

1.	Field of study	Mathematics
2.	Faculty	Faculty of Science and Technology
3.	Academic year of entry	2023/2024 (winter term)
4.	Level of qualifications/degree	first-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	General information about the module	
Module name		Introduction to Programming
Module code		W4-MT-S1-23-WPr
Number of the ECTS credits		2
Language of instruction		Polish
Purpose and description of the content of education		Celem modułu Wstęp do programowania jest nauczanie podstaw jednego wybranego języka programowania. W ramach tego modułu przewiduje się realizację następujących treści programowych: 1) Elementy programowania w języku algorytmicznym wysokiego poziomu: - środowisko programistyczne, - instrukcje warunkowe i iteracyjne, - pojęcie rekurencji, - podział programu na procedury lub funkcje, tworzące czytelną strukturę, - pojęcie i przeznaczenie zmiennej: globalnej i lokalnej, - pojęcie parametrów procedur i funkcji, mechanizm przekazywania parametrów, - operacje na plikach tekstowych. 2) Wybrane algorytmy klasyczne: - rozkład liczby na czynniki pierwsze, - algorytm Euklidesa, - znajdowanie najmniejszego lub/i największego elementu w zbiorze, - wyszukiwanie elementu w zbiorze uporządkowanym, - obliczanie wartości wielomianu - schemat Hornera, - wybrane algorytmy sortujące (przez wstawianie, przez wybieranie, bąbelkowe),
List of modules that must be completed before starting this module (if necessary)		not applicable

8.	Learning outcomes of the module			
Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)	
WPro_1	Student zna podstawy wybranego języka programowania wyższego rzędu; w programach stosuje: instrukcje wejścia/ wyjścia, wyrażenia arytmetyczne i logiczne, instrukcje warunkowe, instrukcje iteracyjne, funkcje z parametrami i bez parametrów oraz zmienne i tablice, rekurencje	KN_I_U04	5	
		KN_I_W04	4	
		K_U26	4	
		K_U27	5	

		K_W08	2
WPro_2	Student zna podstawowe algorytmy i techniki algorytmiczne; zna i omawia sytuacje, w których wykorzystuje się klasyczne algorytmy	K_U25 K_U26	3 3
WPro_3	Student posługuje się kompilatorem lub interpreterem wybranego języka programowania; wykorzystuje wybrane środowisko programistyczne do zapisywania, uruchamiania i testowania samodzielnie napisanego programu	K_U27	5
WPro_4	Student zapisuje wybrane algorytmy klasyczne w postaci iteracyjnej lub rekurencyjnej	KN_I_U04	5

9. Methods of conducting classes		
Code	Category	Name (description)
c07	Demonstration methods	Screen presentation <i>a presentation of synthetic image content using computer graphics, e.g., a series of slides or other multimedia forms, usually accompanied by a commentary; typical components of a screen presentation include text organized into bulleted points, charts, images and animations, sometimes sound effects or music; a multimedia illustration of course content presented in the form of a projected image</i>
d01	Programmed learning methods	Working with a computer <i>e.g., Webquest; implementation of educational tasks using electronic and digital devices, computer programs and Internet applications; the academic teacher acts as a consultant; students' work is carried out step by step according to the plan laid down by the person teaching the course and following his instructions, and proceeds towards producing the indicated results within the set deadline</i>
e04	Practical methods	Project scheduling <i>proceeding according to the steps proposed within a specific methodology for the completion of a task; e.g., identifying project objectives, determining the result, identifying strengths, limitations, opportunities and threats (SWOT), establishing a schedule of activities, assessing resources, establishing an implementation plan; the initial diagnosis; the reassessment of assumptions; the process of preparing the practical implementation of a project</i>
f03	Methods of self-learning	Conceptual work <i>a (mainly intellectual) activity carried out independently (or in a selected group) resulting in the creation of a concept, idea or project; creating a plan based on a vision; developing a general outline of a project; producing a simplified sketch of the variant versions of a procedure/product/work</i>

10. Forms of teaching					
Code	Name	Number of hours	Assessment of the learning outcomes of the module	Learning outcomes of the module	Methods of conducting classes
WPr_fs_01	laboratory classes	30	course work	WPro_1, WPro_2, WPro_3, WPro_4	c07, d01, e04, f03

11. The student's work, apart from participation in classes, includes in particular:			
Code	Category	Name (description)	Is it part of the BUNA?
a01	Preparation for classes	Search for materials and review activities necessary for class participation <i>reviewing literature, documentation, tools and materials as well as the specifics of the syllabus and the range of activities indicated in it as required for full participation in classes</i>	Yes
a02	Preparation for classes	Literature reading / analysis of source materials <i>reading the literature indicated in the syllabus; reviewing, organizing, analyzing and selecting source</i>	No

		<i>materials to be used in class</i>	
a03	Preparation for classes	Developing practical skills <i>activities involving the repetition, refinement and consolidation of practical skills, including those developed during previous classes or new skills necessary for the implementation of subsequent elements of the curriculum (as preparation for class participation)</i>	Yes
a04	Preparation for classes	Consulting materials complementary to those indicated in the syllabus <i>agreeing on materials complementary to those indicated in the syllabus, supporting the implementation of tasks resulting from or necessary for class participation</i>	Yes
b01	Consulting the curriculum and the organization of classes	Getting acquainted with the syllabus content <i>reading through the syllabus and getting acquainted with its content</i>	No
b02	Consulting the curriculum and the organization of classes	Verification / adjustment / discussion of syllabus provisions <i>consulting the content of the syllabus, possibly in the presence of the year tutor or members of the class group, and, if necessary, reassessing the provisions concerning special conditions for class participation, e.g., space and time requirements, technical and other requirements, including conditions for participation in classes outside the walls of the university, classes organized in blocks, organized online, etc.</i>	Yes
c02	Preparation for verification of learning outcomes	Studying the literature used in and the materials produced in class <i>exploring the studied content, inquiring, considering, assimilating, interpreting it, or organizing knowledge obtained from the literature, documentation, instructions, scenarios, etc., used in class as well as from the notes or other materials/artifacts made in class</i>	No
c03	Preparation for verification of learning outcomes	Implementation of an individual or group assignment necessary for course/phase/ examination completion <i>a set of activities aimed at performing an assigned task, to be executed out of class, as an obligatory phase/element of the verification of the learning outcomes assigned to the course</i>	Yes

Information on the details of the module implementation in a given academic year can be found in the syllabus available in the USOS system: <https://usosweb.us.edu.pl>.