COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ ALG2b/10	**Course name:** Algebra II

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 4 / 2 **Per study period:** 56 / 28
Course method: present

Number of credits: 7

Recommended semester/trimester of the course: 2.

Course level: I.

Prerequisities: ÚMV/ALGa/10

Conditions for course completion:
According to tests and to the exam.

Learning outcomes:
To obtain basic knowledge on matrices, linear spaces, linear transformations and polynomials and their roots over a field; to be able to apply the theory in concrete excercises.

Brief outline of the course:
Linear spaces, bases. Rank of a matrix. Systems of homogeneous linear equations. Linear transformations.
Ring, fields. Polynomials over a field. Factorization into irreducible factors, roots. Roots of complex numbers. Cubic equations. Polynomials with several unknowns, symmetric polynomials.

Recommended literature:
A. Kurosh: Higher Algebra, Mir Publishers, 1975.

Course language:
Slovak

Course assessment
Total number of assessed students: 503

A	B	C	D	E	FX
13.32	11.73	17.3	18.69	28.83	10.14

Provides: prof. RNDr. Danica Studenovská, CSc.

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ ALGa/10	**Course name:** Algebra I

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

Number of credits: 7

Recommended semester/trimester of the course: 1.

Course level: I.

Prerequisities:

Conditions for course completion:
According to the results from the semester and in view of the results of the written and oral final exam..

Learning outcomes:
To obtain basic knowledge from number theory concerning divisibility and from linear algebra concerning systems of linear equations. To be able to apply it in concrete excercises.

Brief outline of the course:
Divisibility in Z. Fields. Systems of linear equations, Gauss elimination. Maps, permutations. Computing with matrices. Determinants, Cramer rule.

Recommended literature:
T.S Blyth, E.F. Robertson: Basic linear algebra, Springer Verlag, 2001.
K. Jänich: Linear algebra, Springer Verlag, 1991.

Course language:
Slovak

Course assessment
Total number of assessed students: 1336

A	B	C	D	E	FX
10.93	11.98	17.81	17.74	28.89	12.65

Provides: prof. RNDr. Danica Studenovská, CSc., RNDr. Igor Fabrici, Dr. rer. nat., Mgr. Simona Rindošová, RNDr. Martina Tamášová, Mgr. Erika Vojtková

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ ATC/10	**Course name:** Algebra and number theory

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 1 **Per study period:** 28 / 14
Course method: present

Number of credits: 4

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities: ÚMV/ALG2b/10

Conditions for course completion:
It is based on the results of written checks carried out during the semester. Final evaluation is based on the results of written checks carried out during the semester, of test, written and oral exam.

Learning outcomes:
Obtain basic knowledge about groups and from the elementary number theory.

Brief outline of the course:
Groups, subgroups, quotient groups, homomorphism theorems for groups, selected topics of the number theory.

Recommended literature:
G.Birkoff, S.Mac Lane: A Survey of Modern Algebra, New York 1965
I.R. Shafarevich: Basic Notions of Algebra, Springer, 2005

Course language:
Slovak

Course assessment
Total number of assessed students: 132

A	B	C	D	E	FX
10.61	19.7	27.27	21.21	16.67	4.55

Provides: doc. RNDr. Matúš Harminc, CSc.

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ BKP2/14	**Course name:** Bachelor Project

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

Number of credits: 2

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities:

Conditions for course completion:
To prepare and present a contribution related to thesis and its topic.

Learning outcomes:
To get students familiar with basic knowledge on the form and content of thesis and thesis presentation as well as with the support for its realisation.

Brief outline of the course:
Necessary elements and formal aspects of a thesis. WYSIWYG editors, LaTeX, drawing programs. Presentation software, Microsoft PowerPoint and its clones, Beamer. Suggestions for presentation and contribution making.

Recommended literature:
electronic information sources

Course language:
Slovak or English

Course assessment
Total number of assessed students: 110

abs	n
100.0	0.0

Provides: doc. RNDr. Dušan Šveda, CSc.

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ BPO/14	**Course name:** Bachelor thesis and its defence

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: I.

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:
Presentation of results of the bachelor thesis, answering the questions of the thesis supervisor and answering the questions of members of evaluation commitee.

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 41

A	B	C	D	E	FX
56.1	29.27	7.32	4.88	2.44	0.0

Provides:

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ DSMa/10	**Course name:** Discrete mathematics I

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

Number of credits: 5

Recommended semester/trimester of the course: 3.

Course level: I.

Prerequisities:

Conditions for course completion:
Examination.

Learning outcomes:
To be familiar with some factual knowledge of combinatorics and graph theory. To understand an appreciate mathematical notions, definitions, and proofs, to solve problems requiring more than just standard recipes, and to express mathematical thoughts precisely and more rigorously.

Brief outline of the course:
Basic principles.
Counting and binomial coefficients, Binomial theorem, polynomial theorem.
Recurrence: Some miscellaneous problems, Fibonacci-type relations, Using generating functions, miscellaneous methods.
The inclusion-exclusion principle. Rook polynomials.
Introduction to graphs: The concept of graphs, paths in graphs. Connectivity. Trees, bipartite graphs. Planarity. Polyhedra.
Traveling round a graph: Eulerian graphs, Hamiltonian graphs.
Partitions and colourings: Vertex colourings of graphs. Edge colourings of graphs

Recommended literature:
1. I. Anderson, A first course in discrete mathematics, Springer-Verlag London, 2001.
2. J. Matoušek and J. Nešetřil, Invitation to discrete mathematics, Oxford University Press Inc. , New York 1999.

Course language:
Slovak

Course assessment
Total number of assessed students: 547

A	B	C	D	E	FX
13.35	11.7	17.18	22.49	26.87	8.41

Provides: Dr.h.c. prof. RNDr. Stanislav Jendroľ, DrSc., RNDr. Mária Maceková, PhD., RNDr. Juraj Valiska

Date of last modification: 22.02.2017
Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Arts	
Course ID: ÚMV/ DSMb/10	**Course name:** Discrete mathematics II
Course type, scope and the method: **Course type:** Lecture / Practice **Recommended course-load (hours):** **Per week:** 2 / 2 **Per study period:** 28 / 28 **Course method:** present	
Number of credits: 5	
Recommended semester/trimester of the course: 4.	
Course level: I.	
Prerequisities: ÚMV/DSMa/10 or ÚMV/DSM3a/10	
Conditions for course completion: Two tests during the semester It is made on the base of results of two tests during the semester (50%)and a final written exam and an oral exam (50%)	
Learning outcomes: Mastered funamental methods of graph theory. To be familiar with some possibilities of applications of graph theory	
Brief outline of the course: Introduction to graphs. Connectivity and distance in graphs. Trees, spanning subgraphs Independence and coverings. Introduction to the Ramsey theory. Introduction to the extremal graph theory. Matchings: Theorem of Hall, theorem of Berge, optimal assignment problems. Vertex colorings: Theorem of Brooks, Theorem of Erdos and Szekeres. Chromatic polynomials. Edge colourings, Theorem of Koenig. Introduction to directed graphs: Basic notions, connectivities, tounaments, acyclic graphs, base and kernel of a graph. Introduction to applications of graphs.	
Recommended literature: 1. A. Bondy and U.S.R. Murty: Graph theory, Springer-Verlag 2008 2. G. Chartrand, L. Lesniak, and P. Zhang, Graphs and digraphs, CRC Press, Boca Raton 2011 3. R. Diestel: Graph Theory, Springer-Verlag, New York, Inc. 1997 4.M.N.S. Swamy and K. Thulasiraman: Graphs, Networks and Algorithms. Willey Interscience Publ., New York 1981	
Course language: Slovak	
Course assessment	

Total number of assessed students: 375

A	B	C	D	E	FX
11.73	9.33	17.33	19.47	28.0	14.13

Provides: Dr.h.c. prof. RNDr. Stanislav Jendroľ, DrSc., RNDr. Mária Maceková, PhD.

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Arts	
Course ID: ÚMV/ GEO2a/15	**Course name:** Geometry I

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 3 / 2 **Per study period:** 42 / 28
Course method: present

Number of credits: 5

Recommended semester/trimester of the course: 6.

Course level: I.

Prerequisities:

Conditions for course completion:
Two written tests.
Written and oral examinations
For continuous evaluation - max. 40 points
for the written test - max. 20 points
for oral exams - max. 40 points)
Final score:
A: 100-91 points, B: 90-81, C: 80-71, D: 70-61, E: 60-51, F: less than 51 points
Note: In each of the student needs to have at least 40% max. number of points

Learning outcomes:
To acquaint students with the analytical geometry of linear and quadratic figures in Afinne and Euclidean space.

Brief outline of the course:
Affine n-dimensional space - definition.
Linear coordinate system.
Subspaces, the parametric and non-parametric representation.
The relative position of the two subspaces.
Bundles of lines.
The arrangement of points on the line.
Convex sets.
Changing the system of linear coordinates.
Euclidean space - definition of (scalar and outer product).
Euclidean distances and deviations subspaces.
The rate of the size of convex sets.
Triangle and trigonometric theorems.
Conic and line.

Recommended literature:
1. M.Sekanina, L.Boček, M.Kočandrle, J.Šedivý: Geometrie 1, SPN Praha 1986
2. M.Hejný, V.Zaťko, P.Kršňák: Geometria 1, SPN Bratislava 1985
3. J.Eliaš, J.Horváth, J.Kajan: Zbierka úloh z vyššej matematiky 1, Alfa Bratislava
4. M.Trenkler: Materiály uvedené na Internete.

Course language:
Slovak

Course assessment
Total number of assessed students: 113

A	B	C	D	E	FX
15.93	16.81	23.01	17.7	15.93	10.62

Provides: doc. RNDr. Dušan Šveda, CSc., RNDr. Lucia Janičková

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ IPU/10	**Course name:** Informatics course for teachers of mathematics

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

Number of credits: 2

Recommended semester/trimester of the course: 6.

Course level: I.

Prerequisities:

Conditions for course completion:
Elaborating test by using a computer. Solving problems of worksheet and elaboration of seminar work.

Learning outcomes:
To develop the students' knowledge and skills in the basics of working with standard ICT, which provide opportunities for their use in mathematics education. To teach students to use the basic commands of Logo language for writing and generalization algorithms for constructing geometric shapes and basic principles of creation of constructions in the environment of dynamic geometry. To develop creative and evaluative students' ability to allow meaningful integration of modern technologies in mathematics education.

Brief outline of the course:
Basics of development of algorithms in Logo. Basics of working in the dynamic geometry environment. Educational applications and Internet in mathematics education. Use of numerical and graphical representations of data and modelling in the spreadsheet environment.

Recommended literature:
B. Brdička: The Role of Internetu in Education, 2003, http://it.pedf.cuni.cz/~bobr/role/econt.htm.
S. Lukáč a kol.: IKT vo vyučovaní matematiky, Asociácia projektu Infovek 2002.
M. Černochová a kol.: Využití počítače při vyučování. Portál, 1998.
Z. Šťastný: Matematické a statistické výpočty v Microsoft Excelu, Computer Press 2001.

Course language:
Slovak

Course assessment
Total number of assessed students: 141

A	B	C	D	E	FX
54.61	26.24	9.93	7.09	2.13	0.0

Provides: doc. RNDr. Stanislav Lukáč, PhD.

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ LTM/10	**Course name:** Logic and set theory

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 3 / 2 **Per study period:** 42 / 28
Course method: present

Number of credits: 6

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities: ÚMV/MANb/10

Conditions for course completion:
Exam

Learning outcomes:
To obtain a basic knowledge on the mathematical notion of an infinity. Analysis of the notion of a proof.

Brief outline of the course:
Set as a mathematical formularization of an infinity. Properties of the set of reals. Mathematical induction. Relations and mappings.
Finite and countable sets. Cardinality of continuum. Elementary cardinal arithmetics.
Sentential calculus, an axiomatization. Completness Theorem. Methods of proofs. Language of predicate calculus, examples. Axiomatizations of predicate calculus and the notion of a proof. Methods of proofs in predicate calculus.

Recommended literature:
E. Mendelson, Introduction to Mathematical Logic, van Nostrand 1964.

Course language:
Slovak

Course assessment
Total number of assessed students: 533

A	B	C	D	E	FX
12.57	15.95	19.7	24.2	17.45	10.13

Provides: RNDr. Jaroslav Šupina, PhD.

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ MAE/10	**Course name:** Macroeconomics

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 1 **Per study period:** 28 / 14
Course method: present

Number of credits: 4

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities:

Conditions for course completion:
Final mark is given based on the results of the tests written during the semester and oral exam, that evaluates the verbal argument about the studied models.

Learning outcomes:

Brief outline of the course:
Basic macroekonomic notions: Gross domestic product, inflation, unemployment.. Analysis of godds markets. Financial markets. IS-LM model in closed economy. Open economy. IS-LM model in open economy. Models of labour market. Phillips curve, Okun law. Inflation and economic growth. High depth.

Recommended literature:
1. Olivier Blanchard, Alessia Amighini, Francesco Giavazzi:MACROECONOMICS, A EUROPEAN PERSPECTIVE, Pearson Education, 2010
2. N.GREGORY MANKIW, MACROECONOMICS, 7th Edition, Harvard University,Worth Publishers 2009

Course language:
Slovak and English

Course assessment
Total number of assessed students: 65

A	B	C	D	E	FX
20.0	13.85	21.54	23.08	13.85	7.69

Provides: prof. RNDr. Katarína Cechlárová, DrSc.

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ MAN2c/10	**Course name:** Mathematical analysis III

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

Number of credits: 5

Recommended semester/trimester of the course: 3.

Course level: I.

Prerequisities: ÚMV/MANb/10

Conditions for course completion:
Two written test during semeter and activity student to practice. Final evaluation is given by continuous assessment, written and oral part of the exam.

Learning outcomes:
The purpose of the course is to provide introductory knowledge in Riemann integral calculus of real functions of one real variable and series of real functions. To develop computational skills in the field and extend the student ability to use this theory in applications.
To teach the basic knowledge of the subject mater in the sylabus and develop the ability to use this theory.

Brief outline of the course:
Definite Riemann integral - definition, elementary properties, calculation methods, applications. Improper Riemann integral. Sequences and series of real functions – pointwise and uniform convergence, properties of the limit function and the sum. Power series, Taylor series and their applications.

Recommended literature:
1. O. Hutník: Určitý integrál, UPJŠ, Košice, 2012 (in Slovak).
2. Brannan, D.: A First Course in Mathematical Analysis, Cambridge University Press, Cambridge 2006.
3. Bruckner, A. M. - Bruckner J. B. - Thomson, B. S.: Real Analysis, Second Edition, ClassicalRealAnalysis.com, 2008.
4. Zorich, V. A.: Mathematical Analysis I, Springer-Verlag 2002.

Course language:
Slovak

Course assessment
Total number of assessed students: 640

A	B	C	D	E	FX
7.34	6.88	12.81	18.75	42.34	11.88

Provides: doc. RNDr. Ondrej Hutník, PhD.

Date of last modification: 22.02.2017
Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ MAN2d/10	**Course name:** Mathematical analysis IV

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

Number of credits: 5

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities: ÚMV/MANb/10

Conditions for course completion:
Continuous assessment is taken the form of small tests and two main tests during the semester. Final evaluation is given by continuous assessment (40%), written and oral part of the exam (60%).

Learning outcomes:
To teach the basic knowledge of the subject matter in the syllabus and develop the ability to use this theory. The students also learn mathematical culture, notation and mathematical way of thinking and expression.

Brief outline of the course:
1. Metric space - Euclidean space, topological properties of points and sets in metric space.
2. Function of several real variables - basic concepts, limits and continuity.
3. Differential calculus of functions of several real variables - partial derivative, differentiability and total differential (also higher order), Taylor polynomials, directional derivative, local and global extrema, constrained local extrema.
4. Double (two dimensional) integral - definition, calculation methods, applications.

Recommended literature:
1. L. Kluvánek, I. Mišík, M. Švec: Matematika I, II, SVTL, Bratislava, 1959 (in Slovak).
2. Z. Došlá, O. Došlý: Diferenciální počet funkcí více proměnných, vysokoškolský učebný text, Masarykova univerzita v Brne, Brno, 2003 (in Czech).
3. R. E. Williamson, H. F. Trotter: Multivariable mathematics, Prentice Hall (Pearson), Upper Saddle River, 2004.
4. B. S. Thomson, J. B. Bruckner, A. M. Bruckner: Elementary real analysis, Prentice Hall (Pearson), Lexington, 2008.
5. J. Stewart: Calculus: Early transcendentals, Brooks Cole (Thomson), Toronto, 2008.
6. P. Pták: Calculus II (A course for engineers), ČVUT v Prahe, Praha, 1997.
7. J. Eliaš, J. Horváth, J. Kajan: Zbierka úloh z vyššej matematiky 3, 4, SVTL, Bratislava, 1966 (in Slovak).

Course language:
Slovak

Course assessment

Total number of assessed students: 288

A	B	C	D	E	FX
9.38	9.72	17.36	19.44	34.72	9.38

Provides: RNDr. Lenka Halčinová, PhD.

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ MANa/10	**Course name:** Mathematical analysis I

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

Number of credits: 7

Recommended semester/trimester of the course: 1.

Course level: I.

Prerequisities:

Conditions for course completion:
Two written test during semeter and activity student to practice. Final evaluation is given by continuous assessment, written and oral part of the exam.

Learning outcomes:
The aim of the course is to give introductory knowledge about real numbers, sequences and series of real numbers, and to develop certain calculation skills in the field.

Brief outline of the course:
Real numbers - axioms and properties. Real functions - basic properties (monotone, bounded, even/ odd, inverse), transformations of graphs of functions. Infinite sequences - operations, boundedness, monotonicity, convergence. Infinite series - operations, convergence, criteria of convergence.

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:
Slovak

Course assessment
Total number of assessed students: 1322

A	B	C	D	E	FX
6.28	7.64	12.25	13.24	35.25	25.34

Provides: doc. RNDr. Ondrej Hutník, PhD., RNDr. Lenka Halčinová, PhD., RNDr. Viera Šottová

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ MANb/10	**Course name:** Mathematical analysis II

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 4 / 3 **Per study period:** 56 / 42
Course method: present

Number of credits: 8

Recommended semester/trimester of the course: 2.

Course level: I.

Prerequisities: ÚMV/MANa/10

Conditions for course completion:
Two written test during semeter and activity student to practice. Final evaluation is given by continuous assessment, written and oral part of the exam.

Learning outcomes:
The purpose of the course is to provide introductory knowledge in differential and integral calculus of real functions of one real variable and to develop computational skills in the field.

Brief outline of the course:
Limit and continuity of real functions, elementary functions. Differential calculus - derivatives of the first and of higher orders, the basic theorems of differential calculus and their use to study properties and behavior of functions. Indefinite integral - basic methods for finding primitive functions. Newton integral and its basic properties.

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:
Slovak

Course assessment
Total number of assessed students: 844

A	B	C	D	E	FX
8.65	7.94	12.44	18.72	36.73	15.52

Provides: doc. RNDr. Ondrej Hutník, PhD., Mgr. Katarína Lučivjanská, PhD., RNDr. Lenka Halčinová, PhD.

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ MIE/13	**Course name:** Microeconomics

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 1 **Per study period:** 28 / 14
Course method: present

Number of credits: 4

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities:

Conditions for course completion:
The minimum necessary number of points from tests written during semester is 50%, plus the ability of verbal argumentation in the final oral exam.

Learning outcomes:
Understanding of basic principles of microeconomics and ability to apply them in practical situations.

Brief outline of the course:
Economics and economy. Supply and demand. Consumer Theory. Theory of firm. Perfect competition. Monopoly. Labour market. Market failure. Externalities and Public goods.

Recommended literature:
1. http://umv.science.upjs.sk/cechlarova/MIE/MIE.htm - podklady k prednáška, testy na cvičenia, materiály z dennej tlače
2. H.L. Varian, Intermediate Mikroekonomics, WW Norton, 1993
3. J.M. Perloff, Microeconomics, 6th Edtion, Addison Wesley, 2012
4. J. Sloman, Economics, 6th Edition, Prentice Hall, 2006

Course language:
Slovak

Course assessment
Total number of assessed students: 69

A	B	C	D	E	FX
24.64	20.29	18.84	21.74	13.04	1.45

Provides: prof. RNDr. Katarína Cechlárová, DrSc., RNDr. Veronika Kopčová

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ MRUa/15	**Course name:** Mathematical problem solving strategies I

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: 4.

Course level: I.

Prerequisities:

Conditions for course completion:
Evaluation will be awarded on the basis of continuous assessment and final test.

Learning outcomes:
To acquaint students with problems and strategies for the solutions of the problems at the primary and secondary school, and with the specific problems of teaching mathematics at primary and secondary school.

Brief outline of the course:
Basic knowledge of school mathematics, different strategy of problem solution, problems from mathematical competitions concerning Equations and inequalities and their systems, Functions, Financial Mathematics.

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

Course language:
Slovak

Course assessment
Total number of assessed students: 144

A	B	C	D	E	FX
31.25	22.22	23.61	11.11	11.11	0.69

Provides: doc. RNDr. Stanislav Lukáč, PhD.

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ MRUb/15	**Course name:** Mathematical problem solving strategies II

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: 5.

Course level: I.

Prerequisities: ÚMV/MRUa/15

Conditions for course completion:
The award is based on the results of written checks carried out during the semester.
The resulting trial is granted on the basis of continuous assessment and seminar work.

Learning outcomes:
To acquaint students with problems and strategies for the solutions of the problems at the primary and secondary school, and with the specific problems of teaching mathematics at primary and secondary school.

Brief outline of the course:
Basic knowledge of school mathematics, various methods for the task, the role of mathematical competitions for thematic units Planimetry, stereometry, goniometery.

Recommended literature:
[1] Hejný, M. a kol., Teória vyučovania matematiky 2. SPN, Bratislava 1989 (in Slovak)
[2] Kopka, J., Hrozny problémů ve školské matematice, Univerzita J. E. Purkyně, Ústí nad Labem 1999 (in Czech)
[3] Jonson-Wilder.S., Mason.J.: Developing thinking in Geometry, Sage, 2009
[4] Učebnice a zbierky úloh z matematiky ZŠ a SŠ

Course language:
Slovak

Course assessment
Total number of assessed students: 116

A	B	C	D	E	FX
36.21	18.97	28.45	10.34	6.03	0.0

Provides: doc. RNDr. Dušan Šveda, CSc.

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/MRUc/15	**Course name:** Mathematical problem solving strategies III

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: 6.

Course level: I.

Prerequisities: ÚMV/MRUb/15

Conditions for course completion:
During the semester will be 3 written exams.
Evaluation A - at least 90% of the points, evaluation B - at least 80%, evaluation C at least 70%, evaluation D at least 60%, evaluation E rating of at least 50% of the points. Credits shall not be granted to a student who receives less than 50% of the points.

Learning outcomes:
Students become familiar with the tasks, methods of problem solving, solving strategies and with specific problems of teaching mathematics at primary and secondary schools to topics combinatorics, probability and statistics.

Brief outline of the course:
Basic knowledge of school mathematics, from the topics: combinatorics, probability and statistics.

Recommended literature:
Hecht, T., Sklenáriková, Z., Metódy riešenia matematických úloh, Bratislava, SPN, 1992. (in slovak)
Hecht, T. a kol., Matematika pre 1.-4. ročník gymnázií a SOŠ, OrbisPictusIstropolitana, Bratislava 1999-2002. (in slovak)
Krantz, S.G., Techniques of Problem Solving, AMS, 1997.
Larson, L.C., Metódy riešenia matematických problémov, Bratislava, Alfa, 1990. (in slovak)

Course language:
Slovak

Course assessment
Total number of assessed students: 120

A	B	C	D	E	FX
27.5	33.33	22.5	10.0	6.67	0.0

Provides: RNDr. Ingrid Semanišinová, PhD.

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ MTM/14	**Course name:** Mathematics

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

Number of credits: 1

Recommended semester/trimester of the course:

Course level: I.

Prerequisities: ÚMV/MAN2c/10 and ÚMV/ALG2b/10 and ÚMV/ATC/10

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:

Recommended literature:

Course language:
Slovak

Course assessment
Total number of assessed students: 36

A	B	C	D	E	FX
25.0	16.67	33.33	22.22	2.78	0.0

Provides:

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ PSTa/10	**Course name:** Probability and statistics I

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

Number of credits: 5

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities: ÚMV/MAN1c/10 or ÚMV/MAN2c/10 or ÚMV/MAN3c/10

Conditions for course completion:
To obtain at least 50% in two written tests during the semester.
Total evaluation based on written tests and oral exam.

Learning outcomes:
To obtain knowledge of the axiomatic theory of probability, random variables and their characteristics, special types of distributions and their applications.

Brief outline of the course:
Probability space, definitions and properties of probability. Conditional probability and independence. Random variables, their distribution function and characteristics. Mean, variance and skewness.. Discrete and absolutely continuous distributions. Quantile and characteristic functions, their properties. Relation between characteristic function and moments. Median and mode. Transformation of random variables. Special types of distributions with applications (binomial, Poisson, geometric, uniform, exponential, normal, chí-square, Student, Fisher). Central limit theorem.

Recommended literature:
1. Skřivánková V.: Pravdepodobnosť v príkladoch, UPJŠ, Košice, 2006 (in Slovak)
2. DeGroot, M. H., Schervish, M. J.: Probability and Statistics, 4th ed., Pearson, Boston, 2012
3. Evans, M. J., Rosenthal, J. S.: Probability and Statistics: The Science of Uncertainty, 2nd Ed., W. H. Freeman, 2009
4. Riečan et al.: Pravdepodobnosť a matematická štatistika, Alfa, Bratislava, 1984 (in Slovak)

Course language:
Slovak

Course assessment
Total number of assessed students: 315

A	B	C	D	E	FX
7.62	14.29	16.83	25.71	24.76	10.79

Provides: RNDr. Martina Hančová, PhD., RNDr. Daniel Klein, PhD.

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ SHM/10	**Course name:** Seminar on history of mathematics

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: 6.

Course level: I., II.

Prerequisities:

Conditions for course completion:
Homework, presentation on the chosen topic during the seminar.
More than 91 points - evaluation of A.
81-90 points - evaluation of B.
71-80 points - rating C.
61-70 points - evaluation of D.
51-60 points - evaluation of E.
Less than 50 points - FX evaluation.

Learning outcomes:
Students get an overview of the history of the development of certain mathematical disciplines and selected terms and about parallel between phylogenesis and ontogenesis of mathematical thinking.

Brief outline of the course:
Mathematics in Early Civilizations. Greek Mathematics. Mathematics in the Near and Far East (Arabia, China, India). Medieval European Mathematics. The Renaissance of Mathematics. The Beginning of Modern Mathematics.

Recommended literature:
Burton, D. M.: The History of Mathematics: An Introduction. McGraw−Hill, 2007.
Devlin, K.: Jazyk matematiky. Dokořán, 2002 (in czech)
Kolman, A.: Dejiny matematiky ve starověku. Academia, Praha, 1968 (in slovak)
Juškevič, A. P.: Dejiny matematiky ve středověku. Academia, Praha 1977 (in slovak)
Znám,Š. a kol.: Pohľad do dejín matematiky. Alfa, Bratislava, 1986 (in slovak)
Konforovič, A.G.: Významné matematické úlohy, SPN Praha, 1989 (in slovak)

Course language:
Slovak

Course assessment
Total number of assessed students: 138

A	B	C	D	E	FX
79.71	7.25	7.25	2.9	2.9	0.0

Provides: RNDr. Ingrid Semanišinová, PhD.
Date of last modification: 22.02.2017
Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ SMK/17	**Course name:** Seminar to mathematical clubs

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: 6.

Course level: I.

Prerequisities:

Conditions for course completion:
Individual problem solving during seminars and homework.
More than 91 points - evaluation of A.
81-90 points - evaluation of B.
71-80 points - rating C.
61-70 points - evaluation of D.
51-60 points - evaluation of E.
Less than 50 points - FX evaluation.

Learning outcomes:
Students become familiar with solving problems from mathematical olympiads and mathematical competitions. They acquire theoretical basics necessary to lead mathematical group of talented children.

Brief outline of the course:
Number theory.
Equations, inequations, inequalities.
Word problems.
Planimetry.
Stereometry.
Combinatorics. Pigeonhole principle. Combinatorial geometry. Probability.
Math games. Interesting problems.

Recommended literature:
Brožúry z edície Škola mladých matematikov. (in slovak)
Séria brožúr: XY. ročník matematickej olympiády. (in slovak)
Ziegler, G.M.: Matematika Vám to spočítá, Universum, Praha, 2011. (in czech)
Zhouf, J. a kol.: Matematické příběhy z korespondenčních seminářu, Prometheus, Praha, 2006. (in czech)

Course language:
Slovak

Course assessment
Total number of assessed students: 77

A	B	C	D	E	FX
57.14	16.88	11.69	11.69	2.6	0.0
Provides: RNDr. Ingrid Semanišinová, PhD.					
Date of last modification: 17.03.2017					
Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ SVK/10	**Course name:** Students scientific conference

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: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:
Individual scientific work of students. Publishing of obtained results in a written form and as a public presentation.

Brief outline of the course:

Recommended literature:
With respect to the research problematics (article in journals, books).

Course language:
Slovak or English

Course assessment
Total number of assessed students: 79

A	B	C	D	E	FX
98.73	1.27	0.0	0.0	0.0	0.0

Provides:

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ TCS/10	**Course name:** Number theory

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: 3

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities: ÚMV/ATC/10

Conditions for course completion:
According to tests and exam.

Learning outcomes:
To obtain knowledge on quadratic congruences.

Brief outline of the course:
Chinese remainder theorem, Euler function, quadratic congruences, Pythagorean equation.

Recommended literature:
M. B. Nathanson: Elementary Methods in Number Theory. Springer, 2000.
H. E. Rose: A Course in Number Theory. Clarendon Press, Oxford, 1994.

Course language:
Slovak

Course assessment
Total number of assessed students: 547

A	B	C	D	E	FX
27.06	27.06	29.62	11.33	2.56	2.38

Provides: doc. RNDr. Matúš Harminc, CSc.

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ UAD/10	**Course name:** Introduction to data analysis

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

Number of credits: 2

Recommended semester/trimester of the course: 3.

Course level: I.

Prerequisities:

Conditions for course completion:
Test and individual project work.
Oral presentation of the individual project work.

Learning outcomes:
To know the basic purpose of statistical data analysis, its methods and statistical thinking and understand its importance for science and practical life.
To understand elementary statistical concepts.
To gain experience in handling real data using spreadsheet Excel and statistical software R.

Brief outline of the course:
1. Introduction (the basic philosophy and aim of statistical data analysis, descriptive and inductive statistics)
2. Collecting Data (types of data, random sample, randomized experiment)
3. Handling Data (visualization, summarizing – measures of center, measures of variability, relationships in data – introduction to regression and correlation)
4. Statistical inference (elementary view into estimation and testing hypothesis)

Recommended literature:
1. Anděl, J.: Statistické metody, Matfyzpress, Praha, 1998 (in Czech)
2. Rossman, A.J. et al.: Workshop Statistics: Discovery with Data and Fathom, 3rd ed. Wiley, 2009
3. Utts, J.M.: Seeing Through Statistics, 4th ed., Thomson Brooks/Cole, Belmont, 2014
4. Utts, J.M., Heckard R.F.: Mind on Statistics, 5th ed. Thomson Brooks/Cole, Belmont, 2014
5. Zvára, K., Štěpán, J.: Pravděpodobnost a matematická statistika, Matfyzpress, Praha, 2001 (in Czech)

Course language:
Slovak

Course assessment
Total number of assessed students: 252

A	B	C	D	E	FX
28.57	26.59	31.75	11.9	0.79	0.4

Provides: doc. RNDr. Ivan Žežula, CSc., RNDr. Martina Hančová, PhD.
Date of last modification: 22.02.2017
Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ UDM/10

Course name: Introduction to mathematics

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 1 / 2 **Per study period:** 14 / 28
Course method: present

Number of credits: 3

Recommended semester/trimester of the course: 1.

Course level: I.

Prerequisities:

Conditions for course completion:
Two tests during the semester.

Learning outcomes:
Repetition of problematic sections of the secondary mathematics by interesting tasks.

Brief outline of the course:
Simplification of algebraic expressions. Real number, absolute value of real numbers; equations and inequalities. Irrational equations and inequalities. Concept of function. Linear and quadratic function; equations and inequalities. Exponencial and logarithmic function; equations and inequalities. Goniometric functions; equations and inequalities. Complex numbers.

Recommended literature:
1. V. Medek - L. Mišík - T. Šalát: REPETITÓRIUM STREDOŠKOLSKEJ MATEMATIKY, Alfa Bratislava, 1976
2. S. Richtárová - D. Kyselová: MATEMATIKA (pomôcka pre maturantov a uchádzačov o štúdium na vysokých školách), Enigma Nitra, 1998
3. O. Hudec – Z. Kimáková – E. Švidroňová: PRÍKLADY Z MATEMATIKY (pre uchádzačov o štúdium na TU v Košiciach), EF TU Košice, 1999
4. F. Peller – V. Šáner – J. Eliáš – Ľ. Pinda: MATEMATIKA – Podklady na prijímacie testy pre uchádzačov o štúdium, Ekonóm Bratislava, 2000/2001
5. F. Vesajda – F. Talafous: ZBIERKA ÚLOH Z MATEMATIKY pre stredné všeobecnovzdelávacie školy a gymnáziá, SPN Bratislava, 1973
6. J. Lukášová – O. Odvárko – B. Riečan – J. Šedivý – J. Vyšín: ÚLOHY Z MATEMATIKY pre 4. ročník gymnázia, SPN Bratislava, 1976

Course language:
Slovak

Course assessment
Total number of assessed students: 426

A	B	C	D	E	FX
23.24	14.32	16.67	15.96	17.14	12.68

Provides: doc. RNDr. Matúš Harminc, CSc., RNDr. Timea Gábová, Mgr. Zuzana Gönciová
Date of last modification: 22.02.2017
Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ VEM/10	**Course name:** Selected topics in elementary mathematics

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

Number of credits: 3

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities: ÚMV/MAN2c/10

Conditions for course completion:
exam

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:
W.W. Esty: The Language of Mathematics, Montana State University, 2007.
F. Klein: Elementary mathematics from an advanced standpoint, Dower Publications, 1945.

Course language:
Slovak

Course assessment
Total number of assessed students: 178

A	B	C	D	E	FX
20.22	16.85	19.66	17.98	23.03	2.25

Provides: prof. RNDr. Jozef Doboš, CSc.

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ VKA/10	**Course name:** Selected topics in algebra

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 1 **Per study period:** 28 / 14
Course method: present

Number of credits: 4

Recommended semester/trimester of the course: 6.

Course level: I.

Prerequisities:

Conditions for course completion:
According to tests and to the exam.

Learning outcomes:
To obtain basic knowledge on universal algebra; to be able to apply the theory in concrete situations.

Brief outline of the course:
Relations, operations, algebraic structures. Substructures. Congruences, homomorphism theorems. Automorphism groups and endomorphism monoids. Terms, term operations, identities, varieties.

Recommended literature:
B. Jónsson: Topics in Universal Algebra, Springer-Verlag 1972
M. Kolibiar a kol.: Algebra a príbuzné disciplíny, Bratislava 1992

Course language:
Slovak

Course assessment
Total number of assessed students: 95

A	B	C	D	E	FX
5.26	18.95	25.26	26.32	22.11	2.11

Provides: prof. RNDr. Danica Studenovská, CSc.

Date of last modification: 22.02.2017

Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Arts

Course ID: ÚMV/ ZBR/14	**Course name:** Bridge Fundamentals

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: 5.

Course level: I.

Prerequisities:

Conditions for course completion:
Active participation on exercises.

Learning outcomes:
A student gets acquainted with fundamentals of the contract bridge, develops his/her logical thinking and consolidates his/her habits of positive social behaviour.

Brief outline of the course:
Bridge rules.
Principles of the bidding system Standard American.
Basic techniques of declarer's play.
Basic techniques of the defence.
Lead conventions, signals.
Common bidding conventions.
Selected advanced techniques of the card play.
Partnership cooperation in the contract bridge.
Bridge ethics.

Recommended literature:
T. Menyhért: Kurz bridžu 2013, http://new.bridgekosice.sk/kurz-bridzu-2013/
R. Pavlicek: Learn To Play Bridge!, http://www.rpbridge.net/1a00.htm
ACBL SAYC System Booklet, http://ebookbrowsee.net/acbl-sayc-pdf-d201415187

Course language:
Slovak or English

Notes:
Minimum number of participants is 4.

Course assessment
Total number of assessed students: 17

abs	n
94.12	5.88

Provides: doc. RNDr. Miroslav Ploščica, CSc., prof. RNDr. Mirko Horňák, CSc.

Date of last modification: 22.02.2017
Approved: Guaranteedoc. PhDr. Anna Džambová, PhD.Guaranteedoc. RNDr. Ondrej Hutník, PhD.