| Subject code | ECTS credits |
|---|---|
| | 30 |

**Course title in Lithuanian**

| MAGISTRO DARBAS |
|---|

**Course title in English**

| MASTER THESIS |
|---|

**Short course annotation in Lithuanian (up to 500 characters)**

| Taikomosios matematikos magistro baigiamasis darbas – tai darbas, sprendžiant pasirinktą problemą iš matematikos mokslinių bei taikomųjų tyrimų srities, dažniausiai pratęsiant Tiriamųjų darbų Nr. 1, 2 ir 3 metu atliktus tyrimus. Atliktas darbas apiforminamas pateikiant darbo aprašą, kuris apima problemos analizę, įvertina pasirinktos problemos ištyrimo laipsnį, remiantis literatūros šaltiniais, pagrindžia pasirinktos problemos tyrimo logiką bei metodus, išdėsto autoriaus pasiūlytus būdus nagrinėjamai problemai spręsti, aprašo praktinius/eksperimentinius/teorinius tyrimus, atsako į klausimą, ar nagrinėjamai problemai pasiūlytas sprendimas pasiteisino, išdėsto darbo išvadas |
|---|

**Short course annotation in English (up to 500 characters)**

| Master Thesis is a research work on a selected problem from scientific and applied research area of mathematics, usually extending and finalizing the research of the Research Projects No. 1, 2, and 3. Research activities and corresponding results are presented in the Master Thesis document, containing the following parts: 1) problem analysis; 2) literature survey; 3) analytical part; 4) results of the theoretical and experimental investigation, justifying the proposed solution; 5) main conclusions and results; 6) list of literature. Master Thesis is defended in qualification committee. |
|---|

**Prerequisites for entering the course**

| Study subjects of first, second and third semesters of Applied Mathematics master study programme |
|---|

**Course aim**

| Master Thesis should show student's ability to apply critical thinking skills in formulating, analysing and solving mathematical-related problems using state-of-the-art mathematics theories and methods as well as the ability to conduct individual research. |
|---|

**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 acquire different theoretical and practical mathematical 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 analyse nature, social, economic problems and to construct mathematical models of these problems. | | | |
| 3. | Ability to apply information technologies for solution of mathematical problems. | | | |
| 4. | Ability to analyse data of the particular problem. | | | |
| 5. | Ability clear and understandable present scientific materials and arguments | | | |
| 6. | 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 | 6 |
| 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 | | + | | + | + | + |
| 9. Critically evaluate personal results and professional experience and other persons' activity | | + | + | | + | |
| 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 | 30 hours |
|---|---|
| Individual students work | 760 hours |
| Project presentation | 10 hours |
| Total: | 800 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 research.

**Course programme designed by**

Prof. dr. Ričardas Krikštolaitis