

Subject code	ECTS credits
MAT3017	6

Course title in Lithuanian

MATEMATIKOS ISTORIJA

Course title in English

HISTORY OF MATHEMATICS

Short course annotation in Lithuanian (up to 500 characters)

Studentai susipažįsta su matematikos istorija nuo jos ištakų iki šių laikų. Taip pat yra apžvelgiama matematikos minties raida Lietuvoje. Moka spręsti istorinius uždavinius taip ugdydamiesi bendrąjį matematinį raštingumą.

Short course annotation in English (up to 500 characters)

Students study the history of mathematics from origins until present. Also, they overviews the development of mathematical thought in Lithuania. They train ability to apply the tools and practices solving the historical tasks from mathematics.

Prerequisites for entering the course

High school mathematics knowledge and good foundations from bachelor's study subjects.

Course aim

Main aim of the course is to provide the students with general history of mathematics, as well as development in Lithuania.

Links between course outcomes, criteria of learning achievement evaluation, study methods and methods of learning achievement assessment

No	Course outcomes	Criteria of learning achievement evaluation	Study methods	Methods of learning achievement assessment
1	Knowledge and understanding main principles of didactics via development of mathematics in history.	Student demonstrates the ability to illustrate with examples main moments of mathematics history.	Lecture, exercise classes, individual work, literature analysis, tutorials	Midterm, Test, Exam
2	Perform the ability to solve the historical exercises.	Operating on fundamental knowledge of mathematics gained on bachelor studies, student solves historical exercises of arithmetic, geometry and algebra.	Lecture, exercise classes, individual work, literature analysis, tutorials	Test, Midterm, Exam
3	Present reasoning the problems from history of mathematics as result of team work.	Working self-dependent and in team, student creates a presentation of facts from selected period of mathematics history.	Group work, reading list, literature analysis, literature review, presentation, small groups tutorial	Self-assessment, assessment by colleagues and lecturer

Links between study programme outcomes and course outcomes

Study programme outcomes	Running number of course outcome		
	1	2	3
Know and understand the main theories of mathematical didactics, consolidate and integrate the main principles in education	+	+	
Summarize and evaluate critically scientific and professional literature, as well as use various tools for collecting of information for the study process and for solving fixed practical/theoretical problems		+	+

Clearly and convincingly present problems and solutions, related to economics, energetics, biomedicine and didactics, to experts and non-experts using ground knowledge, reasoning, relevant presentation tools and methods	+		+
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Content

No	Content (topics)
1.	Origins of mathematics
2.	Egypt, Babylonian and Mesopotamian mathematics
3.	Early Greek mathematics (Euclid)
4.	Greek Mathematics (Euclid & Archimedes)
5.	Post-Euclid Greek mathematics (Classic Greek Problems)
6.	Ancient Chinese mathematics
7.	Indian and Islamic mathematics
8.	Medieval and Renaissance Europe
9.	The pre-Calculus era
10.	The discovery of Calculus
11.	Euler and the 18th century
12.	Linear Algebra, Matrices and Continuity
13.	Probability, Non-Euclidean Geometry
14.	Overview of mathematical thought in Lithuania
15.	Historical mathematical exercises with solutions in nowadays terms

Distribution of workload for students (contact and independent work hours)

Lectures	45 hours
Practical work	30 hours
Individual students work	85 hours
Total:	160 hours

Structure of cumulative score and value of its constituent parts

Mid-term exam (25 %), Presentation of literature review (25 %), Final exam (50%).

Recommended reference materials

No	Publication year	Authors of publication and title	Publishing house	Number of copies in		
				University library	Self-study rooms	Other libraries
<i>Basic materials</i>						
1.		M. du Sautoy. A Brief History of Mathematics	BBC Radio 4. Mathematics; broadcast since 2002 http://www.bbc.co.uk/programmes/b00srz5b/episodes/player http://www.bbc.co.uk/programmes/b00srz5b			
2.	2001	J. Banionis. Matematinė mintis Lietuvoje (Istorinė apžvalga iki 1832 m.)	Vilnius: VPU leidykla	5	1	
3.	2006	J. Banionis. Matematinė mintis Lietuvoje (Istorinė apžvalga 1832-1990 m.)	Vilnius: LEU leidykla	8	1	
4.	2009	V. Katz. History of Mathematics: Brief Version.	Addison Wesley			
<i>Supplementary materials</i>						

1.	2011	J. Banionis, J. Žemaitytė, Matematikos istorija: faktai ir uždaviniai	Vilnius: LEU leidykla	
2.	2012	J. Stedall. The history of mathematics: a very short introduction	Oxford: Oxford University Press	

Course programme designed by

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