Subject code	ECTS credits
MAT6005	6

Course title in Lithuanian

TIRIAMASIS DARBAS NR.3

Course title in English

RESEARCH PROJECT NO.3

Short course annotation in Lithuanian (up to 500 characters)

Tiriamojo darbo temos siūlomos fakulteto dėstytojų ir derinamos su magistrantais atsižvelgiant į jų interesus bei patirtį. Atliekant šį tiriamąjį darbą, kuris dažniausiai būna Tiriamųjų darbų Nr.1 ir Nr.2 tęsinys, magistrantai jau specializuojasi konkrečioje matematikos šakoje, sprendžia konkrečią problemą, vysto matematinę kultūrą, gilina matematikos žinias. Tiriamųjų darbų temos turi atitikti magistrantūros darbams keliamus reikalavimus, spręsti aktualią grynosios matematikos ar matematinių metodų pritaikymo problemą. Semestro pabaigoje studentas pristato tiriamojo darbo rezultatus, pateikdamas ataskaitą. Darbo rezultatai pristatomi viešame gynime.

Short course annotation in English (up to 500 characters)

Research project No.3 is prepared in the third semester of master studies, resuming research work, started in the Research Projects No.1 and No.2. Students solve theoretical and practical mathematical problem, which is formulated by the supervisor of research project. At the end of semester, the research results are presented in the form of a report, which shall contain the principal parts: introduction, theoretical part, analytical part, main conclusions and results, list of literature. The report is presented in the public defence.

Prerequisites for entering the course

Study subjects of Mathematics bachelor study programme, study subjects of first and second semesters of Applied Mathematics master study programme

Course aim

The goal of the research project is to acquaint with various mathematical problems for different applied areas, applying the theoretical knowledge acquired in the studying process, to learn to process and to present the collected facts.

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.	Ability to analyse nature, social, economic problems and to construct mathematical models of these problems.	Student demonstrates the knowledge of particular mathematical problem, demonstrates the ability to formulate task, present solution process, justify received results	Individual work, consulting	Project report and presentation, assessed by a qualification commission, formed by the Dean of the Faculty.
2.	Ability to apply information technologies for solution of mathematical problems.			
3.	Ability to analyse data of the particular problem.			
4.	Ability clear and understandable present scientific materials and arguments			
5.	Ability to make conclusions on theoretical or practical mathematical problem.			

Links between study programme outcomes and course outcomes

Study programme outcomes	Running number of course outcome				
	1	2	3	4	5

1. Deepen and expand general knowledge of mathematics and apply it in a new non-standard environment	+		+		
4. Identify, select and understand the state-of-the-art literature of mathematics and apply the gained knowledge to specific scientific and practical tasks	+		+		
5. Develop mathematical models integrating the knowledge from various fields and different mathematical modelling techniques, and analyse the modelling results assessing the model adequacy and accuracy	+	+	+		
6. Organize the process of research projects			+	+	+
7. Analyse, understand and use mathematical methods	+	+	+		+
8. Transform heuristic arguments into mathematical language; prove the propositions by using known patterns	+		+	+	+
11. Convey mathematical information to specialists of different fields orally and/or in written form, critically evaluate it				+	+
12. Make decisions independently		+	+		+
13. Take moral responsibility for the results of work				+	+

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

Consultations	**10 hours**
Individual students work	**148 hours**
Project presentation	**2 hours**
Total:	**160 hours**

Structure of cumulative score and value of its constituent parts

Contents of the project report – 70%, public defence of the project report – 30 %.

Recommended reference materials

Depends on the content of the project.

Course programme designed by

Prof. dr. Ričardas Krikštolaitis