1.	**Field of study**	**Mathematics**
2.	Faculty	Faculty of Science and Technology
3.	Academic year of entry	2025/2026 (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	**General Chemistry II**
Module code	W4-MT-S1-24-PCh2
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	Moduł Podstawy Chemii II ma za zadanie zapoznanie studenta z zaawansowanymi pojęciami i prawami z zakresu chemii. Student poznaje opis równowagi kwasowo-zasadowej w roztworach wodnych . Potrafi przeprowadzić odpowiednie obliczenia chemiczne oraz wykonać doświadczenia chemiczne związane z omawianymi zagadnieniami.
List of modules that must be completed before starting this module (if necessary)	[W4-MT-S1-24-PCh1] General Chemistry I

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
PCh2_01	Ma wiedzę dotyczącą równowag jonowych w wodnych roztworach elektrolitów.	KN_Ch_W01	2
PCh2_02	Wykonuje obliczenia chemiczne z zakresu równowag jonowych w wodnych roztworach elektrolitów.	KN_Ch_U01 KN_Ch_W01	2 2
PCh2_03	Zna teorie kwasów i zasad.	KN_Ch_W01	3
PCh2_04	Dostrzega rolę chemii w życiu codziennym oraz interdyscyplinarny charakter chemii jako nauki.	KN_Ch_K01	5
PCh2_05	Potrafi posługiwać się szkłem i sprzętem stosowanym w laboratorium.	KN_Ch_W03	4
PCh2_06	Potrafi zaprojektować i wykonać doświadczenia chemiczne.	KN_Ch_U06 KN_Ch_U08 KN_Ch_W03	3 4 4
PCh2_07	Ma świadomość odpowiedzialności za wspólnie realizowane zadania, związane z pracą zespołową oraz za bezpieczeństwo pracy w laboratorium chemicznym.	KN_Ch_U08	4

9.	Methods of conducting classes	
Code	**Category**	**Name (description)**
b02	Problem-solving methods	Lecture-discussion *transmission of content involving interaction with the lecture audience; discussion of lecture-related issues is one of its elements or constitutes its follow-up*
b04	Problem-solving methods	Activating method – discussion / debate *an exchange of views supported by substantive arguments leading to a clash of different views, a compromise or the identification of common positions; it proceeds according to previously agreed-upon rules regarding the time, manner and turn-taking as well as the principles of civil discourse; a discussion is not a competition but aims at finding the best solutions or presenting different points of view; its varieties include brainstorming, Oxford-style debate, panel discussion, decision tree, conference discussion; a debate is an orderly dispute between supporters and opponents of a viewpoint, usually specialists in the field or pre-selected representatives of a group dealing with a common problem*
b09	Problem-solving methods	Activating method – flipped classroom *anticipatory learning; work in class is based on previously studied material indicated by the person teaching the course; preparation outside the classroom serves the purpose of getting familiar with the issues whose knowledge is necessary for participating in the in-class discussion and the training in the related practical skills; the activity is based on the work of students under the guidance of the person teaching the course*
d02	Programmed learning methods	Working with a programmed textbook *working with a textbook containing instructional material covering part of or the entire curriculum of the module as well as a formula for studying the content; includes working with a subject textbook, an atlas, a catalogue, a problem book, etc.*
e01	Practical methods	Laboratory exercise / experiment *[also conducted as fieldwork] a method of practical application of knowledge; implemented in three stages: the recognition of a problem induced by the task content, the formulation of the problem and the attempt to solve it accompanied by the assessment of the effects; the goal is to acquire skills, abilities and habits, and to consolidate the acquired knowledge so that it becomes operational; the laboratory method assumes greater independence of learners than carrying out an experiment*

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**
PCh2_fs_01	laboratory classes	15	course work	PCh2_01, PCh2_05, PCh2_06, PCh2_07	e01
PCh2_fs_02	workshop	15	course work	PCh2_01, PCh2_02, PCh2_03, PCh2_04	b02, b04, b09, d02

11.	The student's work, apart from participation in classes, includes in particular:		
Code	**Category**	**Name (description)**	**Is it part of the BUNA?**
a02	Preparation for classes	Literature reading / analysis of source materials *reading the literature indicated in the syllabus; reviewing, organizing, analyzing and selecting source materials to be used in class*	Yes
b01	Consulting the curriculum and the organization of classes	Getting acquainted with the syllabus content *reading through the syllabus and getting acquainted with its content*	No
c02	Preparation for verification of learning outcomes	Studying the literature used in and the materials produced in class *exploring the studied content, inquiring, considering, assimilating, interpreting it, or organizing*	Yes

		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	

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.