COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ dALG/10	**Course name:** Algebra

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: 2 **Per study period:** 28
Course method: present

Number of credits: 6

Recommended semester/trimester of the course: 2., 4.

Course level: III.

Prerequisities:

Conditions for course completion:
passing the exam

Learning outcomes:
The students will gain a deeper knowledge about the most important algebraic stuctures (group,ring, field, Boolean algebra) and their applications in various disciplines of mathematics as well as outside mathematics.

Brief outline of the course:
Groups, rings, fields of algebraic numbers, Galois groups, Boolean algebras and lattices.

Recommended literature:
1. G. Birkhoff, S. MacLane : Prehľad modernej algebry, Alfa, Bratislava 1979.
2. J. J. Rotman: Advanced Modern Algebra, Amer. Math. Soc., 2010.

Course language:
Slovak or English

Notes:

Course assessment
Total number of assessed students: 15

N	P
0.0	100.0

Provides: doc. RNDr. Miroslav Ploščica, CSc., 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/ dCMG/12	**Course name:** Citation in a monograph
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 20	
Recommended semester/trimester of the course:	
Course level: III.	
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	

abs	n
0.0	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/ dCZC/12	**Course name:** Citation in an international scientific journal
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 10	
Recommended semester/trimester of the course:	
Course level: III.	
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	

abs	n
0.0	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/ dCDC/12	**Course name:** Citation in a Slovak scientific journal
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 5	
Recommended semester/trimester of the course:	
Course level: III.	
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

abs	n
0.0	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/ dSVP/14	**Course name:** Co-researcher of an APVV or VEGA project
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 18

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/ dSVG/12	**Course name:** Co-researcher of an internal grant
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 10	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 47	

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/ dSMP/14	**Course name:** Co-researcher of an international project
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 3	
Recommended semester/trimester of the course:	
Course level: III.	
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	
abs	n
0.0	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/ dDTM/15	**Course name:** Digital technologies in mathematics education

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: 2 **Per study period:** 28
Course method: present

Number of credits: 5

Recommended semester/trimester of the course: 1., 3.

Course level: III.

Prerequisities:

Conditions for course completion:
examination

Learning outcomes:
To characterize possibilities of the use of digital technologies for problem solving in school mathematics, for support of different stages of learning process and for the application of innovative trends in mathematics education. To develop students‘ critical thinking skills in searching and evaluating proposals for meaningful use of digital technologies in mathematics teaching.

Brief outline of the course:
Characteristics of the potential uses, benefits and negative aspects of digital technologies in mathematics education. Modern trends in mathematics teaching - constructivist approaches to learning, guided investigation, inquiry-based learning, peer instruction, project method. Development of selected digital competencies in mathematics teaching. Representations of data and mathematical modelling in a digital environment. Modelling activities in mathematics teaching. Investigation of the properties of figures, geometric relationships and functional dependencies using dynamic geometry systems. Didactic aspects of e-learning. Strategies in e-learning promoting active learning of mathematics. Implementation of feedback and providing of aimed assistance in digital learning materials. Interactive mathematical documents produced using computer programs such as CAS.

Recommended literature:
1. Antoch, J., Čihák, M., Prachař, J.: Použití programu MUPAD ve středoškolské výuce, Pravděpodobnost a statistika na střední škole (Use of the programme MUPAD in secondary school teaching, Probability and statistics in secondary school classrooms), Univerzita Karlova v Praze, Matfyzpress, 2005.
2. Balacheff, N., Kaput, J., J.: Computer-based learning environments in Mathematics. In: International Handbook of Mathematics Education (editor: Bishop, A., J. et al.), Kluwer Academic Publishers, London, 1996, p. 469-501.
3. Dubinsky, E., Tall, D.: Advanced mathematical thinking and the computer. In: Advanced mathematical thinking (editor Tall, D.), Kluwer Academic Publishers, 2002, p. 231-243.

4. Fulier, J., Ďuriš, V., Frantová, P.: CAS (systémy počítačovej algebry) vo vyučovaní matematiky (CAS (computer algebra systems) in mathematics teaching), Univerzita Konštantína Filozofa v Nitre, 2007.
5. Vaníček, J.: Počítačové kognitivní technologie ve výuce geometrie, (Computer cognitive technologies in teaching geometry), Univerzita Karlova v Praze, 2009.

Course language:
Slovak or English

Notes:

Course assessment
Total number of assessed students: 3

N	P
0.0	100.0

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/ dDSM/10	**Course name:** Discrete mathematics

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 3 / 1 **Per study period:** 42 / 14
Course method: present

Number of credits: 6

Recommended semester/trimester of the course: 2., 4.

Course level: III.

Prerequisities:

Conditions for course completion:
Oral exam

Learning outcomes:
Mastered basic methods and principles of discrete mathematics.

Brief outline of the course:
Combinatorial counting. Basic combinatorial principles and methods. Proofs in discrete mathematics. Discrete probability. An introduction to the theory of graphs. Basic cryptography

Recommended literature:
1. J. Matoušek, J. Nešetřil: Invitation to Discrete Mathematics, Univerzita Karlova - Nakladatelství Karolinum, Praha 2000.
2. E. Scheinerman: Mathematics - a Discrete Introduction. Brooks/Cale, Pacific Grove, USA, 2002.

Course language:
Slovak or English

Notes:

Course assessment
Total number of assessed students: 10

N	P
0.0	100.0

Provides: prof. RNDr. Stanislav Jendroľ, DrSc.

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: CJP/ AJD1/07	**Course name:** English Language for PhD Students 1

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: 2 **Per study period:** 28
Course method: present

Number of credits: 2

Recommended semester/trimester of the course: 1.

Course level: III.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 425

N	Ne	P	Pr	abs	neabs
0.0	0.0	67.53	0.0	32.47	0.0

Provides: PhDr. Helena Petruňová, CSc., Mgr. Zuzana Kolaříková, 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: CJP/ AJD2/07	**Course name:** English Language for PhD Students 2

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: 2 **Per study period:** 28
Course method: present

Number of credits: 3

Recommended semester/trimester of the course: 2.

Course level: III.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 421

N	Ne	P	Pr	abs	neabs
0.0	0.0	89.79	1.9	8.31	0.0

Provides: PhDr. Helena Petruňová, CSc., Mgr. Zuzana Kolaříková, PhD., Mgr. Barbara Mitríková

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/ dISLa/14	**Course name:** Individual study of scientific literature I
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 12	
Recommended semester/trimester of the course: 1., 2..	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language: Slovak and English	
Notes:	
Course assessment Total number of assessed students: 7	

abs	n
100.0	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/ dISLb/14	**Course name:** Individual study of scientific literature II
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 12	
Recommended semester/trimester of the course: 3., 4..	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language: Slovak and English	
Notes:	
Course assessment Total number of assessed students: 7	

abs	n
100.0	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/ dJMT/15	**Course name:** Language of Mathematics

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: 3 **Per study period:** 42
Course method: present

Number of credits: 6

Recommended semester/trimester of the course: 2., 4.

Course level: III.

Prerequisities:

Conditions for course completion:
exam

Learning outcomes:
The goal of the Language of Mathematics is for students to assimilate the basic concepts, reasoning patterns, and language skills that are fundamental to Mathematics.

Brief outline of the course:
The role and use of variables in the structure of mathematical expressions. Order of operations. Reading of mathematical text. Reading and writing arithmetic procedures in algebraic expressions. The key concept of set and its substance. The concept of functional dependency. The theory of solving equations and inequalities. Language of mathematical logic. Generalisation in mathematics.

Recommended literature:
B. Barton: The Language of Mathematics. Telling Mathematical Tales, Springer, 2008.
J. Barwise, J. Etchemendy: Language, Proof and Logic, Seven Bridges Press, 1999.
W. W. Esty: The Language of Mathematics, Montana State University, USA, 2008.
C. Lee: Language for Learning Mathematics. Assessment for Learnig in Practice, Open University Press, 2006.
T. Sundstrom: Mathematical Reasoning, Pearson Education, 2007.

Course language:

Notes:

Course assessment
Total number of assessed students: 0

N	P
0.0	0.0

Provides: prof. RNDr. Jozef Doboš, 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/ dMAN/10	**Course name:** Mathematical analysis

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: 2 **Per study period:** 28
Course method: present

Number of credits: 6

Recommended semester/trimester of the course: 2., 4.

Course level: III.

Prerequisities:

Conditions for course completion:
exam

Learning outcomes:
Understanding of the basic rigorous ideas of Mathematical Analysis.

Brief outline of the course:
Rings sigma-rings. Measure. Outer measure. Lebesgue measure. Measurable sets. Measurable functions. Legesgue integral. Lebesgue integral versus Riemann integral. Calculations of Lebesgue integrals. Applications.

Recommended literature:
A. M. Bruckner, J. B. Bruckner, B. S. Thomson: Real Analysis, Prentice Hall, 1997.
T. Neubrunn, B. Riečan: Miera a integrál, Veda, Bratislava, 1981.
B. Riečan, T. Neubrunn: Teória miery, Veda, Bratislava, 1992.
Т. А. Леонтьева, В. С. Панферов, В. С. Серов: Задачи по теории функций действительного переменного, Издательство Московского университета, Москва, 1997.

Course language:
Slovak or English

Notes:

Course assessment
Total number of assessed students: 2

N	P
0.0	100.0

Provides: prof. RNDr. Jozef Doboš, 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/ dMRU/10	**Course name:** Methods for solving mathematical problems

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: 3 **Per study period:** 42
Course method: present

Number of credits: 6

Recommended semester/trimester of the course: 2., 4.

Course level: III.

Prerequisities:

Conditions for course completion:

Learning outcomes:
Obtain knowledge about the structure of elementary mathematics with respect to advanced mathematics; the development of mathematical skills of prospective teachers.

Brief outline of the course:
Language of Mathematics; syntax and semantics; sets, relations, rational and irrational numbers, equations and inequations in reals; elementary functions

Recommended literature:
A. H. Schoenfeld: Cognitive science and mathematics education, Routledge, 1987
Thomas P. Carpenter, John A. Dossey, Julie L. Koehler: Classics in mathematics education research, NCTM, 2004
W.W. Esty: The Language of Mathematics, 2008
F. Klein: Elementary Mathematics from an Advanced Standpoint, 1945

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 6

N	P
0.0	100.0

Provides: prof. RNDr. Jozef Doboš, 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/ dZMG/14	**Course name:** Obtaining of a mobility grant
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 10	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 2

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/ ODP/14	**Course name:** PhD 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: 30	
Recommended semester/trimester of the course:	
Course level: III.	
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	

N	P
0.0	100.0

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/ dPDK/12	**Course name:** Presentation of results at a local conference
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 16

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/ dPDZ/12	**Course name:** Presentation of results at a local conference with international participation
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 4	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 61

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/ dVMK/14	**Course name:** Presentation of results at an international conference
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 6	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 21

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/ dPSM/12	**Course name:** Presentation of results in a seminar
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 77

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/ dVPM/15	**Course name:** Research approach to mathematics education

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: 3 **Per study period:** 42
Course method: present

Number of credits: 6

Recommended semester/trimester of the course: 1., 3.

Course level: III.

Prerequisities:

Conditions for course completion:
Examination

Learning outcomes:
To learn the basic principles and strategies for application of research approach to mathematics education. To gain practical experience in developing of methodical and training materials for teaching mathematics at the elementary and secondary schools.

Brief outline of the course:
The structure of competences for scientific work from view of student/pupil. IBSE method. Case studies of the use of investigative methods for teaching of specific mathematical content. Possibilities of using digital technologies in applications of investigative methods.

Recommended literature:
[1] Kopka. J.: Zkoumání ve školské matematice, Ružomberok 2006
[2] King, J.R. a kol.: Geometry Turded on!, USA 1997
[3] Held, Ľ. a kol.: Výskumne ladená koncepcia prírodovedného vzdelávania. Pedagogická fakulta Trnavskej univerzity v Trnave, 2011.

Course language:
Slovak or English

Notes:

Course assessment
Total number of assessed students: 0

N	P
0.0	0.0

Provides: doc. RNDr. Dušan Šveda, CSc., 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/ dPNC/12	**Course name:** Scientific publication in non-current content journal
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 5	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 13

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/ dPNZ/12	**Course name:** Scientific publication in non-reviewed proceedings
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 24

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/ dPRZ/12	**Course name:** Scientific publication in peer-reviewed proceedings
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 5	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 21

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/ dPCR/12	**Course name:** Scientific publication registered in the database Math. Reviews or Zentralblatt MATH
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 15	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 8	

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/ dPCW/12	**Course name:** Scientific publication registered in the database Web of Science or Scopus
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 20	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 33	

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/ dCSC/12	**Course name:** SCI or SCOPUS citation
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 20	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 2

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/ dVDM/10	**Course name:** Selected topics in didactics of mathematics

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: 3 **Per study period:** 42
Course method: present

Number of credits: 6

Recommended semester/trimester of the course: 4.

Course level: III.

Prerequisities:

Conditions for course completion:
Examination

Learning outcomes:
To acquire the methods and forms of mathematical education based on active self-cognitive activities with the support of modern digital technologies.

Brief outline of the course:
Investigation in school mathematics. Constructivism and constructionism in teaching of mathematics. Outcomes, teaching and principles IBSE (Inquiry based science education) teaching methods for different levels of independent work of the student. Introduction to the theory of didactic situations. The use of digital tools in active mathematical cognition in the learning process.

Recommended literature:
Hejný, M., Kuřina, F.: Dítě, škola a matematika: Konstruktivistické přístupy k vyučování. Portál, Praha 2001
Kopka, J.: Výzkumný přístup při výuce matematiky. Ústí nad Labem, Acta universitatis purkynianae, 2004
John A. Van de Walle, Karen S. Karp and Jennifer M. Bay-Williams: Elementary and Middle School Mathematics: Teaching Developmentally (7th Edition), Allyn & Bacon; 7 edition 2009
Douglas a. Grouws: Handbook of Research on Mathematics,Information Age Publishing, 2006
Průcha J.: Moderní pedagogika, Portál Praha, 2009

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 18

N	P
0.0	100.0

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: Dek. PF UPJŠ/JSD/14	**Course name:** Spring School for PhD Students
Course type, scope and the method: **Course type:** Lecture **Recommended course-load (hours):** **Per week: Per study period:** 4d **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 68

abs	n
100.0	0.0

Provides: doc. RNDr. Vladimír Zeleňák, 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/ dSMD/10	**Course name:** Statistical methods for data analysis

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: 3 **Per study period:** 42
Course method: present

Number of credits: 6

Recommended semester/trimester of the course: 2., 4.

Course level: III.

Prerequisities:

Conditions for course completion:
Individual project work. Exam.

Learning outcomes:
The student should know and be able to apply basic concepts and principles of statistical methods using a PC and software RExcel in the design of didactical experiment, in obtaining and processing the results with the subsequent statistical interpretation.

Brief outline of the course:
1. Basic concepts and principles of statistical methods for didactical experiment design and data collection.
2. Data visualization, data reduction in an MS Excel spreadsheet and statistical software R.
3. Basic principles of statistical inference. Estimation Theory.
4. Regression and correlation analysis. Relationships between quantitative variables.
5. Goodness-of-Fit tests and contingency tables. Relationships between qualitative variables.
6. Testing hypotheses. Parametric testing methods.
7. Analysis of variance (principle, testing, graphical representation).
8. Nonparametric methods of testing.
9. Simulation methods. Bootstrap methods.
10. Introduction to multivariate statistical analysis.

Recommended literature:
ANDĚL, J. (2005), Základy matematické statistiky, Praha: MatFyzPress, (in Czech)
BOX G.E.P., HUNTER J.S., HUNTER W.G. (2005), Statistics for Experimenters: Design, Innovation, and Discovery, 2nd ed., Wiley-Interscience
CASELLA, G., BERGER, R.(2002), Statistical Inference, 2nd ed., Duxbury Press
CRAWLEY, M.J. (2005), Statistics: An Introdution using R, New York: Wiley
HEIBERGER, R. M., NEUWIRTH, E. (2009), R Through Excel: A Spreadsheet Interface for Statistics, Data Analysis, and Graphics, Springer
MOORE, D.S.(2000), The Active Practice of Statistics, New York: W. H. Freeman
MOORE, D.S., McCABE, G.P.(2005). Introduction to the Practice of Statistics, 5th ed., W. H. Freeman,
UTTS, J.M., HECKARD, R.F.(2007) Mind od Statistics, Third ed., Thomson Brooks/Cole

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 13

N	P
0.0	100.0

Provides: RNDr. Martina Hančová, 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/ dDZS/14	**Course name:** Summary doctoral exam

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

Number of credits: 5

Recommended semester/trimester of the course:

Course level: III.

Prerequisities:

Conditions for course completion:
Acquiring the required number of credits in the structure defined by the study plan.

Learning outcomes:
Evaluation of student‘s competences with respect to the profile of the graduate.

Brief outline of the course:
The summary doctoral exam is organised as a discourse focusing on 3 courses serving as credit sources for a PhD student (the course is chosen by the supervisor of the student after consulting with the guarantee of the study programme).

Recommended literature:

Course language:
slovak

Notes:

Course assessment
Total number of assessed students: 4

N	P
0.0	100.0

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/ dTVM/10	**Course name:** Theory of mathematics education

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: 3 **Per study period:** 42
Course method: present

Number of credits: 6

Recommended semester/trimester of the course: 1.

Course level: III.

Prerequisities:

Conditions for course completion:
Examination

Learning outcomes:
Obtain knowledge about the structure of the process of knowledge in mathematics, the development of mathematical skills, acquire the methodology of quantitative and qualitative research in Mathematics Education.

Brief outline of the course:
Creating definitions in mathematics and teaching mathematics. Structure, diagnostics and development of key mathematical competences. Phylogeny and ontogeny of teaching topics according to the State Education Programme - equations and inequalities, infinitesimal calculus, combinatorics, probability and statistics. Planimetry, stereometry, analytical geometry. Assessment in mathematics, standards development and didactic tests. Educational Research in Mathematics Education, comparison of quantitative and qualitative research.

Recommended literature:
M.Hejný a kol.: Teória vyučovania matematiky (Teaching mathematics theory), SPN Blava 1989,
J.Kopka: Hrozny problému ve školské matematice (Clusters of problems in school mathematics. Ústí nad Labem,1999
R.Fischer,G.Malle: Človek a matematika (Human and mathematics), SPN Bratislava 1992
A. Plocki: Pravdepodobnosť okolo nás (Probability about us), KU Ružomberok, 2004
A. H. Schoenfeld: Cognitive science and mathematics education, Routledge, 1987
R. Švařiček, K. Šeďová: Kvalitatívni výzkum v Pedagogických vědách (Quantitative research in pedagogical sciences), Portál Praha, 2007
Thomas P. Carpenter, John A. Dossey, Julie L. Koehler: Classics in mathematics education research, NCTM, 2004

Course language:
Slovak

Notes:

Course assessment Total number of assessed students: 21	
N	P
0.0	100.0
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/ dPDS/14	**Course name:** Thesis to the summary doctoral exam
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 15	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion: Obtaining required number of credits as given by the study plan.	
Learning outcomes: Evaluation of student‘s competences with respect to the profile of the graduate.	
Brief outline of the course:	
Recommended literature:	
Course language: Slovak or English	
Notes:	
Course assessment Total number of assessed students: 5	

abs	n
100.0	0.0

Provides:
Date of last modification: 03.05.2015
Approved: prof. RNDr. Jozef Doboš, CSc.