University of Gdańsk

Subject card

Subject name and code	History of Mathematics II, PG_00204256						
Field of study	Mathematics						
Date of commencement of studies	October 2026		Academic year of realisation of subject	2028/2029			
Education level	Bachelor's studies		Subject group	Obligatory subject group in the field of study Subject group related to scientific research in the field of study			
Mode of study	full-time studies		Mode of delivery	at the university			
Year of study	3		Language of instruction	Polish			
Semester of study	6		ECTS credits	2.0			
Learning profile	academic		Assessment form	credit			
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	0.0	0.0	0.0	0.0	30
	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	30		1.0		19.0	50
Subject objectives	- Presenting an outline of the development of mathematics in modern and contemporary times, including in the context of the development of civilization and other fields of science. - Analyzing the development of selected mathematical concepts and theories.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[MATL3_W06] knows and understands at an advanced level the structure of selected mathematical theories, is able to use mathematical formalism to build and analyze mathematical models	- Is able to indicate the main stages in the development of selected mathematical theories, including describing attempts to formalise these theories.	[SW4] test/exam - oral or written
[MATL3_W11] knows and understands the fundamental dilemmas of modern civilization in the context of the development of mathematics	- Is able to identify and characterize the main stages of development of selected mathematical concepts and theories since the modern era. - Is familiar with examples of the achievements of mathematicians in the 20th and 21st centuries. - Is able to perceive the development of mathematics against the background of the development of civilization and other fields of science. - Is able to identify examples of difficulties encountered by mathematicians during the development of mathematics, which occur in human personal development, even today.	[SW4] test/exam - oral or written
[MATL3_K03] is ready to perform professional roles responsibly, to compliance with the rules of professional ethics and to require the same from others, as well as to care for the achievements and traditions of professions related to the field of mathematics	- Is able to identify distinguished makers of modern and contemporary mathematics and briefly characterize their achievements. - Is aware of the achievements and traditions of professions related to mathematics.	[SK2] presentation/project/paper/ report

Subject contents

1. Development of non-Euclidean geometries.
2. Development of the following areas of mathematics from the 17th to the early 20th century: mathematical analysis, probability, and algebra.
3. The birth and development of set theory.
4. Selected founders of mathematics in the 17th, 18th, 19th, and 20th centuries and their achievements.
5. Discussions on the ordering of mathematics and the limits of acceptable proof methods.
6. Hilbert's problems and their influence on the development of mathematics in the 20th century. Examples of achievements in 20th-century mathematics.
7. The Polish School of Mathematics.
8. Examples of problems that occupied mathematicians at the turn of the 20th and 21st centuries. Achievements and awards. Problems awaiting solution.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Final assessment	51.0%	70.0%
Observation of student's attitude	51.0%	0.0%
Presentations, project	51.0%	30.0%

Recommended reading

Basic literature

1. Burton, D.M.: Historia matematyki, PWN, Warszawa, 2023.
2. Juszkiewicz, 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. Więsław, 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. Boyer, C. B., Merzbach, U. C.: A history of Mathematics, John Wiley and Sons, New York Chichester Brisbane Toronto Singapore, 1989. 3. Eves, H.: An Introduction to the History of Mathematics, The Saunders Series, Cengage Learning, 1990. 4. Semadeni, Z.: Różne oblicza matematyki, Wydawnictwo Naukowe Uniwersytetu Mikołaja Kopernika, Toruń,2023. 5. Stewart, I.: Oswajanie nieskończoności. Historia matematyki, Prószyński i S-ka, Warszawa, 2010. 6. Journal articles, e.g. "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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