

1.	Field of study	Pedagogy: Pre-School Education and Early School Education
2.	Faculty	Faculty of Fine Arts and Educational Science
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	long-cycle studies
5.	Degree profile	general academic
6.	Mode of study	part-time

7.	General information about the module	
Module name		Methodology of Mathematics Education in Early Childhood Education (sem. 2)
Module code		PP-E3-MEM2
Number of the ECTS credits		6
Language of instruction		Polish
Purpose and description of the content of education		Celem modułu jest uzyskanie wiedzy merytorycznej z zakresu edukacji matematycznej oraz wiedzy i umiejętności metodycznych, które umożliwią prowadzenie skutecznej edukacji matematycznej w przedszkolu i w klasach I-III. Poszerzenie wiedzy i doświadczeń osób studiujących o nowatorską metodę Milana Hejnego, której celem jest tworzenie mentalnych schematów matematycznych przez każdego ucznia w trakcie rozwiązywania odpowiednich zadań i omawiania ich rozwiązania z innymi uczniami z klasy. Efekty uczenia się będą realizowane w ramach wykładów i ćwiczeń z wykorzystaniem pracy własnej studentów.
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)	
PP-E3-MEM2_1	studentka/student zna i rozumie stadia rozwoju umysłowego w kontekście zakresu i metod edukacji matematycznej (poziom rozumowań przedoperacyjnych, operacyjnych i formalnych) oraz zagadnienia edukacji matematycznej w przedszkolu i w klasach I-III szkoły podstawowej (podstawę programową i program edukacji matematycznej); zna i rozumie rodzaje i źródła typowych błędów uczniowskich oraz zasady konstruowania sprawdzianów i oceniania; zna i rozumie znaczenie kształtowania umiejętności logicznego i krytycznego myślenia, metody pracy z zadaniami tekstowymi i znaczenia obliczeń pamięciowych oraz środki dydaktyczne w edukacji matematycznej dzieci/uczniów, a także znaczenie wykorzystania gier i zabaw matematycznych do realizacji celów dydaktycznych, konkursów i zróżnicowanych form aktywności - manipulacje, eksperymenty, proste rozumowanie, łamigłówki (E.3.W1; E.3.W2; E.3.W3; E.3.W4; E.3.W5; E.3.W6; E.3.W7; E.3.W8; E.3.W9; E.3.W10; E.3.W11; E.3.W12)	PP_W_10 PP_W_12 PP_W_15	4 4 4	
PP-E3-MEM2_2	studentka/student potrafi kształtować u uczniów pojęcie liczby, rozwijać wyobraźnię i orientację przestrzenną, wdrażać uczniów w zasady logicznego myślenia, budować sytuacje edukacyjne skłaniające uczniów do budowania hipotez i ich weryfikacji, stosować gry i inne pomoce naukowe w nauczaniu matematyki, analizować błędy popełniane przez uczniów i wyciągać z nich wnioski oraz pracować z uczniami o szczególnych uzdolnieniach matematycznych (E.3.U1; E.3.U2; E.3.U3; E.3.U4; E.3.U5; E.3.U6; E.3.U7)	PP_U_02 PP_U_04 PP_U_05 PP_U_11	3 3 3 3	
PP-E3-MEM2_3	osoby studiujące są gotowe do rozbudzania zainteresowania uczniów myśleniem matematycznym i wskazywania uczniom korzyści z uczenia się matematyki (E.3.K1; E.3.K2)	PP_K_02	3	

9. Methods of conducting classes		
Code	Category	Name (description)
a01	Lecture methods / expository methods	Formal lecture/ course-related lecture <i>a systematic course of study involving a synthetic presentation of an academic discipline; its implementation assumes a passive reception of the information provided</i>
a05	Lecture methods / expository methods	Explanation/clarification <i>explication involving the derivation of a predetermined theorem from other, already known ones, in the number of steps specified by the person teaching the course</i>
b03	Problem-solving methods	Activating method – educational games <i>learning content in the guise of a rule- and/or principle-based game; conducted in a deliberately arranged situation based on the description of relevant facts and processes; learners compete with one another within the framework of rules laid down by the academic teacher; varieties include simulation games – involving a simulation of real situations; decision games – based on the decision-making process and the recognition of the consequences of the decisions made (e.g., a decision tree); psychological games – increasing the emotional-volitional component of the participants' attitudes</i>
b04	Problem-solving methods	Activating method – discussion / debate <i>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</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>
c06	Demonstration methods	Demonstration-imitation <i>a presentation of a model way of performing specific activities accompanied by a commentary; it aims at triggering imitation activities in an individual or in a group of participants observing the activities of the person teaching the course until the right habit is formed through regular exercise; the demonstration-imitation method is combined with a physical practice of activities/behaviours</i>
e07	Practical methods	Simulation <i>an indirect method; imitating reality in order to gain experience approximating a real one; recreating a real-world situation so that its participant can acquire an experience close to the authentic one; work on "replacement" material</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
PP-E3-MEM2_fns_1	lecture	10	exam	PP-E3-MEM2_1, PP-E3-MEM2_2, PP-E3-MEM2_3	a01, a05
PP-E3-MEM2_fns	practical classes	20	course work	PP-E3-MEM2_2, PP-E3-MEM2_3	a05, b03, b04, b08, c06, e07, f03

_2

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>	No
	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 <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
	c01	Preparation for verification of learning outcomes	Determining the stages of task implementation contributing to the verification of learning outcomes <i>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	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>	No
	d01	Consulting the results of the verification of learning outcomes	Analysis of the corrective feedback provided by the academic teacher on the results of the verification of learning outcomes <i>reading through the academic teacher's comments, assessments and opinions on the implementation of the task aimed at checking the level of the achieved learning outcomes</i>	No

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>.