

Subject card

Subject name and code	History of Mathematics, PG_00179005						
Field of study	Mathematics						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2025/2026		
Education level	Bachelor's studies		Subject group		Optional subject group		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	4		ECTS credits		6.0		
Learning profile	academic		Assessment form		exam		
Conducting unit	Institute of Mathematics -> Faculty of Mathematics, Physics and Informatics -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Agnieszka Demby				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	30.0	0.0	0.0	0.0	60
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	60		10.0		80.0	150
Subject objectives	- Familiarization of the student with the outline of the development of mathematics from ancient times to the present, as well as a more detailed analysis of the formation of selected mathematical concepts and methods, and the process of proving selected theorems.- - Familiarization with the basic sources of information on the history of mathematics; learning to use various sources when preparing presentations.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[MATL3_U09] is able to plan how to solve a specific problem and prepare a correct record of this solution, providing strict and precise justification for the correctness of his reasoning	Is able to work independently on a specific problem and, including searching for literature and websites devoted to an issue of interest from the history of mathematics. Is able to plan work and present results in an orderly and understandable manner.	[SU2] presentation/project/paper/report [SU3] text preparation/written work
	[MATL3_U08] is able to formulate definitions and theorems in an understandable way, both orally and in writing, and present correct mathematical reasoning regarding the acquired issues	Can present in an understandable manner, in the form of a presentation and essay, the development of selected concepts and areas of mathematics, analysing the process of formulating theorems and mathematical reasoning in a historical context.	[SU2] presentation/project/paper/report [SU3] text preparation/written work [SU4] test/exam - oral or written
	[MATL3_K06] is ready to formulate opinions on basic mathematical issues	Is ready to formulate opinions on basic mathematical issues within the scope of the subject objectives and content.	[SK8] observation of student's independent or team work
	[MATL3_K04] is ready to understand and appreciate the importance of intellectual honesty in one's own and other people's actions; is willing to act ethically	Is ready to understand and appreciate the importance of intellectual honesty in one's own and others' actions; ethical conduct, also in the context of the history of mathematics.	[SK8] observation of student's independent or team work
	[MATL3_K02] is ready to precisely formulate questions to deepen his/her own understanding of a given topic or to find missing elements of reasoning	Is ready to formulate precise questions that serve to deepen one's understanding of a given topic or to find missing elements of reasoning in terms of the objectives and scope of the subject	[SK8] observation of student's independent or team work
	[MATL3_K01] is ready to accept the limitations of his/her own knowledge and understands the need for further education	Is willing to acknowledge the limitations of his/her own knowledge and is willing to pursue further education in the subject's objectives and scope	[SK8] observation of student's independent or team work
Subject contents	[MATL3_W09] knows and understands the role and importance of proof in mathematics, as well as the concept of the importance of assumptions	Knows and understands the role and importance of proof in mathematics, as well as the concept of the importance of assumptions in the context of the historical development of mathematics.	[SW1] oral statement/conversation/discussion
	1. The first traces of the use of the concepts of number and form (Paleolithic). The empirical nature of the mathematics of ancient Egypt and Babylon.		
	2. The mathematics of ancient Greece during the Hellenistic period Thales and the methodological canon of Dorian knowledge, Pythagoreans.		
	3. The mathematics of ancient Greece during the Hellenistic period - Euclid, Archimedes, and others.		
	4. Eastern mathematics: China, India, Arabs, and others. European mathematics in the Middle Ages and Renaissance; a breakthrough in the 17th century.		
	5. The development of the following fields of mathematics from the 17th to the early 20th century: mathematical analysis, probability theory, algebra, geometry (development of non-Euclidean geometry), set theory.		
	6. Hilbert's problems and their impact on the development of mathematics in the 20th century. Examples of achievements in 20th-century mathematics.		
	7. The Polish Mathematical School.		
	8. Examples of problems occupying mathematicians at the turn of the 20th and 21st centuries. Achievements and awards. Problems awaiting solutions.		

Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Exam	51.0%	40.0%
	Presentations, project	51.0%	40.0%
	Observation of student's attitude	51.0%	0.0%
	Activity	51.0%	20.0%
Recommended reading	Basic literature	1. Boyer, C. B., Merzbach, U. C.: A history of Mathematics, John Wiley and Sons, New York Chichester Brisbane Toronto Singapore, 1989. 2. Juskiewicz, A.P. (red.): Historia matematyki, PWN, Warszawa, 1975 (t.I), 1976 (t.II), 1977 (t.III). 3. Kordos, M.: Wykłady z historii matematyki, SCRIPT, Warszawa, 2005. 4. Wiśniewski, W.: Matematyka i jej historia, Wydawnictwo NOWIK, Opole, 1997. 5. Online resources on the history of mathematics, including: Mac Tutor of Mathematics, University of St Andrew, Scotland; R.Duda - Matematyka a dzieje myśli, Uniwersytet Jagielloński Bez Granic.	
	Supplementary literature	1. Bondecka-Krzykowska, I.: Przewodnik po historii matematyki, Wydawnictwo Naukowe UAM, Poznań, 2006. 2. Eves, H.: An Introduction to the History of Mathematics, The Saunders Series, Cengage Learning, 1990. 3. Ifrah, G.: Dzieje liczby, czyli historia wielkiego wynalazku, Zakład Naukowy im. Ossolińskich, Wrocław Warszawa Kraków Gdańsk Łódź, 1990. 4. Stewart, I.: Oswajanie nieskończoności. Historia matematyki, Prószyński i S-ka, Warszawa, 2010. 5. Articles from journals, e.g. np. "Wiadomości Matematyczne", "Matematyka. Czasopismo dla nauczycieli".	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Present the main achievements of 18th century mathematicians in the field of mathematical analysis.		
Work placement	Not applicable		

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