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

Level of study
first-cycle

Course offered in
Polish

Form of study
full-time

Requirements
elective

Number of hours

Lecture
0

Laboratory classes
30

Other
0

Tutorials
0

Projects/seminars
0

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:
-

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