# COURSE INFORMATION LETTER

**University:** P. J. Šafárik University in Košice

**Faculty:** Faculty of Science

| **Course ID:** ÚMV/ rALGa/12 | **Course name:** Algebra I |
|---|---|

**Course type, scope and the method:**
**Course type:** Lecture
**Recommended course-load (hours):**
**Per week: Per study period:** 36s
**Course method:** present

**Number of credits:** 11

**Recommended semester/trimester of the course:** 1.

**Course level:** N

**Prerequisities:**

**Conditions for course completion:**

**Learning outcomes:**

**Brief outline of the course:**

**Recommended literature:**

**Course language:**

**Notes:**

**Course assessment**
Total number of assessed students: 30

| A | B | C | D | E | FX |
|---|---|---|---|---|---|
| 6.67 | 6.67 | 16.67 | 20.0 | 30.0 | 20.0 |

**Provides:** prof. RNDr. Danica Studenovská, CSc.

**Date of last modification:** 03.05.2015

**Approved:** prof. RNDr. Jozef Doboš, CSc.

## COURSE INFORMATION LETTER

**University:** P. J. Šafárik University in Košice

**Faculty:** Faculty of Science

| **Course ID:** ÚMV/ rALGb/12 | **Course name:** Algebra II |
|---|---|

**Course type, scope and the method:**
**Course type:** Lecture
**Recommended course-load (hours):**
**Per week: Per study period:** 24s
**Course method:** present

**Number of credits:** 8

**Recommended semester/trimester of the course:** 2.

**Course level:** N

**Prerequisities:** ÚMV/rALGa/12

**Conditions for course completion:**

**Learning outcomes:**

**Brief outline of the course:**

**Recommended literature:**

**Course language:**

**Notes:**

**Course assessment**
Total number of assessed students: 21

| A | B | C | D | E | FX |
|---|---|---|---|---|---|
| 23.81 | 14.29 | 38.1 | 0.0 | 19.05 | 4.76 |

**Provides:** doc. RNDr. Miroslav Ploščica, CSc.

**Date of last modification:** 03.05.2015

**Approved:** prof. RNDr. Jozef Doboš, CSc.

## COURSE INFORMATION LETTER

| | |
|---|---|
| **University:** P. J. Šafárik University in Košice | |
| **Faculty:** Faculty of Science | |
| **Course ID:** ÚMV/ rAIM/12 | **Course name:** Application of ICT into mathematics teaching |
| **Course type, scope and the method:**<br>**Course type:** Practice<br>**Recommended course-load (hours):**<br>**Per week: Per study period:** 24s<br>**Course method:** present | |
| **Number of credits:** 7 | |
| **Recommended semester/trimester of the course:** 5. | |
| **Course level:** N | |
| **Prerequisities:** | |
| **Conditions for course completion:**<br>two tests elaborated on the computer, solving problems from worksheets final project | |
| **Learning outcomes:**<br>To learn students standard work procedures with the basic types of mathematical softvare systems and to provide examples and ideas on the possibility of using these software systems in mathematics teaching. To develop the knowledge and skills of students to use investigation and modelling in the digital environment for mathematical problems solving. Develop creative and evaluation abilities of students allow to prepare mathematics lessons with effective and meaningful use of modern technologies. | |
| **Brief outline of the course:**<br>Possibilities of using numerical and graphical tools of spreadsheet to solve mathematical problems. Use of dynamic geometry systems in solving geometry problems, examples of their use in the implementation of constructivist approaches to mathematics teaching. Mathematical modelling and solving of problems in a CAS environment. The use of modern IT for active acquisition of knowledge in mathematics teaching. | |
| **Recommended literature:**<br>M. Černochová a kol.: Využití počítače při vyučování, Portál, 1998.<br>S. Lukáč: Multimédiá a počítačom podporované učenie sa v matematike, PF UPJŠ Košice 2001.<br>J. Vaníček: Počítačové kognitivní technologie ve výuce geometrie. Univerzita Karlova v Praze, 2009.<br>Časopisy MFI, MIF a Obzory matematiky, fyziky a informatiky. | |
| **Course language:**<br>Slovak | |
| **Notes:** | |

**Course assessment**
Total number of assessed students: 10

| A | B | C | D | E | FX |
|---|---|---|---|---|---|
| 20.0 | 40.0 | 10.0 | 20.0 | 10.0 | 0.0 |

**Provides:** doc. RNDr. Stanislav Lukáč, PhD.

**Date of last modification:** 03.05.2015

**Approved:** prof. RNDr. Jozef Doboš, CSc.

## COURSE INFORMATION LETTER

**University:** P. J. Šafárik University in Košice

**Faculty:** Faculty of Science

| **Course ID:** ÚMV/ rDDMa/12 | **Course name:** Didactics of mathematics I |
|---|---|

**Course type, scope and the method:**
**Course type:** Lecture
**Recommended course-load (hours):**
**Per week: Per study period:** 24s
**Course method:** present

**Number of credits:** 6

**Recommended semester/trimester of the course:** 3.

**Course level:** N

**Prerequisities:**

**Conditions for course completion:**
Seminar paper - 20% of assessment
Continuous assessment - 20%
Exam - 80%

**Learning outcomes:**
Master the basic principles and methods of teaching mathematics in secondary and primary schools.

**Brief outline of the course:**
Subject didactics of mathematics, the development of mathematics and mathematics education
The objectives and tasks of teaching mathematics
Planning in mathematics
Logical and didactic curriculum analysis
Determining the learning objectives
Didactic principles, methods and forms of teaching mathematics
Assessment of learning outcomes, creation of didactic tests
Math problems, creating systems tasks
Assessment in mathematics, educational tests
The content and scope of the concept, sorting and classification of terms
Statements, statements of operations
Definitions, requirements definition
Induction and deduction, analogy
Mathematical sentences
Proofs of mathematical theorems

**Recommended literature:**
[1] M.Hejný a kol.: Teorie vyučovania matematiky, SPN Blava 1989,
[2] L.Frantíková,K.Hončarivová,O.Kopanev: Didaktika matematiky, UPJŠ 1982
[3] R.Fischer,G.Malle: Človek a matematika, SPN Bratislava 1992
[4] Polya, G.: How to solve it, Princeton University Press, 1957.

**Course language:**

**Notes:**

**Course assessment**
Total number of assessed students: 19

| A | B | C | D | E | FX |
|---|---|---|---|---|---|
| 0.0 | 26.32 | 52.63 | 21.05 | 0.0 | 0.0 |

**Provides:** doc. RNDr. Dušan Šveda, CSc.

**Date of last modification:** 03.05.2015

**Approved:** prof. RNDr. Jozef Doboš, CSc.

## COURSE INFORMATION LETTER

**University:** P. J. Šafárik University in Košice

**Faculty:** Faculty of Science

| **Course ID:** ÚMV/ rDDMb/12 | **Course name:** Didactics of mathematics II |
|---|---|

**Course type, scope and the method:**
**Course type:** Lecture
**Recommended course-load (hours):**
**Per week: Per study period:** 24s
**Course method:** present

**Number of credits:** 8

**Recommended semester/trimester of the course:** 4.

**Course level:** N

**Prerequisities:** ÚMV/rDDMa/12

**Conditions for course completion:**
Seminar paper - 20% of assessment
Continuous assessment - 20%
Exam - 80%

**Learning outcomes:**
Acquire knowledge about different ways of teaching particular subjects of mathematics education.

**Brief outline of the course:**
Developing the concept of number in school mathematics
Session, views and functions in school mathematics
Geometry in the school mathematics
Combinatorics, probability and statistics in school mathematics

**Recommended literature:**
[1] M.Hejný a kol.: Teorie vyučovania matematiky, SPN Blava 1989,
[2] L.Frantíková,K.Hončarivová,O.Kopanev: Didaktika matematiky, UPJŠ 1982
[3] R.Fischer,G.Malle: Človek a matematika, SPN Bratislava 1992
[4] Polya, G.: How to solve it, Princeton University Press, 1957.
[5] Hejný, M., Kuřina, F.: Dítě, škola a matematika: Konstruktivistické přístupy k vyučování. Portál, Praha 2001.

**Course language:**

**Notes:**

**Course assessment**
Total number of assessed students: 19

| A | B | C | D | E | FX |
|---|---|---|---|---|---|
| 5.26 | 15.79 | 36.84 | 21.05 | 21.05 | 0.0 |

**Provides:** doc. RNDr. Dušan Šveda, CSc.

**Date of last modification:** 03.05.2015

| |
|---|
| **Approved:** prof. RNDr. Jozef Doboš, CSc. |

## COURSE INFORMATION LETTER

**University:** P. J. Šafárik University in Košice

**Faculty:** Faculty of Science

| **Course ID:** ÚMV/ rDSM/12 | **Course name:** Discrete mathematics |
|---|---|

**Course type, scope and the method:**
**Course type:** Lecture
**Recommended course-load (hours):**
**Per week: Per study period:** 24s
**Course method:** present

**Number of credits:** 8

**Recommended semester/trimester of the course:** 1.

**Course level:** N

**Prerequisities:**

**Conditions for course completion:**
Based on written exam.

**Learning outcomes:**
To provide a knowledge on basics of discrete mathematics and its applications in computer science.

**Brief outline of the course:**
Mathematical induction and pigeonhole principle. Sum and product rule. Permutations, k-permutations, combinations. Selections with repetitions. The inclusion/exclusion principle. Recurrence equations. The introduction to graph theory. Graph searching algorithms. Trees. Eulerian and hamiltonian graphs. Planar graphs. Graph colourings.

**Recommended literature:**
S. Jendroľ, P. Mihók: Diskrétna matematika I., UPJŠ Košice 1992
J. Nešetřil, J. Matoušek: Kapitoly z diskrétni matematiky
E. R. Scheinerman: Mathematics - a discrete introduction, Brooks/Cole Publ. Comp. Pacific Grove 2000.
R.P. Grimaldi: Discrete and Computational Mathematics, Addison-Wesley Publ. Co.-Rending 1994

**Course language:**

**Notes:**

**Course assessment**
Total number of assessed students: 28

| A | B | C | D | E | FX |
|---|---|---|---|---|---|
| 0.0 | 0.0 | 7.14 | 28.57 | 46.43 | 17.86 |

**Provides:** doc. RNDr. Jaroslav Ivančo, CSc.

**Date of last modification:** 03.05.2015

**Approved:** prof. RNDr. Jozef Doboš, CSc.

## COURSE INFORMATION LETTER

**University:** P. J. Šafárik University in Košice

**Faculty:** Faculty of Science

| **Course ID:** ÚMV/ rGEOa/12 | **Course name:** Geometry I |
|---|---|

**Course type, scope and the method:**
**Course type:** Lecture
**Recommended course-load (hours):**
**Per week: Per study period:** 24s
**Course method:** present

**Number of credits:** 8

**Recommended semester/trimester of the course:** 2.

**Course level:** N

**Prerequisities:**

**Conditions for course completion:**

**Learning outcomes:**

**Brief outline of the course:**

**Recommended literature:**

**Course language:**

**Notes:**

**Course assessment**
Total number of assessed students: 20

| A | B | C | D | E | FX |
|---|---|---|---|---|---|
| 0.0 | 0.0 | 35.0 | 20.0 | 45.0 | 0.0 |

**Provides:** doc. RNDr. Jaroslav Ivančo, CSc.

**Date of last modification:** 03.05.2015

**Approved:** prof. RNDr. Jozef Doboš, CSc.

## COURSE INFORMATION LETTER

**University:** P. J. Šafárik University in Košice

**Faculty:** Faculty of Science

| **Course ID:** ÚMV/ rGEOb/12 | **Course name:** Geometry II |
|---|---|

**Course type, scope and the method:**
**Course type:** Lecture
**Recommended course-load (hours):**
**Per week: Per study period:** 24s
**Course method:** present

**Number of credits:** 8

**Recommended semester/trimester of the course:** 3.

**Course level:** N

**Prerequisities:** ÚMV/rGEOa/12

**Conditions for course completion:**

**Learning outcomes:**

**Brief outline of the course:**

**Recommended literature:**

**Course language:**

**Notes:**

**Course assessment**
Total number of assessed students: 20

| A | B | C | D | E | FX |
|---|---|---|---|---|---|
| 5.0 | 0.0 | 10.0 | 35.0 | 45.0 | 5.0 |

**Provides:** RNDr. Igor Fabrici, Dr. rer. nat.

**Date of last modification:** 03.05.2015

**Approved:** prof. RNDr. Jozef Doboš, CSc.

## COURSE INFORMATION LETTER

**University:** P. J. Šafárik University in Košice

**Faculty:** Faculty of Science

| **Course ID:** ÚMV/ rLTM/12 | **Course name:** Logic and set theory |
|---|---|

**Course type, scope and the method:**
**Course type:** Lecture
**Recommended course-load (hours):**
**Per week: Per study period:** 24s
**Course method:** present

**Number of credits:** 8

**Recommended semester/trimester of the course:** 3.

**Course level:** N

**Prerequisities:**

**Conditions for course completion:**

**Learning outcomes:**

**Brief outline of the course:**

**Recommended literature:**

**Course language:**

**Notes:**

**Course assessment**
Total number of assessed students: 20

| A | B | C | D | E | FX |
|---|---|---|---|---|---|
| 0.0 | 20.0 | 15.0 | 15.0 | 50.0 | 0.0 |

**Provides:** doc. RNDr. Jaroslav Ivančo, CSc.

**Date of last modification:** 03.05.2015

**Approved:** prof. RNDr. Jozef Doboš, CSc.

## COURSE INFORMATION LETTER

**University:** P. J. Šafárik University in Košice

**Faculty:** Faculty of Science

| **Course ID:** ÚMV/ rMANa/12 | **Course name:** Mathematical analysis I |
|---|---|

**Course type, scope and the method:**
**Course type:** Lecture
**Recommended course-load (hours):**
**Per week: Per study period:** 36s
**Course method:** present

**Number of credits:** 11

**Recommended semester/trimester of the course:** 1.

**Course level:** N

**Prerequisities:**

**Conditions for course completion:**
Written exam.

**Learning outcomes:**
The course provides an introductory knowledge about real numbers, sequences and functions of real variable, and a development of certain calculation skills in the field.

**Brief outline of the course:**
1. Basics of mathematical logic and notations.
2. Sets of real numbers - axioms of real numbers, properties of subsets of reals.
3. Real functions - basic properties (monotone, bounded, even/odd, inverse.
4. Infinite sequences - operations, boundedness, monotonicity, convergence.
5. Limit and continuity of real functions, properties of continuous functions on the interval, elementary functions.

**Recommended literature:**
1. Brannan, D.: A First Course in Mathematical Analysis, Cambridge University Press, Cambridge 2006.
2. Bruckner, A. M., Bruckner J. B., Thomson, B. S.: Real Analysis, Second Edition, ClassicalRealAnalysis.com, 2008.
3. Zorich, V. A.: Mathematical Analysis I, Springer-Verlag 2002.

**Course language:**

**Notes:**

**Course assessment**
Total number of assessed students: 26

| A | B | C | D | E | FX |
|---|---|---|---|---|---|
| 0.0 | 7.69 | 19.23 | 23.08 | 30.77 | 19.23 |

**Provides:** doc. RNDr. Dušan Šveda, CSc.

**Date of last modification:** 03.05.2015

| **Approved:** prof. RNDr. Jozef Doboš, CSc. |
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## COURSE INFORMATION LETTER

**University:** P. J. Šafárik University in Košice

**Faculty:** Faculty of Science

| **Course ID:** ÚMV/ rMANb/12 | **Course name:** Mathematical analysis II |
|---|---|

**Course type, scope and the method:**
**Course type:** Lecture
**Recommended course-load (hours):**
**Per week: Per study period:** 36s
**Course method:** present

**Number of credits:** 11

**Recommended semester/trimester of the course:** 2.

**Course level:** N

**Prerequisities:** ÚMV/rMANa/12

**Conditions for course completion:**
Written exam.

**Learning outcomes:**
To obtain basic knowledge in differential and integral calculus of functions of one real variable.

**Brief outline of the course:**
1. Derivative, differentiability and properties of differentiable functions.
2. Calculus of derivatives and its usage for functions behavior.
3. L'Hospital's rules, Taylor's polynomial.
4. Primitive function, indefinite integral.
5. Basic methods of computing indefinite integrals.
6. Rieman's definite integral, its properties and methods of computation.

**Recommended literature:**
1. Brannan, D.: A First Course in Mathematical Analysis, Cambridge University Press, Cambridge 2006.
2. Bruckner, A. M., Bruckner J. B., Thomson, B. S.: Real Analysis, Second Edition, ClassicalRealAnalysis.com, 2008.
3. Zorich, V. A.: Mathematical Analysis I, Springer-Verlag 2002.

**Course language:**

**Notes:**

**Course assessment**
Total number of assessed students: 20

| A | B | C | D | E | FX |
|---|---|---|---|---|---|
| 5.0 | 15.0 | 10.0 | 15.0 | 55.0 | 0.0 |

**Provides:** RNDr. Ingrid Semanišinová, PhD.

**Date of last modification:** 03.05.2015

**Approved:** prof. RNDr. Jozef Doboš, CSc.

## COURSE INFORMATION LETTER

**University:** P. J. Šafárik University in Košice

**Faculty:** Faculty of Science

| **Course ID:** ÚMV/ rMRUa/12 | **Course name:** Mathematical problem solving strategies I |
|---|---|

**Course type, scope and the method:**
**Course type:** Practice
**Recommended course-load (hours):**
**Per week: Per study period:** 12s
**Course method:** present

**Number of credits:** 3

**Recommended semester/trimester of the course:** 2.

**Course level:** N

**Prerequisities:**

**Conditions for course completion:**
continuous assessment and final test

**Learning outcomes:**
To deepen and systematize the knowledge and skills of students to use appropriate methods for solving of tasks at primary and secondary school and to characterize the specific problems of mathematics teaching at primary and secondary school.

**Brief outline of the course:**
Basic knowledge of school mathematics, various methods of problem solving, the problems from mathematical competitions for the topics Equations and inequalities and their systems, Elementary functions, Financial mathematics.

**Recommended literature:**
[1] Hejný, M. a kol., Teória vyučovania matematiky 2. SPN, Bratislava 1989.
[2] Kopka, J., Hrozny problémů ve školské matematice, Univerzita J. E. Purkyně, Ústí nad Labem 1999.
[3] Učebnice a zbierky úloh z matematiky ZŠ a SŠ.

**Course language:**
Slovak

**Notes:**

**Course assessment**
Total number of assessed students: 21

| A | B | C | D | E | FX |
|---|---|---|---|---|---|
| 19.05 | 19.05 | 28.57 | 9.52 | 23.81 | 0.0 |

**Provides:** doc. RNDr. Stanislav Lukáč, PhD.

**Date of last modification:** 03.05.2015

**Approved:** prof. RNDr. Jozef Doboš, CSc.

## COURSE INFORMATION LETTER

**University:** P. J. Šafárik University in Košice

**Faculty:** Faculty of Science

| **Course ID:** ÚMV/ rMRUb/12 | **Course name:** Mathematical problem solving strategies II |
|---|---|

**Course type, scope and the method:**
**Course type:** Practice
**Recommended course-load (hours):**
**Per week: Per study period:** 12s
**Course method:** present

**Number of credits:** 3

**Recommended semester/trimester of the course:** 4.

**Course level:** N

**Prerequisities:**

**Conditions for course completion:**

**Learning outcomes:**

**Brief outline of the course:**

**Recommended literature:**

**Course language:**

**Notes:**

**Course assessment**
Total number of assessed students: 19

| A | B | C | D | E | FX |
|---|---|---|---|---|---|
| 47.37 | 10.53 | 15.79 | 15.79 | 10.53 | 0.0 |

**Provides:** RNDr. Ingrid Semanišinová, PhD.

**Date of last modification:** 03.05.2015

**Approved:** prof. RNDr. Jozef Doboš, CSc.

## COURSE INFORMATION LETTER

**University:** P. J. Šafárik University in Košice

**Faculty:** Faculty of Science

| **Course ID:** ÚMV/ rMRUc/12 | **Course name:** Mathematical problem solving strategies III |
|---|---|

**Course type, scope and the method:**
**Course type:** Practice
**Recommended course-load (hours):**
**Per week: Per study period:** 12s
**Course method:** present

**Number of credits:** 3

**Recommended semester/trimester of the course:** 5.

**Course level:** N

**Prerequisities:**

**Conditions for course completion:**

**Learning outcomes:**

**Brief outline of the course:**

**Recommended literature:**

**Course language:**

**Notes:**

**Course assessment**
Total number of assessed students: 10

| A | B | C | D | E | FX |
|---|---|---|---|---|---|
| 10.0 | 30.0 | 10.0 | 50.0 | 0.0 | 0.0 |

**Provides:** doc. RNDr. Matúš Harminc, CSc.

**Date of last modification:**

**Approved:** prof. RNDr. Jozef Doboš, CSc.

## COURSE INFORMATION LETTER

**University:** P. J. Šafárik University in Košice

**Faculty:** Faculty of Science

| **Course ID:** ÚMV/ rMDM/12 | **Course name:** Mathematics and didactics of mathematics |
|---|---|

**Course type, scope and the method:**
**Course type:**
**Recommended course-load (hours):**
**Per week: Per study period:**
**Course method:** present

**Number of credits:** 0

**Recommended semester/trimester of the course:**

**Course level:** N

**Prerequisities:** ÚMV/rMANb/12 and ÚMV/rGEOb/12 and ÚMV/rALGb/12 and ÚMV/ rDDMb/12

**Conditions for course completion:**

**Learning outcomes:**

**Brief outline of the course:**

**Recommended literature:**

**Course language:**

**Notes:**

**Course assessment**
Total number of assessed students: 50

| A | B | C | D | E | FX |
|---|---|---|---|---|---|
| 10.0 | 16.0 | 34.0 | 32.0 | 8.0 | 0.0 |

**Provides:**

**Date of last modification:** 03.05.2015

**Approved:** prof. RNDr. Jozef Doboš, CSc.

## COURSE INFORMATION LETTER

| | |
|---|---|
| **University:** P. J. Šafárik University in Košice | |
| **Faculty:** Faculty of Science | |
| **Course ID:** ÚMV/ rTCS/12 | **Course name:** Number theory |

**Course type, scope and the method:**
**Course type:** Lecture
**Recommended course-load (hours):**
**Per week: Per study period:** 24s
**Course method:** present

**Number of credits:** 8

**Recommended semester/trimester of the course:** 3.

**Course level:** N

**Prerequisities:**

**Conditions for course completion:**

**Learning outcomes:**

**Brief outline of the course:**

**Recommended literature:**

**Course language:**

**Notes:**

**Course assessment**
Total number of assessed students: 0

| A | B | C | D | E | FX |
|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

**Provides:** doc. RNDr. Matúš Harminc, CSc.

**Date of last modification:** 03.05.2015

**Approved:** prof. RNDr. Jozef Doboš, CSc.

## COURSE INFORMATION LETTER

**University:** P. J. Šafárik University in Košice

**Faculty:** Faculty of Science

| **Course ID:** ÚMV/ rPST/12 | **Course name:** Probability and statistics |
|---|---|

**Course type, scope and the method:**
**Course type:** Lecture
**Recommended course-load (hours):**
**Per week: Per study period:** 36s
**Course method:** present

**Number of credits:** 11

**Recommended semester/trimester of the course:** 4.

**Course level:** N

**Prerequisities:** ÚMV/rMANb/12

**Conditions for course completion:**

**Learning outcomes:**

**Brief outline of the course:**

**Recommended literature:**

**Course language:**

**Notes:**

**Course assessment**
Total number of assessed students: 19

| A | B | C | D | E | FX |
|---|---|---|---|---|---|
| 10.53 | 10.53 | 31.58 | 26.32 | 21.05 | 0.0 |

**Provides:** RNDr. Daniel Klein, PhD.

**Date of last modification:** 03.05.2015

**Approved:** prof. RNDr. Jozef Doboš, CSc.

## COURSE INFORMATION LETTER

**University:** P. J. Šafárik University in Košice

**Faculty:** Faculty of Science

| **Course ID:** ÚMV/ rVKG/12 | **Course name:** Selected topics on geometry |
|---|---|

**Course type, scope and the method:**
**Course type:** Lecture
**Recommended course-load (hours):**
**Per week: Per study period:** 24s
**Course method:** present

**Number of credits:** 8

**Recommended semester/trimester of the course:** 4.

**Course level:** N

**Prerequisities:**

**Conditions for course completion:**

**Learning outcomes:**

**Brief outline of the course:**

**Recommended literature:**

**Course language:**

**Notes:**

**Course assessment**
Total number of assessed students: 19

| A | B | C | D | E | FX |
|---|---|---|---|---|---|
| 10.53 | 26.32 | 36.84 | 5.26 | 21.05 | 0.0 |

**Provides:** RNDr. Igor Fabrici, Dr. rer. nat.

**Date of last modification:** 03.05.2015

**Approved:** prof. RNDr. Jozef Doboš, CSc.

## COURSE INFORMATION LETTER

**University:** P. J. Šafárik University in Košice

**Faculty:** Faculty of Science

| **Course ID:** ÚMV/ rVMA/12 | **Course name:** Selected topics on mathematical analysis |
|---|---|

**Course type, scope and the method:**
**Course type:** Lecture
**Recommended course-load (hours):**
**Per week: Per study period:** 24s
**Course method:** present

**Number of credits:** 8

**Recommended semester/trimester of the course:** 4.

**Course level:** N

**Prerequisities:**

**Conditions for course completion:**
The final test from which it is necessary to obtain at least 40% of the total score.

**Learning outcomes:**
Extend, complement the knowledge gained in the basic course of mathematical analysis of knowledge in the areas of series and the theory of ordinary differential equations.

**Brief outline of the course:**
1. Series - sum, tests for convergence, absolute and relative convergence, operation with series.
2. Ordinary differential equations - basic concepts, the first order equations (separable, homogeneous, linear, Bernoulli), linear homogeneneous and nonhomogeneous equations of the second order (also with constant coefficients).

**Recommended literature:**
1. L. Kluvánek, I. Mišík, M. Švec: Matematika I, II, SVTL, Bratislava, 1959 (in Slovak).
2. Z. Došlá, R. Plch, P. Sojka: Nekonečné rady s programem Maple, vysokoškolský učebný text, Masarykova univerzita v Brne, Brno, 2002. (in Czech).
3. J. Eliaš, J. Horváth, J. Kajan: Zbierka úloh z vyššej matematiky 3, 4, Alfa, Bratislava, 1971 (in Slovak).
4. D. Brannan: A First Course in Mathematical Analysis, Cambridge University Press, Cambridge, 2006.
5. J. C. Robinson: An introduction to ordinary differential equations, Cambridge University Press, Cambridge, 2004.
6. A. Banner: The calculus lifesaver, Princeton university press, Princeton, 2007.
7. S. J. Farlow: An introduction to differential equations and their applications, Dover Publications, New York, 2006.

**Course language:**
slovak

**Notes:**

**Course assessment**
Total number of assessed students: 0

| A | B | C | D | E | FX |
|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

**Provides:** RNDr. Ivan Mojsej, PhD.

**Date of last modification:** 03.05.2015

**Approved:** prof. RNDr. Jozef Doboš, CSc.

## COURSE INFORMATION LETTER

**University:** P. J. Šafárik University in Košice

**Faculty:** Faculty of Science

| **Course ID:** ÚMV/ rSDM/12 | **Course name:** Seminar on didactics of mathematics |
|---|---|

**Course type, scope and the method:**
**Course type:** Practice
**Recommended course-load (hours):**
**Per week: Per study period:** 12s
**Course method:** present

**Number of credits:** 4

**Recommended semester/trimester of the course:** 5.

**Course level:** N

**Prerequisities:**

**Conditions for course completion:**

**Learning outcomes:**

**Brief outline of the course:**

**Recommended literature:**

**Course language:**

**Notes:**

**Course assessment**
Total number of assessed students: 10

| A | B | C | D | E | FX |
|---|---|---|---|---|---|
| 20.0 | 20.0 | 0.0 | 50.0 | 10.0 | 0.0 |

**Provides:** RNDr. Ingrid Semanišinová, PhD.

**Date of last modification:**

**Approved:** prof. RNDr. Jozef Doboš, CSc.

## COURSE INFORMATION LETTER

**University:** P. J. Šafárik University in Košice

**Faculty:** Faculty of Science

| **Course ID:** ÚMV/ rSMO/13 | **Course name:** Seminar to mathematical olympiad |
|---|---|

**Course type, scope and the method:**
**Course type:** Practice
**Recommended course-load (hours):**
**Per week: Per study period:** 24s
**Course method:** present

**Number of credits:** 8

**Recommended semester/trimester of the course:** 3.

**Course level:** N

**Prerequisities:**

**Conditions for course completion:**
On the basis of continuous assessment.

**Learning outcomes:**
Acquire skills in solving problems from mathematical olympiads and mathematical competitions. Learning to lead mathematical group of talented children.

**Brief outline of the course:**
Tasks of mathematical competitions for high school - algebra, combinatorics, inequalities, geometry, number theory. Math games.

**Recommended literature:**
Brožúry z edície Škola mladých matematikov. (in slovak)
Séria brožúr: XY. ročník matematickej olympiády.(in slovak)
.

**Course language:**

**Notes:**

**Course assessment**
Total number of assessed students: 91

| A | B | C | D | E | FX |
|---|---|---|---|---|---|
| 72.53 | 8.79 | 10.99 | 4.4 | 3.3 | 0.0 |

**Provides:** RNDr. Ingrid Semanišinová, PhD.

**Date of last modification:** 03.05.2015

**Approved:** prof. RNDr. Jozef Doboš, CSc.

## COURSE INFORMATION LETTER

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|---|---|
| **University:** P. J. Šafárik University in Košice | |
| **Faculty:** Faculty of Science | |
| **Course ID:** ÚMV/ rPDP/12 | **Course name:** Teaching practice |
| **Course type, scope and the method:**<br>**Course type:** Practice<br>**Recommended course-load (hours):**<br>**Per week: Per study period:** 20s<br>**Course method:** present | |
| **Number of credits:** 6 | |
| **Recommended semester/trimester of the course:** 5. | |
| **Course level:** N | |
| **Prerequisities:** | |
| **Conditions for course completion:** | |
| **Learning outcomes:** | |
| **Brief outline of the course:** | |
| **Recommended literature:** | |
| **Course language:** | |
| **Notes:** | |

**Course assessment**
Total number of assessed students: 10

| abs | n |
|---|---|
| 100.0 | 0.0 |

| |
|---|
| **Provides:** doc. RNDr. Dušan Šveda, CSc., RNDr. Ingrid Semanišinová, PhD. |
| **Date of last modification:** |
| **Approved:** prof. RNDr. Jozef Doboš, CSc. |

## COURSE INFORMATION LETTER

| | |
|---|---|
| **University:** P. J. Šafárik University in Košice | |
| **Faculty:** Faculty of Science | |
| **Course ID:** ÚMV/ rZPM/12 | **Course name:** Thesis |
| **Course type, scope and the method:**<br>**Course type:**<br>**Recommended course-load (hours):**<br>**Per week: Per study period:**<br>**Course method:** present | |
| **Number of credits:** 10 | |
| **Recommended semester/trimester of the course:** 5. | |
| **Course level:** N | |
| **Prerequisities:** | |
| **Conditions for course completion:** | |
| **Learning outcomes:** | |
| **Brief outline of the course:** | |
| **Recommended literature:** | |
| **Course language:** | |
| **Notes:** | |

**Course assessment**
Total number of assessed students: 9

| abs | n |
|---|---|
| 100.0 | 0.0 |

| |
|---|
| **Provides:** |
| **Date of last modification:** |
| **Approved:** prof. RNDr. Jozef Doboš, CSc. |

## COURSE INFORMATION LETTER

**University:** P. J. Šafárik University in Košice

**Faculty:** Faculty of Science

| **Course ID:** ÚMV/ rOZP/12 | **Course name:** Thesis defence |
|---|---|

**Course type, scope and the method:**
**Course type:**
**Recommended course-load (hours):**
**Per week: Per study period:**
**Course method:** present

**Number of credits:** 0

**Recommended semester/trimester of the course:**

**Course level:** N

**Prerequisities:**

**Conditions for course completion:**

**Learning outcomes:**

**Brief outline of the course:**

**Recommended literature:**

**Course language:**

**Notes:**

**Course assessment**
Total number of assessed students: 9

| A | B | C | D | E | FX |
|---|---|---|---|---|---|
| 0.0 | 33.33 | 44.44 | 11.11 | 11.11 | 0.0 |

**Provides:**

**Date of last modification:**

**Approved:** prof. RNDr. Jozef Doboš, CSc.