SUBJECT DESCRIPTION

Course unit title	Course unit code
History and philosophy of mathematics	

Lecturer(s)	Department where the course unit is delivered
Coordinator: Raivydas Šimėnas **Other:**	Institute of Mathematics Faculty of Mathematics and Informatics Naugarduko 24, 03225 Vilnius

Cycle	Level of course unit	Type of the course unit
1st (Bachelor)		Optional

Mode of delivery	Semester or period when the course unit is delivered	Language of instruction
Face-to-face	5th semester	English

Prerequisites and corequisites	
Prerequisites: -	Corequisites (if any): -

Number of ECTS credits allocated	Student's workload	Number of contact work hours	Number of stand-alone working hours
5	130	48	82

Purpose of the course unit: programme competences to be developed
The aim of the course is to introduce students to modern views of mathematics. In the first part of the semester we will study the views of mathematics created by mathematicians themselves. One of them focuses on sets while the second - on category theory as the foundation of mathematics. During the second half of the semester we will look at the interpretations offered by the philosophers of mathematics: sui generis, modal, and mixed set theoretic-modal.

Learning outcomes of the course unit: students will be able to	Teaching and learning methods	Assessment methods
Critically appreciate various streams in the philosophy of mathematics.	Lectures, individual work with literature	Tests, paper, exam (written)
Present their arguments in writing.		

Course content: breakdown of the topics	Contact hours						Individual work: time and assignments	
	Lectures	Tutorials	Seminars	Practice	Lab	Contact hours	Individual work	Assignments
Historical context	8					8	14	Individual reading, written work
Set theory as the foundation of mathematics	8					8	14	
Category theory as the foundation of mathematics	8					8	14	
Sui generis view	8					8	14	
Modal view	6					8	14	
Set theoretic-modal view	6					8	12	
Exam						4		
Total	44					48	82	

Assessment strategy	Weight (%)	Assessment time	Assessment criteria
Weekly tests	30	Course of semester	At the beginning of each class, the students will have to briefly answer one question from the previous lecture. They will be assessed on their ability to digest the theory.
Exam (written)	40	End of semester	At the end of the semester, the students will have to take an exam. The exam will consist of several open questions. The students will have to demonstrate the ability to think philosophically.
Paper	30	End of semester	During the course of the semester, the students will have to write a paper on the topic of their choice. The instructor will assess students' ability to express themselves clearly.

Author	Year	Title	Publisher or URL
Required reading			
G. Hellman and S. Shapiro	2019	Mathematical Structuralism	Cambridge University Press
Recommended reading			
P. Benacerraf and H. Putnam	1984	Philosophy of Mathematics: Selected Readings (2nd edition)	Cambridge University Press
J. Stillwell	2010	Mathematics and Its History (3rd edition)	Springer