

1.	Field of study	Mathematics
2.	Faculty	Faculty of Science and Technology
3.	Academic year of entry	2022/2023 (winter term)
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	part-time

Code of the learning outcome of the programme	Learning outcomes The graduate:	Codes of the second-order PRK characteristics to which the learning outcome of the programme is related
KNOWLEDGE		
K_W01	knows and understands classical knowledge of basic branches of mathematics	2018_P7S_WG
K_W02	knows and understands the role and importance of the constructions of mathematical reasoning	2018_P7S_WG
K_W03	knows and understands the most important theorems and hypotheses from the main branches of mathematics	2018_P7S_WG
K_W04	knows and understands specialized issues from the selected field of mathematics	2018_P7S_WG
K_W05	knows and understands the latest discoveries and directions of development of selected mathematical theories	2018_P7S_WG
K_W06	knows and understands the basic concepts and principles of industrial property protection and copyright protection	2018_P7S_WK
W_OOD	has an in-depth knowledge of the selected scientific methods and is familiar with issues specific for the discipline of science not related to the programme	2018_P7S_WG, 2018_P7S_WK
SKILLS		
K_U01	can construct mathematical reasoning such as theorem proving or refuting hypotheses by constructing and selecting counter-examples	2018_P7S_UW
K_U02	can express mathematical content in speech and writing, in mathematical texts of different nature	2018_P7S_UW
K_U03	can verify the correctness of the inference in building formal evidence	2018_P7S_UW
K_U04	can carry out evidence in the selected field in which uses the tools from other branches of mathematics if necessary	2018_P7S_UW
K_U05	can - at an advanced level and including modern mathematics - apply and present in speech and writing the methods of at least one selected branch of mathematics	2018_P7S_UW
K_U06	can identify and develop their interests; in particular, is able to establish contact with specialists in their field, e.g. understand their lectures for young mathematicians	2018_P7S_UU
K_U07	can construct mathematical models used in specific applications of mathematics	2018_P7S_UW
K_U08	communicates in a foreign language using advanced language communication competences and has the ability to comprehensively read complex scientific texts and an in-depth ability to prepare various written works (including research) and oral presentations on specific issues in a given programme in a foreign language.	2018_P7S_UK
K_U09	can prepare presentations on advanced mathematical issues and present them to non-specialists in these issues	2018_P7S_UK
K_U10	is aware of the importance of team effort for the success of various projects, effectively works on the team, can organize the work of the team	2018_P7S_UO
U_OOD	has advanced skills to set scientific questions and analyse problems or to solve problems practically on the basis of the course content, experience and skills gained in a particular field of science unrelated to the leading discipline of the study programme	2018_P7S_UW
SOCIAL COMPETENCES		

KS_OOD	understands the need for multidisciplinary approach to problem solving, integrating knowledge or using skills from various disciplines, and practicing self-study for deepening the acquired knowledge	2018_P7S_KK
K_K01	is ready for further self-education	2018_P7S_KR
K_K02	is ready to formulate precise questions to deepen one's understanding of the subject or to find the missing elements of reasoning	2018_P7S_KK
K_K03	is willing to appreciate the importance of intellectual honesty in one's own and others' actions and acts ethically	2018_P7S_KR
K_K04	is ready to popularise selected achievements of higher mathematics	2018_P7S_KO, 2018_P7S_KR
K_K05	is prepared to show a critical attitude towards theorems, remarks and conclusions, especially those which are not supported by a logical justification	2018_P7S_KK
K_K06	is ready to form objective opinions on issues where mathematics is the language of description	2018_P7S_KK
K_K07	is ready to entrepreneurial pursuit of the tasks undertaken	2018_P7S_KO

Code of the learning outcome of the programme	Learning outcomes related to becoming a qualified teacher The graduate:	Codes of the second-order PRK characteristics to which the learning outcome of the programme is related
KNOWLEDGE		
KN_W01	knows and understands the basics of education philosophy and pedagogical axiology, the specificity of the main educational environments and the processes inside them	2018_P7S_WG, 2018_P7S_WK
KN_W02	knows and understands classical and contemporary theories of human development, education, learning and teaching or education and their application values	2018_P7S_WG
KN_W03	knows and understands the role of the teacher or educator in modelling students' attitudes and behaviours	2018_P7S_WG, 2018_P7S_WK
KN_W04	knows and understands the norms, procedures and good practices in pedagogical activities (pre-school education, teaching at primary and secondary schools, technical and vocational schools, special schools and special and integration classes, in various types of educational and continuing education centres)	2018_P7S_WG, 2018_P7S_WK
KN_W05	knows and understands the issue of inclusive education, as well as how to implement the principle of inclusion	2018_P7S_WG, 2018_P7S_WK
KN_W06	knows and understands the diversity of students' educational needs and the school's tasks resulting from them related to adapting the organisation of the teaching and education processes	2018_P7S_WG, 2018_P7S_WK
KN_W07	knows and understands the manners of designing and conducting diagnostic activities in pedagogical practice	2018_P7S_WG
KN_W08	knows and understands the structure and functions of the school education system – the objectives, legal bases, organisation and functioning of teaching, educational and care institutions, as well as alternative forms of education	2018_P7S_WK
KN_W09	knows and understands the legal bases of the school education system necessary for the proper implementation of educational activities	2018_P7S_WG, 2018_P7S_WK
KN_W10	knows and understands the rights of the child and a person with disabilities	2018_P7S_WG, 2018_P7S_WK
KN_W11	knows and understands the principles of health and safety at work in teaching, educational and care institutions and the legal responsibility of the teacher in this regard, as well as the principles of first aid	2018_P7S_WK
KN_W12	knows and understands the processes of interpersonal and social communication and their regularity and irregularity	2018_P7S_WG, 2018_P7S_WK
KN_W13	knows and understands the basics of functioning and pathologies of the speech apparatus, the principles of voice emission, the bases of functioning of the organ of vision and balance	2018_P7S_WG

KN_W14	knows and understands the content of teaching and the typical difficulties of students related to mastering the content	2018_P7S_WG
KN_W15	knows and understands teaching methods and the selection of effective teaching resources, including online resources, supporting the teaching of a subject or conducting classes with consideration given to the diverse educational needs of students	2018_P7S_WG
SKILLS		
KN_U01	can observe pedagogical situations and events, can analyse them using pedagogical and psychological knowledge and propose solutions to problems	2018_P7S_UW
KN_U02	can adequately select, create and adapt materials and resources to the diverse needs of students, including those related to information and communication technology, and working methods to design and effectively conduct pedagogical, teaching, educational and care activities on their own	2018_P7S_UW
KN_U03	can recognize students' needs, opportunities and abilities and design and conduct activities that support the integral development of students, their activity and participation in the teaching and educational processes and in social life	2018_P7S_UW
KN_U04	can design and implement curricula taking into account the diverse educational needs of students	2018_P7S_UW
KN_U05	can design and implement educational and preventive programs in the field of educational and preventive content and activities aimed at students, their parents or guardians and teachers	2018_P7S_UO, 2018_P7S_UW
KN_U06	can create educational and teaching situations that motivate students to learn and work on themselves, analyse their effectiveness and modify actions in order to achieve the desired teaching and educational outcomes	2018_P7S_UW
KN_U07	can work with students to arouse their interests and develop their talents, properly select the teaching content, tasks and forms of work within self-education, and promote students' achievements	2018_P7S_UW
KN_U08	can develop creativity and the ability to think independently and critically in students	2018_P7S_UW
KN_U09	can effectively animate and monitor the implementation of team educational activities of students	2018_P7S_UO
KN_U10	can use the assessment and feedback processes to stimulate students in their work on their own development	2018_P7S_UW
KN_U11	can monitor students' progress, activity and participation in the school social life	2018_P7S_UW
KN_U12	can work with children with special educational needs, including children with adaptive difficulties related to migration who come from culturally diverse backgrounds or with limited knowledge of Polish	2018_P7S_UK, 2018_P7S_UW
KN_U13	can responsibly organise the students' school and extra-school work, respecting their right to rest	2018_P7S_UO, 2018_P7S_UW
KN_U14	can effectively implement supportive actions for students in conscious and responsible educational and professional decision-making	2018_P7S_UW
KN_U15	can speak Polish correctly and properly and adequately to the age of students use the appropriate subject terminology	2018_P7S_UK, 2018_P7S_UW
KN_U16	can use the speech apparatus in accordance with the rules of voice emission	2018_P7S_UW
KN_U17	can provide first aid	2018_P7S_UW
KN_U18	can independently develop pedagogical knowledge and skills using a variety of sources, including foreign-language sources and technology	2018_P7S_UU
SOCIAL COMPETENCES		
KN_K01	uses universal ethical principles and standards in professional activities bearing in mind respect for each person	2018_P7S_KR
KN_K02	builds a relationship based on mutual trust between all subjects in the education and teaching processes, including parents or guardians of the student, and of incorporating them into activities conducive to educational efficiency	2018_P7S_KO
KN_K03	communicates with people from different backgrounds and emotional status, has the ability related to dialogue-based conflict solution and creating a good atmosphere for communication in the classroom and beyond	2018_P7S_KK
KN_K04	makes decisions related to the organisation of the teaching process in inclusive education	2018_P7S_KO
KN_K05	recognises the specificities of the local environment and undertakes cooperation for the benefit of students and the environment	2018_P7S_KK, 2018_P7S_KO

KN_K06	designs activities aimed at the development of school or an educational institution and is ready to stimulate improvement in the quality of the work of these institutions	2018_P7S_KO
KN_K07	is ready to work on the team, perform various roles in it and cooperate with teachers, educators, specialists, parents or guardians of students and other members of the school and local community	2018_P7S_KO