martin J.T., Smith B.T, Wagener J.L.: Fortran 90 Handbook. McGraw-Hill, 1992, 2. Chivers I.D., Sleightholme J.: Introduction to Programming with Fortran. Springer, 2006. 3. Brainerd W.S.: Guide to Fortran 2003 Programming. Springer, 2009.

Supplementary literature: 1. Using GNU Fortran [on-line]. URL: https://gcc.gnu.org/onlinedocs/, 2. Gnuplot Documentation [on-line]. URL: http://www.gnuplot.info/documentation.html, 3. VTK File Format [on-line], URL: https://vtk.org/wp-content/uploads/2015/04/file-formats.pdf.

The allocated number of ECTS points consists of: 3

Contact hours with an academic teacher: 45

Student's independent work: 15