

1.	<b>Field of study</b>	<b>Mathematics</b>
2.	Faculty	Faculty of Science and Technology
3.	Academic year of entry	2024/2025 (winter term)
4.	Level of qualifications/degree	first-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	<b>General information about the module</b>	
<b>Module name</b>		<b>GeoGebra</b>
Module code		W4-MT-S1-24-GeoG
Number of the ECTS credits		1
Language of instruction		Polish
Purpose and description of the content of education		Przedmiot ma na celu zapoznanie studentów z wybranymi możliwościami programu GeoGebra i wstępnego przygotowania ich do wykorzystania GeoGebry w pracy dydaktycznej jako narzędzia wspomagającego rozwijanie myślenia komputacyjnego w rozwiązywaniu problemów geometrycznych oraz jako narzędzia do opracowania pomocy dydaktycznych.
List of modules that must be completed before starting this module (if necessary)		not applicable

8.	<b>Learning outcomes of the module</b>			
Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)	
GeoG_01	student ma pogłębioną i rozszerzoną wiedzę w zakresie nauczanego przedmiotu (pełne pięcioletnie wykształcenie kierunkowe) i umiejętność jej popularyzacji, a także elementarizacji	KN.2023_U02 KN.2023_U07	2 2	
GeoG_02	student ma kompetencje niezbędne do ciągłego doskonalenia jakości swojej pracy, skutecznie korzystając z technologii informacyjno – komunikacyjnych	KN.2023_U02 KN_Ch_K01 KN_I_K02 KN_NDP_F_U06	2 2 2 2	
GeoG_03	student jest przygotowany do skutecznego i efektywnego realizowania zadań zawodowych (dydaktycznych, wychowawczych i opiekuńczych) wynikających z roli nauczyciela	KN.2023_KS06 KN.2023_U07 KN.2023_U18	2 2 2	

9.	<b>Methods of conducting classes</b>		
Code	Category	Name (description)	
a03	Lecture methods / expository methods	Description <i>a description of objects, phenomena, processes or people; it involves specifying the structure and characteristic features of the object, phenomenon, or process being described; it is usually accompanied by a demonstration of the described object</i>	

		<i>or by its models, drawings, tables, charts, etc.; a description may take the form of an explanation, classification, justification or comparison</i>
b02	Problem-solving methods	Lecture-discussion <i>transmission of content involving interaction with the lecture audience; discussion of lecture-related issues is one of its elements or constitutes its follow-up</i>
b08	Problem-solving methods	Activating method – peer learning <i>learning through the exchange of knowledge in a group/team/pair of students, i.e., in the so-called learning cell; a kind of mutual learning; an approach focused on student activity under the guidance of the person teaching the course; a learning situation where students with a similar level of experience learn from one another</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 own by the person teaching the course and following his instructions, and proceeds towards producing the indicated results within the set deadline</i>
d03	Programmed learning methods	Working with another teaching tool <i>e.g. using websites in any way or according to the rules set by the teacher; or making use of other subject-specific tools</i>
e01	Practical methods	Laboratory exercise / experiment <i>[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</i>
f02	Methods of self-learning	Individual work with a text <i>searching for and acquiring new information using textbooks and other written sources (including their digital versions); searching for texts, selecting fragments for analysis/interpretation, using other texts to solve a problem related to the studied issue</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
01	laboratory classes	15	course work	GeoG_01, GeoG_02, GeoG_03	a03, b02, b08, d01, d03, e01, f02

**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>	No
a02	Preparation for classes	Literature reading / analysis of source materials <i>reading the literature indicated in the syllabus; reviewing, organizing, analyzing and selecting source materials to be used in class</i>	Yes
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>	No
a04	Preparation for classes	Consulting materials complementary to those indicated in the syllabus	Yes

		<i>agreeing on materials complementary to those indicated in the syllabus, supporting the implementation of tasks resulting from or necessary for class participation</i>	
a05	Preparation for classes	<i>Production/preparation of tools, materials or documentation necessary for class participation developing, preparing and assessing the usefulness of tools and materials (e.g. aids, scenarios, research tools, equipment, etc.) to be employed in class or as an aid when preparing for classes</i>	No
b01	Consulting the curriculum and the organization of classes	<i>Getting acquainted with the syllabus content reading through the syllabus and getting acquainted with its content</i>	Yes
b02	Consulting the curriculum and the organization of classes	<i>Verification / adjustment / discussion of syllabus provisions 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
c01	Preparation for verification of learning outcomes	<i>Determining the stages of task implementation contributing to the verification of learning outcomes devising a task implementation strategy embracing the division of content, the range of activities, implementation time and/or the method(s) of obtaining the necessary materials and tools, etc.</i>	Yes
c02	Preparation for verification of learning outcomes	<i>Studying the literature used in and the materials produced in class 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>	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>.