# POZNAN UNIVERSITY OF TECHNOLOGY



## EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

## **COURSE DESCRIPTION CARD - SYLLABUS**

#### Course name Use of spreadsheet [S1IŚrod2>ZAK]

Course			
Field of study Environmental Engineering		Year/Semester 1/1	
Area of study (specialization) –		Profile of study general academic	c
Level of study first-cycle		Course offered in Polish	1
Form of study full-time		Requirements elective	
Number of hours			
Lecture 0	Laboratory classe 30	es	Other 0
Tutorials 0	Projects/seminars 0	5	
Number of credit points 2,00			
Coordinators dr inż. Rafał Brodziak rafal.brodziak@put.poznan.pl		Lecturers	

## **Prerequisites**

1. Knowledge: Basic knowledge of computer science in high school. 2. Skills: Operating a personal computer, including basic knowledge of office programs. 3. Social competences: Awareness of the need to constantly update and supplement knowledge and skills.

## **Course objective**

The aim of the course is to equip the student with the skills to collect, collect, store and process information and perform engineering calculations using a spreadsheet.

## Course-related learning outcomes

Knowledge:

1. The student has knowledge of the use of spreadsheets, with particular attention to their use in environmental engineering

Skills:

- 1. The student uses a spreadsheet to collect and process data and information
- 2. Student creates formulas and calculation functions in a spreadsheet

3. Student uses a spreadsheet to analyze data

4. The student integrates data from various sources, including: databases, text files Social competence

1. The student is aware of responsibility for his/her own work.

2. The student is oriented towards acquiring knowledge in the field of new possibilities of spreadsheets in the field of information processing tools

Social competences:

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## Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Two final colloquiums in the computer room, the first one in the middle of the semester, the second one during the last classes. Passing threshold: 50%. Detailed scoring criteria and grading scale are provided before colloquiums.

## **Programme content**

During classes, students work at individual computer workstations, carrying out spreadsheet tasks. The scope of topics covered includes:

- 1. Creating formulas and using basic functions
- 2. Conditional and logical functions, nesting of functions
- 3. Formatting, sorting and filtering tools, creating charts
- 4. Conditional formatting, advanced features
- 5. Pivot table, pivot chart
- 6. Interpretation of laboratory results, presentation of data
- 7. Operations on date/time data, tools for checking the correctness of entered data
- 8. Solving mathematical equations Solver add-in
- 9. Recording macros and creating macros
- 10. Create your own functions
- 11. Creating forms

## Course topics

none

## **Teaching methods**

Carrying out tasks together, solving tasks given by the teacher - practical exercises, problem solving.

## Bibliography

Basic:

- 1. Sikorski W. Excel dla studentów, WITKOM (Salma Press), 2023
- 2. Frye Curtis D., Microsoft Excel 2013 Krok po kroku, APN Promise, 2013 (ibuk PUT)
- 3. Built-in program help/documentation Microsoft Excel/LibreOffice/Google Sheets

Additional:

1. Wrotek W., VBA dla Excela 2019 PL : 234 praktyczne przykłady, Helion, 2019

2. Hong Zhou Eksploracja danych za pomocą Excela : metody uczenia maszynowego krok po kroku., Helion, 2024

- 3. Microsoft, Excel pomoc i informacje, online, https://support.office.com/pl-pl/excel
- 4. Masłowski K. Arkusze Google, Wydawnictwo Helion, 2022.

## Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	20	1,00