APPROVED BY
Order No V-813 of the Minister of Education and Science of the Republic of Lithuania of 23 July 2015

DESCRIPTOR OF THE STUDY FIELD OF MATHEMATICS

CHAPTER I

GENERAL PROVISIONS

1. The Descriptor of the study field of Mathematics (hereinafter referred to as the "Descriptor") should govern the special requirements applied to the study programmes of the study field of Mathematics.

2. The Descriptor has been prepared in accordance with the Law on Higher Education and Research of the Republic of Lithuania taking into account Resolution No 535 of the Government of the Republic of Lithuania of 4 May 2010 "On the Approval of the Descriptor of the Lithuanian Qualifications Framework", Order No V-2212 of the Minister of Education and Science of the Republic of Lithuania of 21 November 2011 "On the Approval of the Descriptor of Study Cycles", Order No V-501 of the Minister of Education and Science of the Republic of Lithuania of 9 April 2010 "On the Approval of the Descriptor of General Requirements for Degree-Awarding First Cycle and Integrated Study Programmes", Order No V-826 of the Minister of Education and Science of the Republic of Lithuania of 3 June 2010 "On the Approval of the Descriptor of General Requirements for Master's Study Programmes", Order No V-2463 of the Minister of Education and Science of the Republic of Lithuania of 15 December 2011 "On the Approval of Recommendations for Developing the Descriptor of a Study Field or Study Fields".

3. Study programmes of the study field of Mathematics may be carried out only in universities. Descriptor should be applied to the first and second cycle university studies.

4. This Descriptor aims to:

4.1. Assist higher education institutions in designing, developing and improving the study programmes of the study field of Mathematics;

4.2. Give guidelines to experts who assess study programmes of the study field of Mathematics;

4.3. Inform the academic community, employers and other stakeholders about the knowledge, skills and their levels acquired during studies of the study field of Mathematics.

5. The Descriptor is applied to the following branches of the study field of Mathematics: applied mathematics, mathematical methods; numerical analysis; mathematical modelling; technomathematics; mathematical finance and actuarial mathematics.

6. Upon completion of the studies of the study field of Mathematics, the higher education qualification should be acquired:

6.1. After completing the first cycle university studies, a Bachelor's degree in mathematics or applied mathematics, mathematical modelling, technomathematics, mathematical finance and actuarial mathematics is acquired by issuing a Bachelor's diploma by the university;

6.2. After completing the second-cycle university studies, a Bachelor's degree in mathematics or applied mathematics, mathematical modelling, technomathematics, mathematical finance and actuarial mathematics is acquired by issuing a Master's diploma by the university;

7. The issued Bachelor's or Master's degree diploma should reflect the level of learning outcomes.

8. Studies of the study field of Mathematics may be organised on a full-time and/or part-time basis.

9. Study programme of the study field of Mathematics of the first cycle studies may be designed to:

9.1. Studies of the study field of Mathematics, which lead to a qualification degree of the study field of Mathematics, and study subjects set by the higher education institution and selected by the student for deeper specialisation of the same study field (branch);

9.2. Studies of the study field of Mathematics, which lead to a qualification degree of the study field of Mathematics, and module (modules) or subject (subjects) of other field (branch) set by the higher education institution and selected by the student;

9.3. Studies of the study field of Mathematics, which lead to a qualification degree of the study field of Mathematics, and study subjects over the necessary scope of general university subjects (world view and broad erudition subjects that are not directly related to the main field of study content) set by the higher education institution and selected by the student;

9.4. Two-field studies – the main study field of Mathematics and minor study field studies set by the higher education institution and selected by the student. Upon completion of the study programme, a double degree of the main study field of Mathematics and a minor study field (branch) is acquired. The minimum scope of these studies is 240 credits;

9.5. Studies of Mathematics – studies of the study field of Mathematics and, in the cases established by the Teacher Training Regulation, to modules (subjects) of pedagogic studies that are equal to minor studies and selected by the student. Upon completion of the study programme, the bachelor's degree of the study field of Mathematics is acquired as a major, and subject pedagogy as a minor field, and a teacher's qualification. The minimum scope of these studies is 240 credits.

10. Study field of Mathematics may be a minor field in the first cycle study programmes.

11. General requirements for admission:

11.1. Persons with at least secondary education are enrolled in first cycle study programmes of study field of Mathematics in an enrolment contest, taking into account their learning outcomes, entrance examinations or other criteria established by the higher education institution. Higher education institutions establish a list of competitive subjects by fields of study and principles for the award of contest points, the minimum entrance grade and other criteria, having received the assessment of student representation, and publish them no later than 2 years preceding the start of the school year;

11.2. It is recommended to enrol the persons with higher education qualification and having completed a study programme of the study field of Mathematics or having achieved such learning outcomes during the first cycle studies that ensure their readiness to participate in the Master's study programmes of the study field of Mathematics to the second-cycle studies of the study field of Mathematics, following the procedure established by the higher education institution. Their readiness for studies may be achieved by attending supplementary studies.

12. The main aims of study programmes of the study field of Mathematics of all study cycles are as follows:

12.1. To develop mathematical skills – the ability to understand, assess and use mathematics in such situations and context in which it plays or could play a certain role;

12.2. To develop an abstract logical thinking and broad erudition;

12.3. To develop the need to take interest in mathematics and the need to promote mathematical literacy;

12.4. To develop the ability to maintain and enhance professional competence through life-long learning.

13. The granted Bachelor's degree corresponds to the sixth level of the Lithuanian Qualifications Framework and the European Qualifications Framework for Lifelong Learning, as well as the first cycle of the Framework for Qualifications of the European Higher Education Area, whereas the Master's degree corresponds to the seventh level of the Lithuanian Qualifications Framework and the European Qualifications Framework for Lifelong Learning, as well as the second cycle of the Framework for Qualifications of the European Higher Education Area.

CHAPTER II

CONCEPT AND SCOPE OF THE STUDY FIELD

14. Mathematics is intellectual activity, which analyses abstract concepts such as numbers, magnitides, shapes, discreteness, continuity, and infinity.

15. Mathematical studies involve getting acquainted with mathematical activity and its results. Mathematical activity should be seen as the cognition of the most general regularities and analysis of abstract concepts, which help us understand the real world. Its results are both mathematical concepts and methods of their analysis (axioms, definitions, logic evidence, etc.). Entirety of the results of mathematics consists of its areas (analysis, algebra, geometry, etc.). Differences in study programmes of mathematics depend on the areas of research towards which the study programme is oriented – pure or applied mathematics.

16. Studies of the study field of Mathematics can be focused on the following specialisations:

16.1. Pure mathematics is the cognition of the most general regularities and analysis of abstract concepts and their relationships;

16.2. Applied mathematics is the development of mathematical principles designed to tackle problems of applied activities;

16.3. Mathematical methods are analysis and development of specific means to accurately tackle mathematical problems;

16.4. Numerical analysis is analysis and development of specific methods to tackle mathematical problems approximately using computers;

16.5. Mathematical modelling is the development of models of real-world events and processes, in order to understand and adapt them to practical use;

16.6. Technomathematics is the application of mathematical principles to tackle problems of engineering, technological and industrial systems; the design, analysis, construction and implementation of relevant computation algorithms and systems;

16.7. Mathematical finance and actuarial mathematics is the modelling of financial and actuarial systems and processes and their analysis using mathematical tools;

16.8. Operational research is the development of complex mathematical and simulation models designed to tackle problems of operating systems related to human activities, and their application when searching optimal solutions.

17. Mathematics is the basis not only for natural and technological sciences (physics, chemistry, biology, information technology, engineering, etc.), but also for those intellectual activities that require abstract thinking and formation of models (economics, insurance, finance, sociology, linguistics and others). Knowledge of mathematics gives a deeper understanding of the philosophy and psychology, and the abstractness of its objects develops human imagination and perception of harmony. Individual subjects of mathematics are included in many study programmes of other study fields.

18. Successful studies in mathematics at the university are necessary for the following skills:

18.1. Understanding of basic concepts of elementary mathematics and their interrelationships, the ability to illustrate concepts by example;

18.2. Ability to freely use the basic operations of set theory;

18.3. Understanding of mathematical justification of natural and real numbers;

18.4. Ability to use elementary tools of logic in mathematical language.

19. During the first year of study it is recommended to teach basic courses of mathematics: mathematical analysis (theory of functions of single and multiple variables), linear algebra and geometry.

20. Basic knowledge from various branches of the study field of mathematics are provided when teaching, for example, the following subjects: algebraic structure, theory of algorithms and mathematical logics, differential and analytical geometry, differential and integral equations, theory of complex variable functions and harmonic analysis, history of mathematics and philosophy of mathematics, numerical methods, calculus of variations and mathematical modelling, probability theory and mathematical statistics, topology, measure theory, functional analysis, etc.

21. Branches (specialisations) of study programme may be formed by combining several research areas of mathematics, such as combinatorics, number theory, algebra, algebraic geometry, measure and integral, theory of functions of real and complex variables, theory of differential equations, potential theory, functional analysis, integral equations, dynamical systems, optimization theory, geometry, differential geometry, topology, probability theory and stochastic analysis, statistics, mechanics, numerical methods, etc.

22. Mathematics research includes searching for new mathematical knowledge – analysis of new mathematical structures and establishment new relations between objects in mathematics.

23. Persons who have completed studies of the study field of Mathematics, can work in different areas, which require formal logical thinking and analytical approach to problem solving. Possible types of professions after completion of the studies of the study field of Mathematics are: actuary; analyst of operations research; mathematician (pure mathematics); mathematician (applied mathematics); mathematician; mathematics teacher at the higher education institution; mathematics teacher, etc.

CHAPTER III

GENERAL AND SPECIAL LEARNING OUTCOMES

24. This chapter outlines the underlying learning outcomes of the study field of Mathematics, but they do not specify the detailed curriculum of a study programme or study subjects.

25. Abilities acquired by students of the study programme of the study field of Mathematics:

25.1. Understanding of mathematical proof;

25.2. Mathematical modelling of phenomena, processes and situations;

25.3. Solving problems using mathematical tools.

26. After completing the first cycle studies of the study field of Mathematics, the following learning outcomes should be achieved:

26.1. Knowledge and its application:

26.1.1. Knowledge of basic fields of mathematics (mathematical analysis, linear algebra, analytical geometry, numerical methods), their understanding and ability to use them to solve corresponding mathematical problems;

26.1.2. Knowledge and understanding of basic mathematical concepts, principles, theories and results;

26.1.3. Knowledge of the chosen mathematical branch and ability to apply it to tackle practical and/or theoretical problems;

26.1.4. Knowledge of mathematical software and ability to apply it.

26.2. Research skills:

26.2.1. Ability to find and analyse literature, collect data from the given sources, process and analyse the information received;

26.2.2. Ability to analyse the structure and properties of mathematical models, as well as to assess their usability;

26.2.3. Ability to identify, formulate, specify and solve both theoretical and practical mathematical problems of different kinds;

26.2.4. Ability to create mathematical models in the specified context, including the selection of means, work with the model, publication of results, etc.

26.3. Special abilities:

26.3.1. Ability to think mathematically – to follow and assess mathematical reasoning, understand mathematical proof, to distinguish the various types of mathematical statements, etc.;

26.3.2. Ability to manage mathematical symbols and formalisms: to understand mathematical language, roles of mathematical symbols, read mathematical texts, etc.;

26.3.3. Ability to understand mathematical statements and proofs, to construct proof of new statements related to the known statements;

26.3.4. Ability to communicate in mathematical language.

26.4. Social abilities:

26.4.1. Ability to critically assess one’s own and others’ performance, and to take responsibility;

26.4.2. Ability to work individually and in a group;

26.4.3. Ability to present mathematical statements and their proof, tasks and their solutions to professionals and the general audience clearly and accurately as well as orally and in written form;

26.4.4. Ability to comply with the norms of academic ethics.

26.5. Personal abilities:

26.5.1. Ability to plan and organise work and learning on one’s own, organise professional activities, plan time and resources, apply the acquired knowledge and skills, changing the activity and its nature; to be aware of the moral responsibility for the impact of activity and its results on social, economic and cultural development, welfare and the environment;

26.5.2. Ability to analyse educational mathematical literature, critically assess one’s own profession, knowledge and values, reflect one’s own development as a professional, being aware of the importance of lifelong learning.

27. After completing the second-cycle studies of the study field of Mathematics, the following learning outcomes should be achieved:

27.1. Knowledge and its application:

27.1.1. Deepened and broadened knowledge of mathematics and abilities to use and apply such knowledge in a new non-standard setting;

27.1.2. Knowledge of modern research methods and ability to take advantage of them;

27.1.3. Knowledge and understanding of the latest results and trends of the selected branch of mathematics.

27.2. Research skills:

27.2.1. Ability to find, select and understand the scientific mathematical literature and apply the research knowledge to solve specific scientific and practical tasks;

27.2.2. Ability to create mathematical models by analysing real-world processes;

27.2.3. Ability to integrate knowledge from different fields and various methods of mathematical modelling;

27.2.4. Ability to analyse the modelling results in seeking optimal solutions, assessing the adequacy and accuracy of the model, and, if necessary, to improve models;

27.2.5. Ability to initiate, organise, implement and deliver research projects, interpret the obtained results, to formulate and justify conclusions, and to assess the prepared reports and documents.

27.3. Special abilities:

27.3.1. Ability to abstract information from different areas, and describe it in mathematical language;

27.3.2. Ability to transform heuristic arguments into mathematical proofs; to prove statements, similar to the known;

27.3.3. Ability to analyse, understand and Master new mathematical methods.

27.4. Social abilities:

27.4.1. Ability to critically assess one's own and others' performance and professional experience;

27.4.2. Ability to work individually and in an interdisciplinary team, to generate ideas, integrate knowledge and skills;

27.4.3. Ability to convey mathematical information to professionals of one's own and other fields and to other persons, as well as to critically assess it.

27.5. Personal abilities:

27.5.1. Ability to make one's own decisions;

27.5.2. Ability to take moral responsibility for the job's results.

CHAPTER IV

TEACHING, LEARNING AND ASSESSMENT

28. Teaching, learning and assessment activities should be organised in such a way that students can achieve the intended learning outcomes.

29. Teaching should be based on both fundamental knowledge of mathematics and science achievement. Methods of teaching should reveal the importance of logical thinking, mathematical literacy, provide knowledge necessary to achieve the study programme aims and help develop the abilities provided in the study programme.

30. Subjects of mathematics are arranged keeping their consistency and following the compatibility of learning outcomes to be achieved.

31. Content of teaching should be constantly reviewed and refined by integrating new knowledge and teaching methods in the study process in accordance with the concept of lifelong learning.

32. The same methods may be applied in different cycle studies, but the content and complexity degree of given tasks should vary, as well as the level of the student's self-sufficiency.

33. The following study methods and forms may be applied: various types of lectures, practicals, solving problems on one's own, laboratory classes, projects, final thesis (Bachelor's or Master's), etc.

34. A higher education institution, by setting the assessment procedure, should give a teacher possibility to choose assessment methods. It may be a test, written and/or oral examination, individual or group oral questioning, testing, practical training report and its defence, project defence, final thesis defence, etc.

35. Strategy for the assessment of learning outcomes should be documented. At the beginning of the semester a lecturer should inform students about the assessment procedure of learning outcomes, by providing them with a detailed study subject programme, its aims, the intended learning outcomes, a concrete assessment structure of learning outcomes of the taught subject, assessment criteria, etc.

36. Assessment procedure, assessment system and assessment criteria should be based on the principles of validity, reliability, clarity, usefulness, and impartiality.

37. Assessment of learning outcomes should ensure an objective determination of the level of achievement of learning outcomes.

38. Students should be able to provide feedback to the teacher in order to improve study process efficiency and improve the quality of teaching, as well as discuss with teachers various aspects of studies.

CHAPTER V

REQUIREMENTS FOR THE IMPLEMENTATION OF STUDY PROGRAMMES

39. Study programme may be implemented by qualified and competent lecturers carrying out fundamental research or experimental development research, who are familiar with graduates' future job conditions and are able to help students prepare themselves for their future professional or academic activities.

40. Lecturers' competencies and qualifications are assessed subject to their scientific, educational and practical experience, based on criteria set by the university.

41. Universities establish qualification requirements for lecturers.

42. In the study programme of the study field of Mathematics of the first cycle studies, at least half of study field subjects should be taught by persons who have a doctoral degree.

43. In the study programme of the study field of Mathematics of the second-cycle studies, at least 80 percent of all subjects should be taught by persons who have a doctoral degree; among them at least 60 percent of field subject teachers' scientific activities should comply with their taught subjects. At least 20 percent of the scope of study field subjects (contact hours) in the second-cycle studies should be taught by teachers holding professor's position.

44. Successful implementation of the study programme should require the following material base:

44.1. Auditoriums should meet hygiene and safety requirements; they should be equipped with modern audio and video equipment, as well as demonstration tools;

44.2. The number of computers with mathematics software to be used should meet the requirements of the study programme;

44.3. For each subject the number of textbooks in the library or handouts should meet the students' needs;

44.4. The library should be equipped with a sufficient number of computers, appropriate software and information equipment (literary directories, search engines, Internet connection, an interface with a larger library databases, access to databases of full-text scientific publications and other sources of information at the disposal of universities).

45. The first cycle study programme of the study field of Mathematics should be completed by the assessment of graduate's competency during the defence of a Bachelor's final thesis (project), which receives at least 12 credits. If a double Bachelor's degree is provided, final theses (projects) of the main study field (branch) and the minor study field (branch) should be provided, which can be integrated into one, by attributing them at least 15 study credits in total.

46. Bachelor's final thesis (project) should be based on individual applied or theoretical research, application of knowledge or prepared as a project revealing the abilities conforming to programme aims. With the final thesis (project), a graduate, completing the first cycle studies, should demonstrate the level of knowledge and understanding, the ability to discuss the chosen topic, to present the works previously performed by other individuals in the chosen field, to self-study, and to clearly formulate conclusion and recommendations.

47. At least 30 credits should be given to the preparation and defence of the final Master's thesis (project). Master's final thesis should be based on individual theoretical or applied research, application of knowledge or prepared as a project revealing the abilities conforming to programme aims. With the final thesis (project), a graduate, completing the second -cycle studies, should demonstrate the level of knowledge and understanding, the ability to discuss the chosen topic, to assess the works previously performed by other individuals in the study field of Mathematics, to self-study and carry out mathematical research, to provide interpretations of research results, to describe the research work, to formulate research conclusions and recommendations clearly and reasonably according to the requirements approved by the university.

48. Final thesis (project) Evaluation Commission should consist of competent mathematical scientists. Defence Commissions should include social partners. It is recommended that the Master's thesis defence Commission include at least one member from other academic and research institutions.

49. An integral mandatory part of the study field of Mathematics of the first cycle studies should be practical training. The scope of professional practical training of the study programmes of university first cycle studies should be no less than 15 credits.

50. Practical training should be organised in accordance with the descriptor for professional practical training organisation developed by the higher education institution, which should define the requirements for practical training, specific practical training tasks, intended outcomes and the system for the assessment of learning outcomes, support for students during the practical training, as well as the criteria used to recognise and assess the level of skills acquired by a student during the practical training.

51. No less than 15 percent of practical training time should be allocated to individual and/or group consultations given by a lecturer appointed by the university.

52. Supervisors of practical training in an institution or organisation should be involved in the process of improvement of the content of practical training tasks and organisation of practical training. A higher education institution should organise training for supervisors in institutions.

53. Mathematical practical training tasks are chosen according to the direction of professional development, linking students' academic preparation with the competence of practical training.

54. Higher education institution should offer the students a list of possible practical training institutions, in relation to which cooperation contracts are signed. Practical training institutions may be chosen by a student himself/herself in agreement with the higher education institution. After selecting the practical training institution, a tripartite agreement is signed between the student, higher education institution and practical training institution.

CHAPTER VI

DESCRIPTOR OF LEVELS OF ACHIEVED LEARNING OUTCOMES

55. Learning outcomes achieved by the students of the first cycle studies of the study field of Mathematics are comprised of three achievement levels: excellent, standard and threshold.

55.1. Excellent achievement level:

55.1.1. Perception of mathematics, its evaluation and practical use are excellent and exceed the information given during the studies; knowledge and practical skills are quickly adjusted to new situations; mathematical text is properly understood; new knowledge is acquired quickly and confidently;

55.1.2. Mathematical reasoning is logical, error-free; correct and original conclusions are made; generalisations are presented and ability to use them is shown; excellent use of analogies and observed connections; seeking the optimal way of reasoning;

55.1.3. Actions related to the indicated concepts and methods are carried out fluently, software designed for mathematical tasks is used successfully in unfamiliar and original situations, complex and non-standard tasks are solved, the acquired theoretical knowledge is creatively used, selecting statistical methods and tools to tackle the applied tasks;

55.1.4. Communication in mathematical language is good, essential information is properly conveyed; elements of mathematical language (concepts, symbols, formulas, etc.) are used accurately;

55.1.5. Excellent general abilities are demonstrated; ability to work o one's own, if necessary, seeking advice of experienced professionals;

55.1.6. Graduates may continue their studies in the Master's programmes; a graduate, having acquired professional experience, becomes a great practitioner; career prospects cover research and significant managerial responsibility; a graduate is recommended to continue academic or begin a professional career.

55.2. Standard achievement level:

55.2.1. Mathematics perception, its evaluation and practical use are good, but more limited to what is provided in the study programme;

55.2.2. Mathematical reasoning is logical, free from material errors; generalisations are made and ability to use them is shown; ability to use analogies and observed connections; good understanding of mathematical texts; correct conclusions are made; seeking an appropriate way of reasoning;

55.2.3. Ability to use mathematical software in not quite strictly defined situations, to apply the acquired theoretical knowledge to solve problems of moderate difficulty and select mathematical methods and tools for tackling applied problems, as well as to properly interpret the meaning of received results;

55.2.4. Communication in mathematical language is good, information is properly conveyed; elements of mathematical language (concepts, symbols, formulas, etc.) are used appropriately;

55.2.5. General abilities are good; ability to work on one's own with supplementary material; ability to work professionally to some degree, with support provided if necessary;

55.2.6. A graduate, having acquired professional experience, may become a great practitioner capable to show good expert knowledge; a graduate is recommended to continue academic or begin a professional career.

55.3. Threshold achievement level:

55.3.1. The grasp of basic mathematical concepts and methods included in the study programme. Ability to use mathematical software satisfactorily in familiar and well-defined situations. Available knowledge is used to solve problems in accordance with the given examples, ability to act by analogy; ability to make simple generalizations; substance of mathematical texts is perceived;

55.3.2. Mathematical reasoning is made without major errors; conclusions are correct in principle; communication in mathematical language is average; basically, the information is properly conveyed;

55.3.3. Basic elements of mathematical language (concepts, symbols, formulas, etc.) are used appropriately;

55.3.4. General abilities are good. A graduate, having acquired professional experience, may become a great practitioner capable to show good expert knowledge;

55.3.5. A graduate of this level will be able to take positions of technical or general management (assistant's). Having gained relevant professional experience, he/she can become a good practitioner of a specific field, where knowledge and understanding of the methods is critical, but there is no need to regularly apply fundamental knowledge. A graduate can work professionally, if he/she is guided and support is provided, if necessary. A graduate is recommended to begin a professional career;

56. Learning outcomes achieved by the students of the second-cycle studies of the study field of Mathematics are comprised of three achievement levels: excellent, standard and threshold.

56.1. Excellent achievement level:

56.1.1. Demonstration of exceptional knowledge of contemporary mathematical methods included in the study programme and mastered individually as well as excellent understanding of mathematical concepts. He/she has excellent knowledge of separate mathematical fields;

56.1.2. Ability to solve theoretical and practical tasks creatively in interdisciplinary fields of Mathematics, using the said methods and any appropriate software. Mathematical problems are discovered in interdisciplinary areas; arising tasks are formulated abstractly searching for solutions;

56.1.3. Ability to interpret the results logically and make reasoned conclusions. A graduate pays particular attention to individual and supplementary studies;

56.1.4. Ability to work individually in a team of professionals and an interdisciplinary team of one's own field, organise professional activities, conduct scientific research and convey knowledge to others.

56.2. Standard achievement level:

56.2.1. A lot of knowledge is possessed and good understanding of contemporary mathematical methods and their concepts is maintained. A graduate has deep knowledge of specific mathematical fields. Ability to select, adapt and compare mathematical methods used to solve practical problems;

56.2.2. Ability to use modern software adapted for mathematical computations;

56.2.3. Ability to individually find and assimilate the necessary mathematical methods and computer software. The obtained results are interpreted logically. A graduate is able to compare several ways for solving the same problem and find an optimal solution according to the selected criteria;

56.2.4. Ability to formulate practical tasks abstractly in mathematical language and deal with them independently; also, where find other professionals to perform tasks if appropriate;

56.2.5. Ability to work on one's own in a team of professionals and interdisciplinary team of one's own field and organise professional activities.

56.3. Threshold achievement level:

56.3.1. Sufficient understanding of contemporary mathematical methods and their concepts included in the study programme and possession of some deeper knowledge of certain fields of Mathematics;

56.3.2. By using the suggested methods, problems of modern mathematics are properly dealt with, analysing clearly defined problems of other fields of science. Application of suitable computer software;

56.3.3. Ability to clearly and logically interpret the results and present conclusions;

56.3.4. Ability to work professionally, if necessary, receiving advice of experienced professionals.

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