Course descriptions

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COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAGDM/1-INF-115/00	Algebra (1)

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 28 / 28
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:
homework, tests, written and oral final exam
Scale of assessment (preliminary/final): 40/60

Learning outcomes:
Understanding of basic notions and methods of linear algebra and ability to use them to solve various theoretical and practical problems.

Class syllabus:
Basic notions necessary for building abstract vector spaces (group, fields, vector spaces). Subspaces, linear dependence and independence of vectors, Steinitz theorem, basis of vector space. Matrices. Linear mappings. Composition of linear mappings. Inverse matrices. Solutions of hommogenous and nonhomogenous systems of linear equations. Determinants, basic properties and applications.

Recommended literature:
Lineárna algebra a geometria : Cesta z troch rozmerov s presahmi do príbuzných odborov / Pavol Zlatoš. Bratislava : Albert Marenčin, 2011; elektronická verzia dostupná na http:// thales.doa.fmph.uniba.sk/zlatos/la/LAG_A4.pdf
Algebra a teoretická aritmetika 1 / Tibor Katriňák ... [et al.]. Bratislava : Univerzita Komenského, 2002
Pěstujeme lineární algebru / Luboš Motl, Miloš Zahradník. Praha : Karolinum, 2002
Linear algebra done right / Sheldon Axler. New York : Springer, 1997
Custom course materials published on the course website.

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution Total number of evaluated students: 462					
A	B	C	D	E	FX
23,59	10,82	11,9	12,77	31,6	9,31
Lecturers: RNDr. Martin Sleziak, PhD.					
Last change: 08.02.2018					
Approved by: doc. RNDr. Daniel Olejár, PhD.					

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAGDM/1-INF-156/10	Algebra (2)

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 1 **per level/semester:** 28 / 14
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 2.

Educational level: I.

Prerequisites: FMFI.KAGDM/1-INF-115/00 - Algebra (1)

Course requirements:

Learning outcomes:
Understanding of basic notions and methods from group theory, ring theory and field theory and ability to use them to solve various theoretical and practical problems.

Class syllabus:
Groups, subgroups, homomorphisms, quotient groups. Rings, ideals, maximal ideal and prime ideals, their relationship to fields in integral domains when creating quotient ring. Euclidean domains, principal ideal domains, unique factorization domains. Divisibility and unique factorization. Rings of polynomials, factorization into irreducible polynomial, (multiple) roots, derivative and Taylor expansion. Field extensions. Non-solvability of angle trisection, doubling the cube, squaring the cirle. Finite filed and their classification, RSA.

Recommended literature:
Lineárna algebra a geometria : Cesta z troch rozmerov s presahmi do príbuzných odborov / Pavol Zlatoš. Bratislava : Albert Marenčin, 2011
Algebra a teoretická aritmetika 1 / Tibor Katriňák ... [et al.]. Bratislava : Univerzita Komenského, 2002
Electronic course notes published on the course web page

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 372

A	B	C	D	E	FX
19,35	9,68	12,9	20,43	33,87	3,76

Lecturers: RNDr. Martin Sleziak, PhD.

Last change: 15.01.2018

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAGDM/2-INF-182/15	**Course title:** Algebra (3)

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 1 **per level/semester:** 28 / 14
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 6.

Educational level: I., II.

Prerequisites:

Recommended prerequisites:
1-INF-115 Algebra (1) and 1-INF-156 Algebra (2)

Course requirements:
Individual work, test, final exam
Scale of assessment (preliminary/final): 20/80

Learning outcomes:
Students will be familiar with the most important concepts, results, methods and algorithms of linear algebra (for example computing canonical forms of matrices and other invariants with respect to congruency and similarity) with connections to geometry, computer graphics and computer science. Students will be able to actively use this knowledge in other disciplines.

Class syllabus:
Scalar product, orthonormal basis and orthogonal projection to a subspace. Quadratic forms and their canonical forms. Positive (semi-)definite matrices and quadratic forms and criteria for verifying definiteness. Change of basis, similar matrices. Similarity to a diagonal matrix. Eigenvalues and eigenvectors, characteristic polynomial. Orthogonal matrices, orthogonal similarity, Schur theorem, principal axes theorem. Symmetrical polynomials. Use of Fast Fourier transform for multiplication of large integers. PageRank algorithm.

Recommended literature:
Algebra a teoretická aritmetika 1 / Tibor Katriňák ... [et al.]. Bratislava : Univerzita Komenského, 2002
Lineárna algebra a geometria : Cesta z troch rozmerov s presahmi do príbuzných odborov / Pavol Zlatoš. Bratislava : Albert Marenčin, 2011
Electronic course notes published at the course web page

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 21

A	B	C	D	E	FX
52,38	19,05	9,52	4,76	4,76	9,52

Lecturers: doc. RNDr. Jaroslav Guričan, CSc.

Last change: 15.01.2018

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-220/00	Algorithms and Data Structures

Educational activities:
Type of activities: lecture
Number of hours:
per week: 4 **per level/semester:** 56
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 3.

Educational level: I.

Prerequisites:

Recommended prerequisites:
1-INF-166 Programming (2) in Java

Course requirements:
Homeworks, exam
Scale of assessment (preliminary/final): 0/100

Learning outcomes:
Students will be familiar with basics of design and analysis of efficient algorithms and data structures. The students will be able to analyze the time complexity of basic algorithms, to use basic algorithmic techniques (sorting and searching arrays), use basic efficient data structures and understand their implementation.

Class syllabus:
Asymptotic running time analysis, methods of estimation, notation. Sorting: meargesort, heapsort, quicksort; sorting in linear time. Data structures: priority queues, hash tables, binary search trees and their balancing. Efficient algorithm design techniques: dynamic programming, greedy algorithms.

Recommended literature:
Introduction to algorithms / Thomas H. Cormen ... [et al.]. Cambridge, Mass. : MIT Press, 2001
Algorithms in C : Parts 1-4 : Fundamentals, data structures, sorting, searching / Robert Sedgewick. Boston : Addison-Wesley, 1998
Custom course notes published at the course website

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 393

A	B	C	D	E	FX
38,42	14,5	15,01	14,25	12,21	5,6

Lecturers: RNDr. Michal Forišek, PhD.

Last change: 08.02.2018
Approved by: doc. RNDr. Daniel Olejár, PhD.

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KI/1-INF-991/15	**Course title:** BSc Project
Number of credits: 8	
Educational level: I.	
State exam syllabus:	
Last change: 02.06.2015	
Approved by: doc. RNDr. Daniel Olejár, PhD.	

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-911/15	BSc Seminar (1)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 1 **per level/semester:** 14
Form of the course: on-site learning

Number of credits: 1

Recommended semester: 5.

Educational level: I.

Prerequisites:

Course requirements:
Active participation, presentation, homework
Scale of assessment (preliminary/final): 50/50

Learning outcomes:
Students will be familiar with thesis requirements. They will select a thesis topic and a supervisor, find appropriate literature and submit the first portion of the thesis text.

Class syllabus:
Types of theses, their structure. Planning the thesis work, analyzing the problem. Student presentations of selected topics.

Recommended literature:
Ako písať vysokoškolské a kvalifikačné práce : Ako písať seminárne práce, ročníkové práce, práce študentskej vedeckej a odbornej činnosti, diplomové práce, záverečné a atestačné práce, dizertácie / Dušan Katuščák. Bratislava : Stimul, 1998

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 77

A	B	C	D	E	FX
53,25	25,97	11,69	9,09	0,0	0,0

Lecturers: doc. Mgr. Bronislava Brejová, PhD., RNDr. Jana Katreniaková, PhD., doc. RNDr. Dana Pardubská, CSc.

Last change: 09.02.2018

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-920/15	BSc Seminar (2)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 1 **per level/semester:** 14
Form of the course: on-site learning

Number of credits: 1

Recommended semester: 6.

Educational level: I.

Prerequisites:

Course requirements:
Active participation, presentation, homework
Scale of assessment (preliminary/final): 30/70

Learning outcomes:
Students will be able to present the results of their bachelor theses.

Class syllabus:
Student presentations, discussion.

Recommended literature:

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 53

A	B	C	D	E	FX
92,45	7,55	0,0	0,0	0,0	0,0

Lecturers: doc. Mgr. Bronislava Brejová, PhD., RNDr. Jana Katreniaková, PhD., doc. RNDr. Dana Pardubská, CSc.

Last change: 09.02.2018

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/2-INF-151/17	Biologically Motivated Theory of Languages

Educational activities:
Type of activities: course
Number of hours:
per week: 3 **per level/semester:** 42
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 5.

Educational level: I., II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 0

A	B	C	D	E	FX
0,0	0,0	0,0	0,0	0,0	0,0

Lecturers: doc. RNDr. Dana Pardubská, CSc.

Last change: 17.05.2017

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/1-AIN-407/15	Brain and Mind

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 70

A	B	C	D	E	FX
58,57	28,57	11,43	1,43	0,0	0,0

Lecturers: doc. PhDr. Ján Rybár, PhD.

Last change: 22.09.2017

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/1-AIN-408/15	Cognitive Laboratory

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 5.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 10

A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0

Lecturers: doc. PhDr. Ján Rybár, PhD.

Last change: 22.09.2017

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-420/15	Combinatorial Analysis (1)

Educational activities:
Type of activities: course
Number of hours:
per week: 4 **per level/semester:** 56
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 6.

Educational level: I.

Prerequisites: FMFI.KI/1-INF-160/00 - Introduction to Combinatorics and Graph Theory

Antirequisites: FMFI.KI/1-INF-420/00

Course requirements:
Exam: written
Approximate grading scale: A 90%, B 80%, C 70%, D 60%, E 50%
Scale of assessment (preliminary/final): 0/100

Learning outcomes:
The student is aware of basic methods for computing finite sums, solving recurrent relations, deriving and solving combinatorial relations, finite calculus; he understands the basic theory of ordinary generating functions and can practically apply it; he can derive simple asymptotic estimates.

Class syllabus:
Linear recurrent relations and methods used to solve them. Finite sums, double and triple sums, transformation of summation range. Iverson bracket. Finite calculus. Integer functions. Sums involving integer and fractional parts. Combinatorics: generalised binomial theorem, binomial coefficients and sums over them, combinatorial identitites. Basics of generating functions. Application of generating functions to solving recurrent relations. Introduction to asymptotic analysis. Asymptotic hierarchy of functions. Stirling formula applications.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 129

A	B	C	D	E	FX
24,03	17,05	17,05	15,5	20,16	6,2

Lecturers: doc. RNDr. Daniel Olejár, PhD., doc. RNDr. Martin Stanek, PhD., RNDr. Ján Mazák, PhD.

Last change: 28.10.2016
Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-167/15	Computational Complexity and Computability

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 3 / 1 **per level/semester:** 42 / 14
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 5.

Educational level: I.

Prerequisites:

Course requirements:
homework assignments, oral exam

Learning outcomes:
Student will be familiar with basic concepts and results in computational complexity and computability theory.

Class syllabus:
RAM and its variants, register and Turing machines, recursive functions, computations and computability equivalence in different models. Church thesis, existence of undecidable problems. Basic complexity classes and relationships between them, existence of hard problems. NP-hardness, Cook theorem and selected important NP-complete problems, relationship between decision and optimization problems. P vs NP, different approaches to defining efficient algorithms (approximation and randomized algorithms). PSPACE-complete problems.

Recommended literature:
Computational complexity : A modern approach / Sanjeev Arora, Boaz Barak. New York : Cambridge University Press, 2009

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 66

A	B	C	D	E	FX
53,03	6,06	18,18	7,58	15,15	0,0

Lecturers: prof. RNDr. Pavol Ďuriš, CSc.

Last change: 18.09.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-130/00	Computer Architecture

Educational activities:
Type of activities: lecture
Number of hours:
per week: 4 **per level/semester:** 56
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:
Final exam: both written and oral
Approximate grading scale: A 90%, B 80%, C 70%, D 60%, E 50%
Scale of assessment (preliminary/final): 0/100

Learning outcomes:
After completing the course, the student has a mathematical and technical knowledge necessary for understanding the operation of digital computers. It also has a basic knowledge on the internal implementation of the computer and interaction of hardware devices with the operating system.

Class syllabus:
Positional number systems, encoding of information in computers, fixed and floating point arithmetics, Boolean functions and operators, disjunctive normal forms (DNF), minimization of DNF, implementation of basic Boolean functions by electrical circuits. Combinational circuits. Space and time complexity of circuits. Sequential circuits. RTL language, control units, design of digital systems, multiplication and division of integers. Principles and architecture of von Neumann computer. Arithmetic and logic unit, instructions, formats of instructions, address modes, instruction set. Memory: associative, virtual (paging and segmenting), cache, stack memory. Input/ output devices, the control of I/O. Processor: control and arithmetic, registers, interrupt processing, microprogramming. RISC-CISC, pipelining, parallel data processing. Architectures of selected processors.

Recommended literature:
Tannenbaum A.: Structured computer organization, Prentice Hall, London, 1990
Langholz G.: Elements of computer organization, Prentice Hall, London, 1990

Languages necessary to complete the course:
slovak or english

Notes:

Past grade distribution Total number of evaluated students: 521					
A	B	C	D	E	FX
15,55	12,67	16,31	14,59	23,61	17,27
Lecturers: doc. RNDr. Daniel Olejár, PhD., RNDr. Richard Ostertág, PhD.					
Last change: 18.10.2016					
Approved by: doc. RNDr. Daniel Olejár, PhD.					

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-283/15	Computer Networks (1)

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 1 **per level/semester:** 28 / 14
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 4.

Educational level: I.

Prerequisites:

Antirequisites: FMFI.KI/1-INF-260/00

Course requirements:
Exercises, tests, written and oral final exam
Scale of assessment (preliminary/final): 40/60

Learning outcomes:
Students will be familiar with basic terminology of computer networks and principles of their operation. They will have practical experience with usage and configuration of technologies commonly used on local networks and on the internet.

Class syllabus:
Basic network terminology, layer models, OSI, TCP/IP
Physical layer - cables, wireless transmission
Data link layer - Ethernet, WiFi, PPP, Bluetooth.
Network layer – IP, routing, ICMP, ARP.
Transport layer – UDP, TCP, NAT.
Application layer – DNS, DHCP, Web, Mail, FTP, ...
IPv6
Security – firewall, VPN, SSL/TLS, security at the application layer (Web, Mail).

Recommended literature:
Computer Networks / Andrew S. Tanenbaum, David J. Wetherall. Boston : Pearson education, 2011
Computer Networks / Andrew S. Tanenbaum. Upper Saddle River : Prentice-Hall, 2003
Data and computer communications / William Stallings. Upper Saddle River : Prentice-Hall, 2004

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution Total number of evaluated students: 1273					
A	B	C	D	E	FX
16,5	14,85	17,52	23,8	21,84	5,5
Lecturers: RNDr. Jaroslav Janáček, PhD.					
Last change: 08.02.2018					
Approved by: doc. RNDr. Daniel Olejár, PhD.					

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KI/2-INF-183/15	**Course title:** Computer Networks (2)
Educational activities: **Type of activities:** lecture / practicals **Number of hours:** **per week:** 2 / 1 **per level/semester:** 28 / 14 **Form of the course:** on-site learning	
Number of credits: 4	
Recommended semester: 5.	
Educational level: I., II.	
Prerequisites:	
Recommended prerequisites: 1-INF-283	
Course requirements: assignments, written tests, written and oral final exam Scale of assessment (preliminary/final): 40/60	
Learning outcomes: Students will be familiar with principles and practical application of advanced technologies in computer networks and data communication.	
Class syllabus: 802.1q, STP, DOCSIS , ATM, IP routing protocols (BGP, OSPF, RIP, ...), advanced topics in TCP (syn-cookies, ECN, ...), advanced topics in WiFi, tunneling. Theoretical principles of data transmission, maximal bandwidth, CRC, ..., modulation techniques, data transmission - UART, USRT, synchronization Long-distance lines and multiplexing - optical networks - FDMA/TDMA/CDMA, synchronous optical networks (SDH, SONET).	
Recommended literature: Computer Networks / Andrew S. Tanenbaum, David J. Wetherall. Boston : Pearson education, 2011 Computer Networks / Andrew S. Tanenbaum. Upper Saddle River : Prentice-Hall, 2003 Data and computer communications / William Stallings. Upper Saddle River : Prentice-Hall, 2004	
Languages necessary to complete the course: Slovak, English	
Notes:	

Past grade distribution Total number of evaluated students: 41					
A	B	C	D	E	FX
26,83	46,34	17,07	4,88	4,88	0,0
Lecturers: RNDr. Jaroslav Janáček, PhD.					
Last change: 10.05.2016					
Approved by: doc. RNDr. Daniel Olejár, PhD.					

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/2-INF-145/15	Creating Internet Applications

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 28 / 28
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 6.

Educational level: I., II.

Prerequisites:

Course requirements:
Project, written and oral exam with practical component
Approximate grading scale: A 91%, B 81%, C 72%, D 63%, E 56%
Scale of assessment (preliminary/final): 50/50

Learning outcomes:
Students will be able to implement internet applications using selected modern technologies, software engineering practices and complex application framework.

Class syllabus:
Selected current technologies: client-side scripting, raster and vector client-side graphics rendering, two-way communication between the server and the client. Selected software-engineering practices: MVC design pattern, separation of presentation and content, testing. Complex application framework including user identification and authentication, access control, object-relational mapping, templates, navigation. Security of internet applications.

Recommended literature:
JavaScript profesionálně / Steven Holzner ; překlad Jan Gregor ... [et al.]. Praha : Mobil Media, 2003
CSS kaskádové styly pro webdesignéry / Marek Prokop. Brno : CP Books, 2005

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 90

A	B	C	D	E	FX
22,22	12,22	28,89	21,11	14,44	1,11

Lecturers: RNDr. Richard Ostertág, PhD., RNDr. Jana Katreniaková, PhD.

Last change: 18.10.2016

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/2-INF-178/15	Cryptology (1)

Educational activities:
Type of activities: lecture
Number of hours:
per week: 4 **per level/semester:** 56
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 5.

Educational level: I., II.

Prerequisites:

Course requirements:
Homewrok assignments, test, final written exam
Scale of assessment (preliminary/final): 0/100

Learning outcomes:
The students will have the knowledge of basic cryptographic constructions; they will understand security guarantees provided by these constructions, and assumptions required for their security. The students will be able to choose a suitable cryptographic construction for given application / information system.

Class syllabus:
symmetric ciphers (block and stream ciphers), asymmetric ciphers, underlying problems for asymmetric constructions, hash functions, message authentication codes, digital signatures, passwords, secret sharing schemes, cryptographic protocols and related attacks, zero-knowledge proofs

Recommended literature:
Cryptography : Theory and practice / Douglas R. Stinson. Boca Raton, Fla. : Chapman & Hall, 2006
Cryptography, An Introduction: Third Edition / Nigel Smart (http://www.cs.bris.ac.uk/~nigel/Crypto_Book/)

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 38

A	B	C	D	E	FX
7,89	7,89	21,05	31,58	31,58	0,0

Lecturers: doc. RNDr. Martin Stanek, PhD.

Last change: 21.08.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/2-INF-270/15	Design and Evaluation of User Interfaces

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 5.

Educational level: I., II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 14

A	B	C	D	E	FX
57,14	28,57	0,0	14,29	0,0	0,0

Lecturers: Sapan Bhatia, PhD.

Last change: 02.05.2016

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-310/00	Design of Efficient Algorithms

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 3 / 1 **per level/semester:** 42 / 14
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 4.

Educational level: I.

Prerequisites: FMFI.KI/1-INF-220/00 - Algorithms and Data Structures and FMFI.KI/1-INF-160/00 - Introduction to Combinatorics and Graph Theory

Course requirements:
homework, test, oral final exam
Scale of assessment (preliminary/final): 30/70

Learning outcomes:
Student will be able to apply basic methods of efficient algorithm design and to analyze time complexity of algorithms

Class syllabus:
The dictionary problem (2-3 trees, hashing). Union/Find-Set problem. Algorithms for finding the shortest paths and the minimum spanning trees in graphs. The principles of efficient algorithm design (including particular applications) . Divide and conquer. Dynamic programming. Greedy algorithms, Balancedness and the choice of an appropriate data structure. The P and NP classes, polynomial reducibility (Cook's theorem) and NP-complete problems, Approximation algorithms. String matching algorithms,

Recommended literature:
Introduction to algorithms / Thomas H. Cormen ... [et al.]. Cambridge, Mass. : MIT Press, 2001

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 369

A	B	C	D	E	FX
46,07	25,47	13,82	10,03	4,61	0,0

Lecturers: prof. RNDr. Pavol Ďuriš, CSc.

Last change: 08.02.2018

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-233/13	English Conversation Course (1)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3., 5.

Educational level: I., II.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 100/0

Learning outcomes:

Class syllabus:
The content of the course is general English.
The language level is B2/C1 (Upper-Intermediate/Lower Advanced).

Recommended literature:
Selection of materials from Inside Out Upper-Intermediate, Cutting Edge Upper-Intermediate, New English File Upper-Intermediate, British and American newspapers and journals
Recordings: authentic and semi-authentic (source: BBC, CNN, coursebook recordings)

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 135

A	B	C	D	E	FX
58,52	18,52	9,63	2,22	1,48	9,63

Lecturers: PhDr. Elena Klátiková

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-234/13	English Conversation Course (2)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4., 6.

Educational level: I., II.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 100/0

Learning outcomes:

Class syllabus:
The course is a follow-up to the Conversation Course in English (1). The content of the course is general English.
The language level is B2/C1 (Upper-Intermediate/Lower Advanced).

Recommended literature:
Selection of materials from Inside Out Upper-Intermediate, Cutting Edge Upper-Intermediate, New English File Upper-Intermediate, British and American newspapers and journals
Recordings: authentic and semi-authentic (source: BBC, CNN, coursebook recordings)

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 62

A	B	C	D	E	FX
67,74	19,35	4,84	0,0	0,0	8,06

Lecturers: PhDr. Elena Klátiková

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-131/00	English Language (1)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
On entering the first semester, students´ knowledge of English is tested and they are divided into groups according to the results of the placement test. In the groups of pre-intermediate and intermediate students, fundamentals of technical English are taught. Advanced students take classes of technical English for their field of study: English for mathematics, for physics, for computer science, English for management and economic and financial mathemathics.

Recommended literature:
Zemanová, A.: Anglický jazyk pre študentov FMFI UK. Kurz pre mierne pokročilých. Univerzita Komenského v Bratislave, Bratislava 2012, ISBN 978-80-223-2829-6
Erdélyi L., Gombárik P.: Anglický jazyk pre študentov FMFI UK. Aplikovaná matematika. Univerzita Komenského v Bratislave, Bratislava 2012, ISBN 978-80-223-3216-3
Gombárik P.: Anglický jazyk pre študentov FMFI UK. Matematika. Univerzita Komenského v Bratislave, Bratislava 2012, ISBN 978-80-223-3207-1
Klátiková E.: Anglický jazyk pre študentov FMFI UK. Informatika. Univerzita Komenského v Bratislave, Bratislava 2012, ISBN 978-80-223-3196-8
Alena Zemanová: Anglický jazyk pre študentov FMFI UK. Fyzika. Univerzita Komenského v Bratislave, Bratislava 2014, 92 strán, ISBN: 978-80-223-3477-8.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 4568

A	B	C	D	E	FX
30,12	23,82	18,83	13,05	8,08	6,11

Lecturers: PhDr. Elena Klátiková, PhDr. Alena Zemanová, Mgr. Ing. Jana Kočvarová, Ing. Eva Vartíková, Mgr. Alexandra Maďarová, Mgr. Renáta Čárska, Mgr. Ľubomíra Kožehubová

Last change: 02.06.2015
Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-132/00	English Language (2)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
This is a continuation of the course English (1) designed for pre-intermediate students. Fundamental vocabulary is presented through selected topics in mathematics, physics and informatics. The lessons also contain revision of elementary grammar. Generally, it is a necessary preliminary to advanced programs.

Recommended literature:
Zemanová, A.: Anglický jazyk pre študentov FMFI UK. Kurz pre mierne pokročilých. Univerzita Komenského v Bratislave, Bratislava 2012, ISBN 978-80-223-2829-6

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 1350

A	B	C	D	E	FX
18,74	21,19	25,93	17,11	11,26	5,78

Lecturers: PhDr. Elena Klátiková, PhDr. Alena Zemanová, Mgr. Ing. Jana Kočvarová, Ing. Eva Vartíková, Mgr. Alexandra Maďarová, Mgr. Renáta Čárska, Mgr. Ľubomíra Kožehubová

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-231/00	English Language (3)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
The subject continues the program of English (2). Students take classes of special English for their field of study: English for mathematics, English for physics, English for computer science, English for management and economic and financial mathemathics.
The subject requires advanced knowledge of general English.

Recommended literature:
Erdélyi L., Gombárik P.: Anglický jazyk pre študentov FMFI UK. Aplikovaná matematika. Univerzita Komenského v Bratislave, Bratislava 2012, ISBN 978-80-223-3216-3
Gombárik P.: Anglický jazyk pre študentov FMFI UK. Matematika. Univerzita Komenského v Bratislave, Bratislava 2012, ISBN 978-80-223-3207-1
Klátiková E.: Anglický jazyk pre študentov FMFI UK. Informatika. Univerzita Komenského v Bratislave, Bratislava 2012, ISBN 978-80-223-3196-8
Alena Zemanová: Anglický jazyk pre študentov FMFI UK. Fyzika. Univerzita Komenského v Bratislave, Bratislava 2014, 92 strán, ISBN: 978-80-223-3477-8.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 1134

A	B	C	D	E	FX
16,67	19,4	22,75	17,55	18,52	5,11

Lecturers: PhDr. Elena Klátiková, PhDr. Alena Zemanová, Mgr. Ing. Jana Kočvarová, Ing. Eva Vartíková, Mgr. Alexandra Maďarová, Mgr. Renáta Čárska, Mgr. Ľubomíra Kožehubová

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-232/10	English Language (4)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Students take classes of special English for their field of study: English for mathematics, English for physics, English for computer science, English for management and economic and financial mathemathics.

Recommended literature:
Erdélyi L., Gombárik P.: Anglický jazyk pre študentov FMFI UK. Aplikovaná matematika. Univerzita Komenského v Bratislave, Bratislava 2012, ISBN 978-80-223-3216-3
Gombárik P.: Anglický jazyk pre študentov FMFI UK. Matematika. Univerzita Komenského v Bratislave, Bratislava 2012, ISBN 978-80-223-3207-1
Klátiková E.: Anglický jazyk pre študentov FMFI UK. Informatika. Univerzita Komenského v Bratislave, Bratislava 2012, ISBN 978-80-223-3196-8
Alena Zemanová: Anglický jazyk pre študentov FMFI UK. Fyzika. Univerzita Komenského v Bratislave, Bratislava 2014, 92 strán, ISBN: 978-80-223-3477-8.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 2248

A	B	C	D	E	FX
28,43	28,51	20,95	10,9	5,83	5,38

Lecturers: Mgr. Ing. Jana Kočvarová, Mgr. Alexandra Maďarová, Ing. Eva Vartíková, PhDr. Alena Zemanová, PhDr. Elena Klátiková, Mgr. Renáta Čárska, Mgr. Ľubomíra Kožehubová

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-215/14	Formal Languages and Automata (1)

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 3 / 2 **per level/semester:** 42 / 28
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 3.

Educational level: I.

Prerequisites:

Course requirements:
homework, test, written and oral final exam
Scale of assessment (preliminary/final): 30/70

Learning outcomes:
Students will be familiar with basic models of automata and grammars, and they will be ale to compare their computational power. They will understand algorithmic problem (un)decidability and a formal definition of computational complexity of a problem.

Class syllabus:
Chomsky hierarchy of formal grammars. Finite state automata and pushdown automata. Basic properties of regular and context-free languages, regular expressions. Turing machines. Undecidable problems. Introduction to computational complexity theory.

Recommended literature:
The Mathematical theory of context free languages / Seymour Ginsburg. New York : McGraw Hill, 1966
Formálne jazyky a automaty / John E. Hopcroft, Jeffrey D. Ullmanm ; preložili Branislav Rovan, Peter Mikulecký. Bratislava : Alfa, 1978
Introduction to Automata Theory, Languages, and Computation / John E. Hopcroft, Rajeev Motwani, Jeffrey D. Ullman. Boston : Pearson/Addison-Wesley, 2007

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 442

A	B	C	D	E	FX
22,17	5,2	3,39	21,04	34,62	13,57

Lecturers: prof. RNDr. Branislav Rovan, PhD., RNDr. Peter Kostolányi, PhD., Mgr. Šimon Sádovský

Last change: 08.02.2018
Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/2-INF-186/15	Formal Languages and Automata (2)

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 3 / 2 **per level/semester:** 42 / 28
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 4., 6.

Educational level: I., II.

Prerequisites:

Recommended prerequisites:
1-INF-215 and 1-INF-220

Course requirements:
Homework assignments and semester tests, final written and oral exam.
Scale of assessment (preliminary/final): 30/70

Learning outcomes:
Students are familiar with properties of all classes in the Chomsky hierarchy. They understand the concept of decidability and complexity and know decidability status of basic problems for individual classes of the Chomsky hierarchy. They are familiar with basic methods of syntactic analysis and their connection to deterministic push-down automata.

Class syllabus:
Context-sensistive grammars, linear bounded automata. Properties of language classes in the Chomsky hierarchy. Decidable and undecidable problems in the Chomsky hierarchy. Deterministic context-free grammars and basic methods of syntactic analysis. Computational complexity. Fundamental complexity classes and their properties.

Recommended literature:
Introduction to Automata Theory, Languages, and Computation / John E. Hopcroft, Rajeev Motwani, Jeffrey D. Ullman. Boston : Pearson/Addison-Wesley, 2007
Gries, David. "Compiler construction for digital computers." Wiley (1971).

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 25

A	B	C	D	E	FX
64,0	0,0	28,0	4,0	0,0	4,0

Lecturers: prof. RNDr. Branislav Rovan, PhD., RNDr. Peter Kostolányi, PhD.

Last change: 10.05.2016
Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-141/00	French Language (1)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1.

Educational level: I., II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
French language is taught at two levels: beginner and intermediate. Students opt for one of them depending on whether they wish to obtain the fundamentals of the language or wish to maintain and/or improve previous knowledge of French.

Recommended literature:
Pravda, Pravdová: Učebnica francúzštiny pre samoukov a kurzy, SPN Bratislava 1999, ISBN 80-08-00431-2

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 374

A	B	C	D	E	FX
39,84	22,19	21,66	10,16	2,14	4,01

Lecturers: Mgr. Pavel Vilášek, Mgr. Ľubomíra Kožehubová

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-142/00	French Language (2)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I., II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
The subject continues the program of French language (1) and provides courses of essential and intermediate French language.

Recommended literature:
Pravda, Pravdová: Učebnica francúzštiny pre samoukov a kurzy, SPN Bratislava 1999, ISBN 80-08-00431-2
Blažena Srncová: Učebnica francúzštiny pre študentov Matematicko-fyzikálnej fakulty , UK 1983
Kolektív Lingea, s.r.o.: Slovensko-francúzsky hovorník, Bratislava 2008

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 237

A	B	C	D	E	FX
34,18	27,85	21,52	11,39	2,53	2,53

Lecturers: Mgr. Pavel Vilášek, Mgr. Ľubomíra Kožehubová

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-241/00	French Language (3)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3.

Educational level: I., II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
The subject provides a course of intermediate French language, covering not only general, but also technical language.

Recommended literature:
Pravda, Pravdová: Učebnica francúzštiny pre samoukov a kurzy, SPN Bratislava 1999, ISBN 80-08-00431-2
Blažena Srncová: Učebnica francúzštiny pre študentov Matematicko-fyzikálnej fakulty , UK 1983
Kolektív Lingea, s.r.o.: Slovensko-francúzsky hovorník, Bratislava 2008

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 93

A	B	C	D	E	FX
33,33	30,11	23,66	7,53	1,08	4,3

Lecturers: Mgr. Pavel Vilášek, Mgr. Ľubomíra Kožehubová

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-242/00	French Language (4)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4.

Educational level: I., II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
The subject provides a course of intermediate French covering not only general, but also technical French language.

Recommended literature:
Pravda, Pravdová: Učebnica francúzštiny pre samoukov a kurzy, SPN Bratislava 1999, ISBN 80-08-00431-2
Blažena Srncová: Učebnica francúzštiny pre študentov Matematicko-fyzikálnej fakulty , UK 1983
Kolektív Lingea, s.r.o.: Slovensko-francúzsky hovorník, Bratislava 2008
Zarha Lahmidi: Sciences-techniques.com, ISBN 209-0331186-0, CLE international, 2005

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 63

A	B	C	D	E	FX
31,75	38,1	20,63	3,17	1,59	4,76

Lecturers: Mgr. Pavel Vilášek, Mgr. Ľubomíra Kožehubová

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAGDM/1-MAT-551/10	Geometry for Graphics (1)

Educational activities:
Type of activities: course
Number of hours:
per week: 4 **per level/semester:** 56
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 5.

Educational level: I., II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 680

A	B	C	D	E	FX
18,97	15,15	17,06	20,44	18,82	9,56

Lecturers: Mgr. Ľudovít Balko, PhD.

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAGDM/1-MAT-552/10	Geometry for Graphics (2)

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 6.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 428

A	B	C	D	E	FX
21,73	11,45	16,59	18,69	27,8	3,74

Lecturers: Mgr. Ľudovít Balko, PhD.

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-151/00	German Language (1)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1.

Educational level: I., II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
German language is taught at three levels: beginner, intermediate and advanced. Students opt for one of them depending on whether they need to learn the fundamentals or maintain and/or improve their previous knowledge.

Recommended literature:
Vilášek, P.: Nemčina pre študentov FMFI, Na webovej stránke autora v elektronickej podobe.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 648

A	B	C	D	E	FX
31,94	29,17	21,3	10,03	2,93	4,63

Lecturers: Mgr. Pavel Vilášek, Mgr. Alexandra Maďarová

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-152/00	German Language (2)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I., II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
The course continues the program of German language (1). German language is taught at three levels: beginner, intermediate, advanced.

Recommended literature:
Vilášek, P.: Nemčina pre študentov FMFI, Na webovej stránke autora v elektronickej podobe.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 408

A	B	C	D	E	FX
29,17	22,06	23,77	14,95	3,68	6,37

Lecturers: Mgr. Pavel Vilášek, Mgr. Alexandra Maďarová

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-251/00	German Language (3)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3.

Educational level: I., II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
The subject continues the program of German language (2). It provides a course of intermediate and advanced German language.

Recommended literature:
Vilášek, P.: Nemčina pre študentov FMFI, Na webovej stránke autora v elektronickej podobe.
Aus moderner Technik und Naturwissenschaft, 1999, Max Hueber Verlag, D-85737, ISBN 3-19-001629-1

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 148

A	B	C	D	E	FX
38,51	27,03	22,3	6,76	2,7	2,7

Lecturers: Mgr. Pavel Vilášek, Mgr. Alexandra Maďarová

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-252/00	German Language (4)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4.

Educational level: I., II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
The subject continues the program of German language (3). It provides a course of intermediate and advanced German language.

Recommended literature:
Vilášek, P.: Nemčina pre študentov FMFI, Na webovej stránke autora v elektronickej podobe.
Vilma Václavíková: Nemčina pre študentov MFF UK, Vysokoškolský učebný text pre potrebu študentov KJP, č. 9793/1982 C VIII/2, 1983

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 78

A	B	C	D	E	FX
35,9	28,21	14,1	12,82	3,85	5,13

Lecturers: Mgr. Pavel Vilášek, Mgr. Alexandra Maďarová

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/2-INF-174/15	Graph Theory

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 3 / 1 **per level/semester:** 42 / 14
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 5.

Educational level: I., II.

Prerequisites:

Recommended prerequisites:
1-INF-160

Course requirements:
Exam
Scale of assessment (preliminary/final): 0/100

Learning outcomes:
The course will provide students with solid foundations of graph theory by proving key classical theorems and explaining the most important graph algorithms. Emphasis is also placed on motivation from other scientific disciplines and technology and possible applications of the covered topics.

Class syllabus:
Basic terminology: trees, bipartite graphs, graph and labyrinth search. Eulerian graphs. matchings in graphs, König's theorem, Hall theorem and its corollaries. measuring of graph connectivity. Menger's theorem, Planar graphs, Euler's theorem. Kuratowski's theorem. Graph coloring: some NP-hard problems, greedy algorithm. Brooks' theorem. Vizing's theorem. Coloring of planar graphs. Flows, Ford–Fulkerson algorithm and its applications. Integer and group flows, relationship to coloring. Hamiltonian graphs. Chvátal's theorem. Random graphs, probabilistic models, properties of random graphs.

Recommended literature:

Languages necessary to complete the course:
Slovak, English.

Notes:

Past grade distribution
Total number of evaluated students: 29

A	B	C	D	E	FX
37,93	10,34	20,69	20,69	10,34	0,0

Lecturers: doc. RNDr. Edita Mačajová, PhD., prof. RNDr. Martin Škoviera, PhD.

Last change: 10.05.2016
Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAGDM+KAI/1-INF-240/15	Graphical Systems, Visualization, Multimedia

Educational activities:
Type of activities: course
Number of hours:
per week: 3 **per level/semester:** 42
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 6.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 1079

A	B	C	D	E	FX
24,0	26,97	22,15	11,31	7,69	7,88

Lecturers: doc. RNDr. Andrej Ferko, PhD.

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KI/1-INF-961/15	**Course title:** Informatics
Number of credits: 3	
Educational level: I.	
State exam syllabus:	
Last change: 02.06.2015	
Approved by: doc. RNDr. Daniel Olejár, PhD.	

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/1-MXX-491/15	Integrated Education of People with Disabilities

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 24

A	B	C	D	E	FX
95,83	4,17	0,0	0,0	0,0	0,0

Lecturers: PaedDr. Elena Mendelová, CSc.

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-160/00	Introduction to Combinatorics and Graph Theory

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 28 / 28
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 2.

Educational level: I.

Prerequisites: FMFI.KI/1-INF-120/00 - Introduction to Discrete Structures

Course requirements:
test, final exam
Scale of assessment (preliminary/final): 30/70

Learning outcomes:
Students will be fmailiar with basic terminology, results, methods and algorithms from graph theory and combinatorics.

Class syllabus:
Combinatorics: basic types of combinatorial problems and basic notions. Permutations, variations, combinations. Pascal formula, binomial and polynomial theorem. Newton polynomial theorem. Combinatorial identities, estatimations of combinatorial numbers. Inclusion/exclusion principle. Recurrence relations, generating functions. Summation methods, finite calculus. Graph theory: motivation problems. Definition of various types of graphs. Basic notions. Trees. Searching of graphs. Euler path, Hamiltonian cycles. Graph colouring. Planar graphs. Enumeration of trees. Algorithms for finding the shortest path, the minimum spanning tree and the maximum matching.

Recommended literature:
Diskrétna matematika 1 : Úvod do teórie množín, teórie booleovských funkcií a matematickej logiky / Daniel Olejár, Škoviera Martin. Bratislava : Univerzita Komenského, 1992

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 372

A	B	C	D	E	FX
19,62	11,02	26,08	26,34	16,67	0,27

Lecturers: prof. RNDr. Martin Škoviera, PhD., doc. RNDr. Edita Mačajová, PhD., Mgr. Anna Kompišová

Last change: 08.02.2018

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-230/00	Introduction to Database Systems

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 28 / 28
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 3.

Educational level: I.

Prerequisites:

Antirequisites: FMFI.KAI/1-AIN-221/15 and FMFI.KAI/1-AIN-222/15

Course requirements:
homeworks, final exam
Scale of assessment (preliminary/final): 50/50

Learning outcomes:
Students will be familiar with problems of database system use and implementation and techniques of solving these problems. The course will introduce the theory and practice of relational model and transaction systems. Students will be able to use the SQL relational language, Datalog and principles of relational database design.

Class syllabus:
Data models, the architecture of DBMS and modelling of reality; relational model; relational query languages, SQL, the theory of relational databases design (functional dependences, keys and normal forms), logical and deductive databases, datalog, negation in databases, transactions and the processing of transactions, data structures for two-level memory, physical algebra.

Recommended literature:
Foundations of databases / Serge Abiteboul, Richard Hull, Victor Vianu. Reading : Addison-Wesley, 1995
Database systems : The complete book / Hector Garcia-Molina, Jeffrey D. Ullman, Jennifer Widom. Upper Saddle River : Prentice-Hall, 2002

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 659

A	B	C	D	E	FX
16,39	9,41	15,17	13,66	19,42	25,95

Lecturers: doc. Mgr. Tomáš Plachetka, Dr., RNDr. Michal Rjaško, PhD., RNDr. Ján Mazák, PhD.

Last change: 09.02.2018
Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-120/00	Introduction to Discrete Structures

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 28 / 28
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:
test, written final exam
Scale of assessment (preliminary/final): 30/70

Learning outcomes:
Students will be familiar with logical structure of mathematics, methods of mathematical proofs and discrete structures necessary for study of mathematics and informatics.

Class syllabus:
Propositional calculus. Quantified propositions. Mathematical proofs. Mathematical induction. Intuitive set theory and its paradoxes. Basic set relations and operations on sets. Sets cardinality. Finite, infinite, countable and uncountable sets.

Recommended literature:
Diskrétna matematika 1 : Úvod do teórie množín, teórie booleovských funkcií a matematickej logiky / Daniel Olejár, Škoviera Martin. Bratislava : Univerzita Komenského, 1992
Teória množín / Tibor Šalát, Jaroslav Smítal. Bratislava : Univerzita Komenského, 1995
Množiny a všeličo okolo nich / Lev Bukovský. Košice : Univerzita Pavla Jozefa Šafárika, 2005

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 471

A	B	C	D	E	FX
23,99	13,38	16,56	15,29	25,48	5,31

Lecturers: doc. RNDr. Eduard Toman, CSc., doc. RNDr. Robert Lukoťka, PhD.

Last change: 08.02.2018

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-520/00	Introduction to Information Security

Educational activities:
Type of activities: lecture
Number of hours:
per week: 3 **per level/semester:** 42
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 6.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
The role of information security. The major security attributes of information (confidentiality, availability, authenticity, integrity, privacy, etc.) Basic notions of information security (system, asset, threat, vulnerability, risk). Building a new or securing an existing IT system. Security projects (description of the system and of its environment, identification of relevant threats, qualitative risk analysis, contrameasures). Risk management (incident handling, disaster recovery, business continuity planning). Management of information security. Evaluation and certification of IT system/product. Introduction to cryptology and PKI.

Recommended literature:
An Introduction to Computer Security. The NIST Handbook., volume 800-12 of NIST Special Publication. NIST, 1996.
Swanson M. Guide for Developing Security Plans for Information Technology Systems, volume 800-18 of NIST Special Publication. NIST, 1998.
Swanson M. and Guttman B. Generally Accepted Principles and Practices for Securing Information Technology Systems, volume 800-14 of NIST Special Publication. NIST, 1996.
International Standard ISO/IEC 17799, Information technology - Code of practice for information security management,. ISO/IEC, 2000.
BS 7799 Information Security management - Part 2: Specification for information security management systems, Version 4.4 Draft for public comment, Bsi, 2002
Common Methodology for Information Technology Security Evaluation, Introduction and General Model, volume 1 of CEM 97/017. ISO/IEC, 1997.
International Standard ISO/IEC 15408 Common Criteria for Information Technology Security Evaluation. Annexes, volume 2a. ISO/IEC, 1998.
International Standard ISO/IEC 15408 Common Criteria for Information Technology Security Evaluation. Introduction and General Model, volume 1. ISO/IEC, 1998.
International Standard ISO/IEC 15408 Common Criteria for Information Technology Security Evaluation, Security Assurance Requirements, volume 3. ISO/IEC, 1998.

International Standard ISO/IEC 15408 Common Criteria for Information Technology Security Evaluation. Security Functional Requirements, volume 2. ISO/IEC, 1998.
Common Methodology for Information Technology Security Evaluation, Evaluation Methodology, volume 2 of CEM 99/045. ISO/IEC, 1999.
Stoneburner G., Goguen A., and Feringa A. Risk Management Guide for Information Technology Systems. Recommendations of the National Institute of Standards and Technology, volume 800-30 of NIST Special Publication. NIST, 2001.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 782

A	B	C	D	E	FX
11,13	12,02	24,04	30,56	21,61	0,64

Lecturers: doc. RNDr. Daniel Olejár, PhD., RNDr. Michal Rjaško, PhD.

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-210/00	Introduction to Mathematical Logic

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 28 / 28
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 3.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Language, semantics and syntax of propositional calculus. Compactness theorems. Axioms and deductive rules. Basic theorems of propositional calculus. Post theorems. Consistency and completness of propositional calculus. Language, axioms and deductive rules of predicate calculus. Deduction theorem. Basic theorems of predicate calculus. Compactness and consistency of predicate calculus.
Axioms of equality and theories with equality. Expressing mathematical statments by formulas of predicate calculus.

Recommended literature:
Mendelson E. Introduction to Mathematical Logic. Chapman & Hall, London, 4th edition, 1997.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 687

A	B	C	D	E	FX
16,01	10,48	11,79	11,94	37,12	12,66

Lecturers: doc. RNDr. Eduard Toman, CSc., Mgr. Anna Kompišová

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/1-MXX-427/00	Introduction to Philosophy of Language

Educational activities:
Type of activities: lecture / seminar
Number of hours:
per week: 1 / 1 **per level/semester:** 14 / 14
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Frege's "semantic triangle"; Russell's theory of descriptions; relation between language and "world" (Wittgenstein's "Tractatus logico-philosophicus"); critics of traditional philosophy and its "pseudo-problems"; natural (ordinary) language and artificial languages; two approaches to ordinary language; Quine's critics of dogmas of empiricism; expression meaning as an object (entity) and expression meaning as its use; language games (Wittgenstein's "Philosophical Investigations"), rules and rule following; undestanding - role of community and role of form of life; Oxonian schol of linguistic analysis (P. F. Strawson, J. L. Austin, H. P. Grice)

Recommended literature:
Frege, G.: "O zmysle a denotáte.", In: Filozofia, roč. 47, 1992, č. 6.
Russell, B.: "Opisy.", In: Organon F, 1995, č. 2
Peregrin, J.: Kapitoly z analytické filosofie, Filosofia, Praha 2005.
Filozofia prirodzeného jazyka, Archa, Bratislava 1992

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 19

A	B	C	D	E	FX
84,21	10,53	5,26	0,0	0,0	0,0

Lecturers: PhDr. Dezider Kamhal, PhD.

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/1-MXX-403/00	Introduction to Psychology of Jean Piaget (1)

Educational activities:
Type of activities: lecture
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Piaget's theory of cognitive development
- the sensorimotor stage
- the preoperational stage
- the concrete operational stage
- the formal operational stage

Recommended literature:
J. Piaget, B. Inhelderová: Psychológia dieťaťa. Bratislava: Sofa 1997.
H. E. Gruber, J. J. Voneche, Eds.: Essential Piaget. London: 1995.
CD ROM Piaget, Piaget's videos (Geneva University)

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 0

A	B	C	D	E	FX
0,0	0,0	0,0	0,0	0,0	0,0

Lecturers: doc. PhDr. Ján Rybár, PhD.

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/1-MXX-404/00	Introduction to Psychology of Jean Piaget (2)

Educational activities:
Type of activities: lecture
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
1. Constructivist models (Piaget).
2. Associationist models (Behaviorism).
3. Sociocognitive models (Vygotsky).
4. Nativist models (Chomsky and Fodor).

Recommended literature:
K. Richardson: Models of Cognitive Development. London: Psychology Press 2003.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 1

A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0

Lecturers: doc. PhDr. Ján Rybár, PhD.

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/2-INF-187/15	Introduction to Theory of Programming

Educational activities:
Type of activities: course
Number of hours:
per week: 4 **per level/semester:** 56
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 6.

Educational level: I., II.

Prerequisites:

Course requirements:
Written tests
Scale of assessment (preliminary/final): 40/60

Learning outcomes:
Student will be familiar with principles of program abstraction with the goal to analyse properties of program control structures independently from a particular program interpretation, principles and methods of proving correctness of program correctness, foundations of formal semantics of imperative and recursive programming languages

Class syllabus:
Program schemes
- basic notions - standard scheme, interpretation, Herbrand interpretations, properties of program schemes
- decidability of basic properties - basic undecidability results, subclasses of schemes with decidable properties (free and Yanov schemes)
- comparative schematology - relations between classes of standard, structured and recursive schemes, partially interpreted schemes
Program correctness
- partial and total correctness - invariants, inductive formulas, weakest precondition, strongest postcondition
- proof methods - Floyd method, Hoare-like proof systems, used induction principles, proving properties of recursive programs
- systematic development of correct programs
Semantics of programs and languages
- program meaning - principles of operational, denotational and axiomatic semantics
- semantic domains - algebraic structure, construction of domains
- formal semantics - operational and denotational semantics of imperative and recursive programs, types and semantics
- comparison of operational and denotational semantics - imperative programs, recursive programs (correctness of computational rules, criteria of correctness)

Recommended literature:

Zohar Manna. Mathematical theory of computation. McGraw Hill, 1974
Prívara, I.: Úvod do teórie programovania, lecture notes, 2014 – pdf version

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 3

A	B	C	D	E	FX
66,67	0,0	0,0	0,0	33,33	0,0

Lecturers: RNDr. Igor Prívara, CSc., Mgr. Michal Anderle

Last change: 13.09.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KZVI/1-AIN-112/15	Introduction to Web Technologies

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 28 / 28
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 1.

Educational level: I.

Prerequisites:

Antirequisites: FMFI.KZVI/1-AIN-610/00

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 1798

A	B	C	D	E	FX
44,61	15,02	14,29	10,9	7,45	7,73

Lecturers: PaedDr. Roman Hrušecký, PhD., RNDr. Marek Nagy, PhD.

Last change: 22.09.2017

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/1-AIN-406/15	Language and Cognition

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 4.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 30

A	B	C	D	E	FX
30,0	46,67	20,0	3,33	0,0	0,0

Lecturers: doc. PhDr. Ján Rybár, PhD.

Last change: 22.09.2017

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/1-AIN-510/15	Linux - Principles and Means

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 1 / 1 **per level/semester:** 14 / 14
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 3.

Educational level: I.

Prerequisites:

Antirequisites: FMFI.KAI/1-AIN-510/00

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 871

A	B	C	D	E	FX
50,17	16,99	12,63	8,04	7,35	4,82

Lecturers: RNDr. Marek Nagy, PhD.

Last change: 22.09.2017

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/1-AIN-500/00	Linux for Users

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:
The aim of the course is to acquire skills to work on the command line of Linux operating system. The course is designed not only for beginners.

Class syllabus:
Text console
Directories and files
Users, groups, redirection and searching
Atributes of files and directories
Text editor vim
Sorting and selecting
Finding
Processes
sed - stream editor
awk
bash scripts

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 1334

A	B	C	D	E	FX
40,33	17,02	14,47	11,17	12,82	4,2

Lecturers: RNDr. Marek Nagy, PhD.

Last change: 22.09.2017

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KMANM/1-INF-110/00	Mathematical Analysis (1)

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 28 / 28
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:
4 tests, written and oral final exam
Scale of assessment (preliminary/final): 55/45

Learning outcomes:
Students will be able to use basic tools of differential calculus of real-valued functions of a single variable to solve both practical and theoretical problems of appropriate difficulty.

Class syllabus:
Brief historical overview. Limit of a function and a sequence, basic theorems on limits. . Continuity of a function at a point and on a set, properties of continuous functions on intervals and on compact sets. Derivatives of functions, basic theorems on differentiable functions, chain rule, derivative of an inverse function. Mean value theorem. Sketching a graph of a function. L'Hospital's rule. Taylor polynomials.

Recommended literature:
Matematická analýza I / Tibor Neubrunn, Jozef Vencko. Bratislava : Univerzita Komenského, 1992
Cvičenia z matematickej analýzy I / Zbyněk Kubáček, Ján Valášek. Bratislava : Univerzita Komenského, 2009
Matematická analýza 1 / Jiří Brabec, František Martan, Zdeněk Rozenský. Praha : Státní nakladatelství technické literatury, 1985

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 395

A	B	C	D	E	FX
17,47	15,7	11,14	22,53	32,66	0,51

Lecturers: doc. RNDr. Zbyněk Kubáček, CSc., Mgr. Július Pačuta, PhD., PaedDr. Mária Slavíčková, PhD.
Last change: 08.02.2018
Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KMANM/1-INF-150/00	Mathematical Analysis (2)

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 28 / 28
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 2.

Educational level: I.

Prerequisites: FMFI.KMANM/1-INF-110/00 - Mathematical Analysis (1)

Course requirements:
final exam
Scale of assessment (preliminary/final): 55/45

Learning outcomes:
Students will be able to use the methods of integral calculus of single-variable functions and the theory of infinite series to solve both practical and theoretical problems of appropriate difficulty.

Class syllabus:
Antiderivative, basic methods of evaluation of primitives, integration of rational functions, trigonometric substitutions. Riemann integral of one variable, fundamental theorems of integral calculus. Infinite series, convergence tests. Absolutely and conditionally convergent series and their rearrangements. Power and Taylor series, interval of convergence.

Recommended literature:
Matematická analýza II / Tibor Neubrunn, Jozef Vencko. Bratislava : Univerzita Komenského, 1992
Cvičenia z matematickej analýzy II / Zbyněk Kubáček, Ján Valášek. Bratislava : Univerzita Komenského, 2010
Matematická analýza 1 / Jiří Brabec, František Martan, Zdeněk Rozenský. Praha : Státní nakladatelství technické literatury, 1985

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 330

A	B	C	D	E	FX
18,48	11,52	12,73	21,21	35,45	0,61

Lecturers: doc. RNDr. Zbyněk Kubáček, CSc., PaedDr. Mária Slavíčková, PhD., Mgr. Michaela Vargová, PhD., Mgr. Martina Babinská, PhD.

Last change: 08.02.2018
Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI+KMANM/2-INF-177/15	Mathematical Analysis (3)

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 3 / 1 **per level/semester:** 42 / 14
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 5.

Educational level: I., II.

Prerequisites:

Course requirements:
Test, homework assignments, writen exam
Scale of assessment (preliminary/final): 50/50

Learning outcomes:
Students will be able to solve basic differential equations and tasks involving metric spaces and analyze functions of multiple variables.

Class syllabus:

Recommended literature:
Zbierka príkladov z obyčajných diferenciálnych rovníc / Nikolaj Michajlovič Matvejev. Bratislava : SVTL, 1964
Matematická analýza III / Mária Barnovská, Kristína Smítalová. Bratislava : Univerzita Komenského, 1991
Matematika : diel 1 : pre štúdium technických vied / Igor Kluvánek, Ladislav Mišík, Marko Švec. Bratislava : Alfa, 1971
Matematika pre štúdium technických vied : 2. diel / Igor Kluvánek, Ladislav Mišík, Marko Švec. Bratislava : Alfa, 1970

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 8

A	B	C	D	E	FX
37,5	0,0	12,5	12,5	25,0	12,5

Lecturers: RNDr. Kristína Rostás, PhD.

Last change: 13.09.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-615/10	Mathematical Propedeutics (1)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 147

A	B	C	D	E	FX
78,23	6,12	8,16	0,0	3,4	4,08

Lecturers: RNDr. Ján Mazák, PhD.

Last change: 28.10.2016

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-616/14	Mathematical Propedeutics (2)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 55

A	B	C	D	E	FX
67,27	7,27	1,82	7,27	3,64	12,73

Lecturers: RNDr. Ján Mazák, PhD.

Last change: 28.10.2016

Approved by: doc. RNDr. Daniel Olejár, PhD.

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KI/1-INF-951/15	**Course title:** Mathematics
Number of credits: 3	
Educational level: I.	
State exam syllabus:	
Last change: 02.06.2015	
Approved by: doc. RNDr. Daniel Olejár, PhD.	

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI+KI/1-BIN-301/15	Methods in Bioinformatics

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 28 / 28
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 5.

Educational level: I., II.

Prerequisites:

Course requirements:
Homework assignments, group project, written exam
Scale of assessment (preliminary/final): 40/60

Learning outcomes:
Students will be familiar with basic problems and methods in bioinformatics; they will be able to choose an appropriate method for a given biological problem and to interpret its results.

Class syllabus:
Basic concepts from molecular biology, algorithms and machine learning. Sequencing and assembling genomes. Gene finding. Sequence alignment. Evolutionary models and phylogenetic trees. Comparative genomics. RNA structure. Motif finding and gene expression analysis. Protein structure and function. Selected current topics.
Students of computer science programs will focus on computer science methods and mathematical modeling of the covered problems. Life science students will focus on understanding and correct application of these methods on real data.

Recommended literature:
Biological sequence analysis : Probabilistic models of proteins and nucleic acids / Richard Durbin ... [et al.]. Cambridge : Cambridge University Press, 1998
Understanding bioinformatics / Marketa Zvelebil, Jeremy O. Baum. New York : Garland Science, 2008

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 68

A	B	C	D	E	FX
29,41	20,59	25,0	19,12	2,94	2,94

Lecturers: doc. Mgr. Bronislava Brejová, PhD., doc. Mgr. Tomáš Vinař, PhD., Mgr. Vladimír Boža, PhD.
Last change: 08.02.2018
Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/1-MAT-570/15	Modelling and Rendering Techniques

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 28 / 28
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 5.

Educational level: I.

Prerequisites:

Antirequisites: FMFI.KAI/1-MAT-570/00

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 17

A	B	C	D	E	FX
29,41	23,53	23,53	0,0	17,65	5,88

Lecturers: prof. RNDr. Roman Ďurikovič, PhD.

Last change: 22.09.2017

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJFB/1-INF-311/00	Novel Trends in Personal Computers

Educational activities:
Type of activities: lecture
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 5.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 86

A	B	C	D	E	FX
54,65	26,74	12,79	4,65	0,0	1,16

Lecturers: RNDr. Ján Szarka, CSc., Mgr. Róbert Breier, PhD.

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-171/15	Operating Systems

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 3 / 1 **per level/semester:** 42 / 14
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 4.

Educational level: I.

Prerequisites:

Antirequisites: FMFI.KI/1-INF-171/10

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 234

A	B	C	D	E	FX
21,79	14,96	25,21	13,25	13,68	11,11

Lecturers: RNDr. Richard Ostertág, PhD., RNDr. Ján Mazák, PhD.

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/1-MXX-425/00	Philosophical Conceptions of Meaning (1)

Educational activities:
Type of activities: lecture / seminar
Number of hours:
per week: 1 / 1 **per level/semester:** 14 / 14
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
G. Frege on sense reference (denotation) of language expressions;
Russell's theory of descriptions; solving of problems - identity sentences, existential sentences and semantic function of expression without reference;
critics of theory of descriptions - P. F. Strawson and K. Donnellan.
semantics of Tractatus logico-philosophicus - names and objects, sentences as pictures of facts;
Alfred Tarski - semantic conception and definition of truth;
R. Carnap - method of extension and intension, internal and external questions

Recommended literature:
Frege, G.: "O zmysle a denotáte.", In: Filozofia, roč. 47, 1992, č. 6.
Russell, B.: "Opisy.", In: Organon F, 1995, č. 2.
Carnap, R.: Meaning and Necessity, Chicago, IL: University of Chicago Press, 1947.
Peregrin, J.: Význam a struktura. Oikúmené, Praha 1999.
Organon F: preklady článkov Russella, Tarskeho, Donnellana a i.
Denotácia, referencia a význam. Organon F, Príloha, Bratislava 2000.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 2

A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0

Lecturers: PhDr. Dezider Kamhal, PhD.

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/1-MXX-426/00	Philosophical Conceptions of Meaning (2)

Educational activities:
Type of activities: lecture / seminar
Number of hours:
per week: 1 / 1 **per level/semester:** 14 / 14
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
names as rigid designators in "possible worlds"; causal-historical theory of reference; semantic reductionism versus semantic holism; W. v. O. Quine - indeterminateness of translation; inscrutability of reference and ontological relativity; Quine's pragmatism; D. Davidson - radical interpretation and principle of charity; H. Putnam - meaning of "meaning", internal and external realism.

Recommended literature:
Kripke, Saul A.: Pomenovanie a nevyhnutnosť. Kalligram, Bratislava 2002
Davidson, D.: Čin, myseľ, jazyk. Archa, Bratislava 1997.
Quine, W. V. O.: Od stimulu k vědě, Academia, Filosofia, Praha 2002
Quine, W. v. O.: Hledání pravdy. Herrmann a synové, Praha 1994.
Peregrin, J. (edit): Obrat k jazyku: Druhé kolo. Filosofia, Praha 1998.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 2

A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0

Lecturers: PhDr. Dezider Kamhal, PhD.

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/1-MXX-423/00	Philosophy of L. Wittgenstein (1)

Educational activities:
Type of activities: lecture / seminar
Number of hours:
per week: 1 / 1 **per level/semester:** 14 / 14
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
analysis selected sections of Wittgenstein's main writings; influence of Frege's and of Russell's works; interpretation of Wittgenstein's Tractatus; "picture theory" of meaning - fact and Picture of fact; name and meaning of name; sencente and sentence meaning; criterium of sentence meaningfulness - tautology and contradiction, empirical sentences; boundaries of language from the standpoint of theory of meaning; "what we cannot speak about"

Recommended literature:
Wittgenstein, L.: Tractatus logico - philosophicus, Kalligram, Bratislava 2003.
Wittgenstein, L.: Modrá a Hnedá kniha, Kalligram, Bratislava 2002.
Wittgenstein, L.: Filosofická zkoumání, Filosofia, Praha 1998.
Malcolm, N.: Ludwig Wittgenstein v spomienkach. Archa, Bratislava 1993.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 36

A	B	C	D	E	FX
88,89	2,78	5,56	0,0	2,78	0,0

Lecturers: PhDr. Dezider Kamhal, PhD.

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/1-MXX-424/00	Philosophy of L. Wittgenstein (2)

Educational activities:
Type of activities: lecture / seminar
Number of hours:
per week: 1 / 1 **per level/semester:** 14 / 14
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
philosophical problem solving by arranging what we have always known (by looking into the workings of our language) - its possibility
meanings of "meaning" in ordinary language; expression meaning as its use (usage, way of use); reading and interpretation of The Blue and Brown Books and of Philosophical Investigations

Recommended literature:
Wittgenstein, L.: Tractatus logico - philosophicus, Praha 1993.
Wittgenstein, L.: Modrá a Hnedá kniha, Kalligram, Bratislava 2002.
Wittgenstein, L.: Filosofická zkoumání, Filosofia, Praha 1998.
Malcolm, N.: Ludwig Wittgenstein v spomienkach. Archa, Bratislava 1993.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 25

A	B	C	D	E	FX
96,0	4,0	0,0	0,0	0,0	0,0

Lecturers: PhDr. Dezider Kamhal, PhD.

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/1-MXX-110/00	Physical Education and Sport (1)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 0

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
According to the particular sport: practicing of individual game skills in sports like basketball, volleyball, soccer, floorball. Training in the individual sports like swimming, trampoline jumping, rowing and canoeing, aerobic, bodybuiding, command of fundamental technique of sports discipline. To arrange development of coordination abilities, articular mobility and cardiovascular system.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 4433

A	B	C	D	E	FX
97,23	1,78	0,05	0,0	0,02	0,92

Lecturers: Mgr. Ladislav Mókus, Mgr. Ondrej Podkonický, PaedDr. Dana Mašlejová, doc. PhDr. Vojtech Potočný, CSc., Mgr. Jana Leginusová, Mgr. Tomáš Kuchár, PhD., PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek

Last change: 25.05.2016

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/1-MXX-120/00	Physical Education and Sport (2)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 0

Recommended semester: 2.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Practising offensive and defensive combinations and game at modified rules in collective games such as basketball, volleyball, soccer, floorball. Command of elements of higher difficulty in terms of the level of the activity abilities (crawl stroke, breast stroke, butterfly stroke, trampoline jump, aerobic compositions with steps, fitball, elastic gums, paddling on the running water.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 3794

A	B	C	D	E	FX
97,65	1,95	0,03	0,0	0,0	0,37

Lecturers: Mgr. Tomáš Kuchár, PhD., Mgr. Ondrej Podkonický, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Jana Leginusová, doc. PhDr. Vojtech Potočný, CSc., PaedDr. Mikuláš Ortutay, Mgr. Viktor Sládok, Mgr. Martin Dovičák, Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/1-MXX-210/00	Physical Education and Sport (3)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
To practise game combinations, tactical - mechanical elements in basketball, volleyball, soccer, floorball, ice hockey, badminton, competition rules in the sports specialization.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 2338

A	B	C	D	E	FX
99,19	0,43	0,0	0,0	0,0	0,38

Lecturers: Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, PaedDr. Mikuláš Ortutay, Mgr. Ondrej Podkonický, doc. PhDr. Vojtech Potočný, CSc., Mgr. Martin Dovičák, Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/1-MXX-220/00	Physical Education and Sport (4)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Preparation for sport championships of the Faculty in the chosen sport at modified rules. The selection of talented students into the teams of the University and Faculty leagues and other faculty sport events.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 2080

A	B	C	D	E	FX
99,66	0,19	0,0	0,0	0,0	0,14

Lecturers: Mgr. Tomáš Kuchár, PhD., Mgr. Ladislav Mókus, Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ondrej Podkonický, doc. PhDr. Vojtech Potočný, CSc., PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/1-MXX-310/00	Physical Education and Sport (5)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 5.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Preparation and participation of individuals and teams in the system of university sport competitions and sport events.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 1535

A	B	C	D	E	FX
99,35	0,39	0,0	0,0	0,0	0,26

Lecturers: Mgr. Tomáš Kuchár, PhD., doc. PhDr. Vojtech Potočný, CSc., Mgr. Ladislav Mókus, Mgr. Ondrej Podkonický, Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/1-MXX-320/00	Physical Education and Sport (6)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 6.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Using the communication in the physical education and sport and organizing the sport championships to achieve expressive motion of the sport and health in a valuable orientation the students.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 1335

A	B	C	D	E	FX
99,55	0,22	0,07	0,0	0,0	0,15

Lecturers: PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Ondrej Podkonický, doc. PhDr. Vojtech Potočný, CSc., Mgr. Jana Leginusová, Mgr. Tomáš Kuchár, PhD., PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-270/15	Practicum in Databases

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3., 5.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 65

A	B	C	D	E	FX
47,69	15,38	6,15	9,23	3,08	18,46

Lecturers: RNDr. Ján Mazák, PhD., RNDr. Michal Rjaško, PhD.

Last change: 06.10.2016

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-315/14	Principles of Reverse Engineering

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 28 / 28
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 6.

Educational level: I., II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 30

A	B	C	D	E	FX
50,0	20,0	10,0	3,33	6,67	10,0

Lecturers: Ing. Róbert Lipovský

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-516/15	Principles of Software Design

Educational activities:
Type of activities: course
Number of hours:
per week: 4 **per level/semester:** 56
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 4.

Educational level: I.

Prerequisites:

Antirequisites: FMFI.KI/1-INF-516/10

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 146

A	B	C	D	E	FX
54,11	17,81	12,33	8,22	6,85	0,68

Lecturers: doc. RNDr. Robert Lukoťka, PhD.

Last change: 04.10.2016

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAMŠ/2-INF-175/15	Probability and Statistics

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 3 / 1 **per level/semester:** 42 / 14
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 5.

Educational level: I., II.

Prerequisites:

Antirequisites: FMFI.KAMŠ/1-INF-435/13

Course requirements:
written tests, final exam
Scale of assessment (preliminary/final): 30/70

Learning outcomes:
Students will be familiar with mathematical foundations of probability and statistics. They will be able to solve common types of problems involving probability and conduct simple statistical analyses.

Class syllabus:
Definition of probabilistic model and basic properties of probabality, conditional probability, Bayes theorems, random variables, random vectors and their characteristics, limit theorems, introduction to Markov chain theory, probabilistic theory of information, regression model with normally distributed errors, introduction to theory of parameter estimation and statistical hypothesis testing

Recommended literature:
Pravdepodobnosť a matematická štatistika : Štatistické analýzy / František Lamoš, Rastislav Potocký. Bratislava : Univerzita Komenského, 1998
Zbierka úloh zo základov teórie pravdepodobnosti / Radoslav Harman, Erika Hönschová, Ján Somorčík. Bratislava : PACI, 2009
Electronic course notes published on the course web site

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 87

A	B	C	D	E	FX
35,63	12,64	20,69	11,49	17,24	2,3

Lecturers: Mgr. Lenka Filová, PhD., Mgr. Lívia Leššová

Last change: 22.08.2015
Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/1-MXX-421/00	Problems of Analytical Philosophy (1)

Educational activities:
Type of activities: lecture / seminar
Number of hours:
per week: 1 / 1 **per level/semester:** 14 / 14
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
beginnings - G. Frege, B. Russell and G. E. Moore; goals and methods of the philosophical analysis; relation between language and "world" (Tractatus logico-philosophicus); search for criteria of meaningfulness of sentences; critics of traditional philosophy and of its "pseudoproblems"; Vienna circle - the principle of verifiability and its variants; logical positivism and its limits

Recommended literature:
Frege, G.: "O zmysle a denotáte.", In: Filozofia, roč. 47, 1992, č. 6.
Russell, B.: "Opisy.", In: Organon F, 1995, č. 2
Kamhal, D.(ed.): Z analytickej filozofie I., UK Bratislava 1993, textbook
Peregrin, J.: Kapitoly z analytické filosofie, Filosofia, Praha 2005.
Valenta, L.: Problémy analytické filozofie. Nakladatelství Olomouc 2003.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 35

A	B	C	D	E	FX
91,43	5,71	2,86	0,0	0,0	0,0

Lecturers: PhDr. Dezider Kamhal, PhD.

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/1-MXX-422/00	Problems of Analytical Philosophy (2)

Educational activities:
Type of activities: lecture / seminar
Number of hours:
per week: 1 / 1 **per level/semester:** 14 / 14
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Natural (ordinary) language and artificial language; two approaches to the analysis of ordinary language; late Wittgenstein - meaning of expression and use of expression, language games; Oxonian "linguistic philosophy" (P. F. Strawson, J. L. Austin, H. P. Grice); J. Searle and elaboration of theory of speech acts; Quine's pragmatism and his critics of dogmas of empiricism; inscrutability of reference and ontological relativity; D. Davidson and his pragmatism

Recommended literature:
Filozofia prirodzeného jazyka, (ed. M. Oravcová) Bratislava, Archa 1992.
Strawson, P. F.: Analýza a metafyzika. Kalligram, Bratislava 2001.
Quine, W. V. O.: Od stimulu k vědě, Academia, Filosofia, Praha 2002
Davidson, D.: Subjektivita, intersubjektivita, objektivita, Praha 2004

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 9

A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0

Lecturers: PhDr. Dezider Kamhal, PhD.

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-127/15	Programming (1) in C/C++

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 4 / 4 **per level/semester:** 56 / 56
Form of the course: on-site learning

Number of credits: 8

Recommended semester: 1.

Educational level: I.

Prerequisites:

Antirequisites: FMFI.KI/1-INF-127/11

Course requirements:
Homework, tests, final practical exam
Scale of assessment (preliminary/final): 70/30

Learning outcomes:
Students will be able to write short programs in C/C++ language, debug them and understand existing code. They will be familiar with basic control and data structure constructs of the language, as well as simple dynamic data types and algorithms operating on them.

Class syllabus:
Basic control and data structure constructs of the language (loops, conditionals, variables and their types, functions and their parameters, arrays, pointers, strings, files). Basic algorithms and data structures (sorting, linked lists, hash tables, trees, arithmetic expressions, stack and queue, recursion, filling connected areas).

Recommended literature:
Algorithms in C : Parts 1-4 : Fundamentals, data structures, sorting, searching / Robert Sedgewick. Boston : Addison-Wesley, 1998
Programming in C / Stephen G. Kochan. Indianapolis : SAMS Publishing, 2005
Algoritmy v jazyku C a C++ : Praktický průvodce / Jiří Prokop. Praha : Grada, 2009
Custom electronic materials published at the course website http://compbio.fmph.uniba.sk/vyuka/prog/

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 267

A	B	C	D	E	FX
33,71	15,73	13,48	17,23	7,87	11,99

Lecturers: doc. Mgr. Bronislava Brejová, PhD., RNDr. Jana Katreniaková, PhD., Mgr. Michal Anderle
Last change: 08.02.2018
Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KI/1-INF-166/11	**Course title:** Programming (2) in Java

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 28 / 28
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 2.

Educational level: I.

Prerequisites: FMFI.KI/1-INF-127/15 - Programming (1) in C/C++

Antirequisites: FMFI.KAI/1-AIN-170/00

Course requirements:
homework, tests, final practical exam
Scale of assessment (preliminary/final): 70/30

Learning outcomes:
Students will be able to write programs in the Java programming language using the object-oriented paradigm. They will be able to implement graphical user interfaces; They will know basic algorithms and data structures for working with graphs.

Class syllabus:
Control structures and data types of Java language. Object-oriented programming, inheritance, polymorphism, exceptions, generics, Java Collections, testing, implementation of graphical user interfaces, graph representation, breath-first search and depth-first search.

Recommended literature:
Algorithms in Java : Part 5 : Graph algorithms / Robert Sedgewick ; consulting by Michael Schidlowsky. Boston : Addison-Wesley, 2004
Java 6 : Výukový kurz / Sharon Zakhour ... [et al.] ; překlad Jakub Mikulaštík. Brno : Computer Press, 2007
Data structures and algorithm in Java / Michael T. Goodrich, Roberto Tamassia. Haboken : John Wiley & Sons, 2006
Thinking in Java / Bruce Eckel. Upper Saddle River : Prentice-Hall, 2006
Custom course notes at the course website http://compbio.fmph.uniba.sk/vyuka/prog/

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 407

A	B	C	D	E	FX
51,6	10,57	10,32	11,3	11,3	4,91

Lecturers: doc. Mgr. Bronislava Brejová, PhD., RNDr. Jana Katreniaková, PhD., RNDr. Peter Kostolányi, PhD.

Last change: 09.02.2018

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-225/15	Programming (3)

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 28 / 28
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 3.

Educational level: I.

Prerequisites: FMFI.KI/1-INF-127/15 - Programming (1) in C/C++ and FMFI.KI/1-INF-166/11 - Programming (2) in Java

Antirequisites: FMFI.KI/1-INF-225/00

Course requirements:
tests, final practical exam
Scale of assessment (preliminary/final): 50/50

Learning outcomes:
Students will be able to use advanced constructs of Java programming language, design appropriate implementation of common situations in class and interface design, improve existing object-oriented code

Class syllabus:
Advanced constructs of Java programming language (generics and bounded quantification, inner classes, lambda expressions,garbage collection, threads and their life cycle, thread synchronisation). Design patterns (Singleton, Composite, Strategy, Decorator, Iterator, Visitor, ...); Refactoring.

Recommended literature:
Design patterns : Elements of reusable object-oriented software / Erich Gamma ... [et al.]. Boston : Addison-Wesley, 1995
Refactoring : Improving the design of existing code / Martin Fowler. Boston : Addison-Wesley, 1999

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 349

A	B	C	D	E	FX
37,82	13,47	20,63	12,03	14,9	1,15

Lecturers: RNDr. Richard Ostertág, PhD., RNDr. Jana Katreniaková, PhD., Mgr. Šimon Sádovský

Last change: 08.02.2018
Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/2-INF-184/15	Programming Languages

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 28 / 28
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 6.

Educational level: I., II.

Prerequisites:

Recommended prerequisites:
1-INF-225 Programming (3)

Course requirements:
Short test at each tutorial, practical programming exam
Scale of assessment (preliminary/final): 50/50

Learning outcomes:
Students will be able to faster learn a new programming language, because the course will familiarize them with basic programming paradigms, language constructs and theoretical concepts underlying programming languages.

Class syllabus:
Programming paradigms (object oriented, functional, declarative and others). Language constructs and concepts (pattern matching, continuations, closures, lazy evaluation, futures, promises and others). Examples in various programming languages.

Recommended literature:
Haskell the craft of functional programming / Simon Thompson. Harlow : Pearson, 1999
Common Lisp : the language / Guy L. Steele, Jr. ; with contributions by Scott E. Fahlman ... [et al.] and with contributions to the 2nd ed. by Daniel G. Bobrow ... [et al.]. Bedford : Digital Press, 1990
Concepts, Techniques, and Models of Computer Programming / Peter Van Roy, Seif Haridi. MIT Press (March 1, 2004)

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 27

A	B	C	D	E	FX
33,33	7,41	29,63	11,11	18,52	0,0

Lecturers: RNDr. Richard Ostertág, PhD., Mgr. Šimon Sádovský
Last change: 21.10.2015
Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-235/00	Project (1)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 1 **per level/semester:** 14
Form of the course: on-site learning

Number of credits: 1

Recommended semester: 3.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Choice of a problem from areas of didactics, hypertexts, multimedia, data processing, simulation, visualization. Informal description of the problem and its proposed solution. Semiformal specification. Implementation. Writing documentation. Presentation.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 345

A	B	C	D	E	FX
75,65	8,7	4,06	2,32	4,93	4,35

Lecturers: doc. Mgr. Tomáš Plachetka, Dr.

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-265/00	Project (2)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 1 **per level/semester:** 14
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4.

Educational level: I.

Prerequisites: FMFI.KI/1-INF-235/00 - Project (1)

Course requirements:

Learning outcomes:

Class syllabus:
Students usually continue to work on their problem defined in Project 1. They can formulate another problem and solve it, too. Beside the solution of the formulated problem, the emphasis is layed on the correct development process (specification, implementation, documentation, presentation).

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 307

A	B	C	D	E	FX
60,91	12,05	10,75	4,89	5,86	5,54

Lecturers: doc. Mgr. Tomáš Plachetka, Dr.

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/2-INF-173/13	Quantum Information Theory

Educational activities:
Type of activities: lecture
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 5.

Educational level: I., II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
1. Introduction and history
2. Pure quantum state and superposition principle
3. Quantum measurement and uncertainty relations
4. Mixed quantum states
5. Time evolution of quantum systems
6. Two quantum systems - EPR paradox
7. Bell inequalities
8. Quantum information
9. Basic quantum protocols
10. Experimental realization and decoherence
11. Indistinguishability principle and elementary particles

Recommended literature:
John Preskill: Lecture Notes on Quantum Information, http://www.theory.caltech.edu/people/preskill/ph229/#lecture
M. A. Nielsen and I. L. Chuang: Quantum computation and Quantum Information, Cambridge university press (2000)

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 27

A	B	C	D	E	FX
44,44	22,22	14,81	11,11	7,41	0,0

Lecturers: doc. RNDr. Martin Plesch, PhD.

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/1-UXX-340/00	Recreation Sports in Dialy Routine of Pupils and Students

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 5.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
To optimize the daily working programme of the students, the programmes of the sport recreational activities and time-off the students. The sport and health in a value orientation of the students. Using developed elemens in an education physical activity and sport preparation.
The programmes of the sport recreational activities as a basic precondition of health strengthening, acquirement of physical capability, fitness, regaining of working energy and readiness of body to confront stress situations and dangerous factors as a basic precondition of health strengthening, acquirement of physical capability, fitness, regaining of working energy and readiness of body to confront stress situations and dangerous factors.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 44

A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0

Lecturers: doc. PhDr. Vojtech Potočný, CSc.

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-161/00	Russian Language (1)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1.

Educational level: I., II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
The subject provides a course in Russian language for beginners.

Recommended literature:
The textbook has not been published. It is at students' disposal in an electronic format.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 642

A	B	C	D	E	FX
60,9	16,2	9,66	4,83	1,71	6,7

Lecturers: PhDr. Elena Klátiková

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-162/00	Russian Language (2)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I., II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
The subject continues the program of Russian language (1) and provides a course of Russian for beginners.

Recommended literature:
The textbook has not been published. It is at students' disposal in an electronic format.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 389

A	B	C	D	E	FX
65,81	16,2	9,0	3,34	1,03	4,63

Lecturers: PhDr. Elena Klátiková

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-261/00	Russian Language (3)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3.

Educational level: I., II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
The course "Russian for Intermediate Students" is a follow-up to "Russian for Beginners". The subject of the course is general Russian in the range appropriate to the given level.

Recommended literature:
The textbook has not been published. It is at students' disposal in an electronic format.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 191

A	B	C	D	E	FX
70,68	17,28	8,38	2,62	0,0	1,05

Lecturers: PhDr. Elena Klátiková

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-262/00	Russian Language (4)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4.

Educational level: I., II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
The course "Russian for Intermediate Students" is a follow-up to "Russian for Beginners". The subject of the course is general Russian in the range appropriate to the given level.

Recommended literature:
The textbook has not been published. It is at students' disposal in an electronic format.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 130

A	B	C	D	E	FX
73,85	13,85	7,69	3,08	0,77	0,77

Lecturers: PhDr. Elena Klátiková

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/2-INF-130/00	Service Oriented Architectures - Principles and Technologies

Educational activities:
Type of activities: lecture
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 5.

Educational level: I., II.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 50/50

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 79

A	B	C	D	E	FX
40,51	22,78	21,52	6,33	5,06	3,8

Lecturers: Dr. Josef Withalm, Mgr. Pavol Mederly

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KZVI/1-INF-175/00	Social Aspects of Informatics

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4.

Educational level: I.

Prerequisites:

Antirequisites: FMFI.KZVI/1-UXX-332/10 and FMFI.KZVI/1-UXX-333/10

Course requirements:
homeworks
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
Students will be motivated to thing about the impact of information and communication technologies on our lives. Students will be familiar with historical perspective of this impact.

Class syllabus:
New ICT are developed and improved very rapidly. They are becoming an invisible part of our everyday life. We try to look at changes introduced by ICT, what positive they are introducing and what the risks are too. We try to analyse different areas of society: education system, medical care, arts, business, finance, manufacturing, etc. Especially we deal with Slovak copyright law and computer crime.

Recommended literature:
Abelson,Ledeen, Lewis, BlownTo Bits, Addison Wesley 2008, www.bitsbook.com
Materials shared at the course website

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 1411

A	B	C	D	E	FX
66,69	9,92	4,39	12,47	2,76	3,76

Lecturers: RNDr. Michal Winczer, PhD.

Last change: 08.02.2018

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/1-MXX-115/15	Sports in Nature (1)

Educational activities:
Type of activities:
Number of hours:
per week: **per level/semester:**
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1.

Educational level: I., II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 171

A	B	C	D	E	FX
99,42	0,0	0,58	0,0	0,0	0,0

Lecturers: Mgr. Martin Dovičák, Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Ondrej Podkonický

Last change: 25.05.2016

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/1-MXX-115/15	Sports in Nature (1)

Educational activities:
Type of activities:
Number of hours:
per week: **per level/semester:**
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I., II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 171

A	B	C	D	E	FX
99,42	0,0	0,58	0,0	0,0	0,0

Lecturers: Mgr. Martin Dovičák, Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Ondrej Podkonický

Last change: 25.05.2016

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/1-MXX-215/15	Sports in Nature (2)

Educational activities:
Type of activities:
Number of hours:
per week: **per level/semester:**
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4.

Educational level: I., II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 94

A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0

Lecturers: Mgr. Martin Dovičák, Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Ondrej Podkonický

Last change: 25.05.2016

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/1-MXX-215/15	Sports in Nature (2)

Educational activities:
Type of activities:
Number of hours:
per week: **per level/semester:**
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3.

Educational level: I., II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 94

A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0

Lecturers: Mgr. Martin Dovičák, Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Ondrej Podkonický

Last change: 25.05.2016

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAMŠ/1-MXX-501/15	Statistics for Non-statisticians

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester:

Educational level: I.

Prerequisites:

Antirequisites: FMFI.KAMŠ/1-MXX-501/14

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 15

A	B	C	D	E	FX
93,33	0,0	0,0	0,0	0,0	6,67

Lecturers: doc. Mgr. Ján Mačutek, PhD.

Last change:

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/1-INF-526/15	System Programming

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 28 / 28
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 2.

Educational level: I.

Prerequisites:

Antirequisites: FMFI.KI/1-INF-526/10

Course requirements:
Project, written and oral final exam
Scale of assessment (preliminary/final): 30/70

Learning outcomes:
Students will be familiar with principles and methods of system programming and will have a practical experience with their use.

Class syllabus:
(1) Fundamentals of system programming
data representation, assembler, instruction types, address modes, program structure in GNU as, linking programs, calling conventions, stack manipulation, libraries, loading and executing programs
(2) IA-32 architectere
basic architecture, registers, selected instructions, memory models, virtual memory
(3).Selected system calls of UNIX systems
Starting and temrinating processes, input/output, network communication, terminal, signals

Recommended literature:
Custom course notes published on the course website. Publicly available web resources.

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 236

A	B	C	D	E	FX
19,49	10,59	20,34	13,14	29,66	6,78

Lecturers: RNDr. Jaroslav Janáček, PhD., doc. RNDr. Robert Lukoťka, PhD.

Last change: 08.02.2018
Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/1-MXX-428/00	Theory of Speach Acts

Educational activities:
Type of activities: lecture / seminar
Number of hours:
per week: 1 / 1 **per level/semester:** 14 / 14
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
semantics versus pragmatics; logical analysis and the analysis of language practice; speech act as a basic unit of communication; performative and constative utterances, speech acts - taxonomy and criteria; locutionary, illocutionary and perlocutionary aspects of speech acts; meaning of an expression as a way of its use and as its use (convention versus intention); meaning of expression, sentence meaning and utterer's meaning; referring as a speech act; applications of the theory of speech acts; conversational "implicatures" and maxims of conversation (H. P. Grice)

Recommended literature:
Austin, J. L.: How to do things with words, Oxford UP, 1975 (in Slovak Ako niečo robiť slovami, Kalligram, Bratislava 2004 Jak udělat něco slovy)
Grice, H. P.: Studies in the way of words, Harvard UP, 1991
Searle, J. R.: Speech acts, Cambridge University Press, var. editions
Wittgenstein, L.: Filozofické skúmania, Pravda, Bratislava 1979

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 42

A	B	C	D	E	FX
73,81	11,9	2,38	4,76	7,14	0,0

Lecturers: PhDr. Dezider Kamhal, PhD.

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI+KZVI/1-INF-810/15	Time-Restricted Programming (1)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1.

Educational level: I.

Prerequisites:

Antirequisites: FMFI.KI+KZVI/1-INF-810/00

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 298

A	B	C	D	E	FX
47,32	9,73	9,73	11,07	21,81	0,34

Lecturers: RNDr. Michal Forišek, PhD., RNDr. Michal Winczer, PhD.

Last change: 04.10.2016

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI+KZVI/1-INF-815/15	Time-Restricted Programming (2)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I.

Prerequisites:

Antirequisites: FMFI.KI+KZVI/1-INF-815/00

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 251

A	B	C	D	E	FX
45,42	9,96	8,76	7,57	25,9	2,39

Lecturers: RNDr. Michal Forišek, PhD., RNDr. Michal Winczer, PhD.

Last change: 04.10.2016

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI+KZVI/1-INF-820/15	Time-Restricted Programming (3)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3.

Educational level: I.

Prerequisites:

Antirequisites: FMFI.KI+KZVI/1-INF-820/00

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 189

A	B	C	D	E	FX
58,2	7,41	8,99	10,58	12,7	2,12

Lecturers: RNDr. Michal Forišek, PhD., RNDr. Michal Winczer, PhD.

Last change: 04.10.2016

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI+KZVI/1-INF-825/15	Time-Restricted Programming (4)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4.

Educational level: I.

Prerequisites:

Antirequisites: FMFI.KI+KZVI/1-INF-825/00

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 145

A	B	C	D	E	FX
51,03	8,28	8,97	7,59	22,76	1,38

Lecturers: RNDr. Michal Forišek, PhD., RNDr. Michal Winczer, PhD.

Last change: 04.10.2016

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI+KZVI/1-INF-830/00	Time-Restricted Programming (5)

Educational activities:
Type of activities: laboratory practicals
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 5.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 104

A	B	C	D	E	FX
55,77	11,54	9,62	7,69	15,38	0,0

Lecturers: RNDr. Michal Winczer, PhD., RNDr. Michal Forišek, PhD.

Last change: 04.10.2016

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/2-INF-176/15	Unix for System Administrators

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 28 / 28
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 5.

Educational level: I., II.

Prerequisites:

Course requirements:
Practical assignments (both during the semester and on final exam)
Scale of assessment (preliminary/final): 40/60

Learning outcomes:
After completing the course the students will know the principles of UNIX system administration and they will be able to practically carry out the basic duties of a system administrator.

Class syllabus:
users, groups, passwords
access permissions for files and directories
filesystem structure
character and block devices
special filesystem objects (symlink, pipe)
mounting and unmounting of filesystems to the directory hierarchy (mount, umount, /etc/fstab)
creating filesystems
system startup and shutdown - /etc/inittab, runlevels
job scheduling (cron, at, batch)
TCP/IP configuration (ifconfig, route)
network services (/etc/services, /etc/inetd.conf, /etc/protocols, /etc/hosts, ...)
DNS – client (/etc/resolv.conf)
DNS – server
NFS
Assumptions:
good user-level knowledge of UNIX systems, directory hierarchy navigation, creating and editing files (vi, joe), shell programming (sh/bash), commands find, grep, cat, cut, ls, awk.

Recommended literature:
Course notes provided on the course website, freely available electronic materials

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution Total number of evaluated students: 84					
A	B	C	D	E	FX
14,29	30,95	29,76	15,48	9,52	0,0
Lecturers: RNDr. Jaroslav Janáček, PhD., Mgr. Jaroslav Budiš					
Last change: 09.02.2017					
Approved by: doc. RNDr. Daniel Olejár, PhD.					

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KZVI/1-AIN-189/15	Web Applications (1)

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 28 / 28
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 2.

Educational level: I.

Prerequisites:

Antirequisites: FMFI.KZVI/1-AIN-615/00

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 1456

A	B	C	D	E	FX
35,51	11,13	13,32	12,64	14,01	13,39

Lecturers: PaedDr. Roman Hrušecký, PhD., RNDr. Marek Nagy, PhD.

Last change: 22.09.2017

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAGDM+KAI/1-MAT-560/00	Web Graphics

Educational activities:
Type of activities: course
Number of hours:
per week: 4 **per level/semester:** 56
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 5.

Educational level: I.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 30/70

Learning outcomes:

Class syllabus:
1. Basic definitions. Historic survey, state-of-the art and the future of WWW. Semantic Web a Digital Libraries. Mobile communication. Security, legal and social aspects. Webby awards.
2. Client-server architecture. Dominant web services and technologies. SGML, HTML, VRML, UML. Java, php, ASP.NET and others. Examples of proper use. MIME formats and RFC standards. WWW Consortium.
3. Text creation, digital typography and DTP. On-line publishing authoring legal aspects.
4. Creation and use of pictorial data for WWW.
5. WWW sound processing and applications.
6. Internet animations and video.
7. WWW virtual interaction. Face demo by Ken Perlin. WWW as a procedural sketch book.
8. Web design styles and rules after A. Glassner.
9. 3D web graphics, VRML a X3D.
10. Virtual galleries, gardens, thematic parks and chat rooms.
11. Social and philosophic aspects of virtual environments. Netiquette. Third wave by A. Toffler. History of virtual reality (Gibson, Krueger, Lanier, CAVE...). Cult movie Matrix and implications of its message.
12. Interakcia, navigácia a kooperácia vo virtuálnych prostrediach. Distribuovaná VR. Hry a simulátory.
13. Spájanie obrazu s textom. Vizuálna kritika web stránok.
14. Virtuálne mestá. Akvizícia, konštrukcia, prezentácia, aplikácie.
15. Groupware. Skupinová komunikácia. Avatari a on-line komunity. MPEG-7 a MPEG-21.

Recommended literature:
CGEMS (web stránka ACM SIGGRAPH, www.siggraph.org),
pg.netgraphics.sk,
TOFFLER, A. Third Wave.

BERNERS-LEE, T. Semantic Web, Scientific American, May 2001.
SIGGRAPH course notes by od A. Glassner and K. Perlin.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 856

A	B	C	D	E	FX
21,26	27,69	24,3	12,73	5,14	8,88

Lecturers: doc. RNDr. Andrej Ferko, PhD.

Last change: 02.06.2015

Approved by: doc. RNDr. Daniel Olejár, PhD.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI+KZVI/2-AIN-111/15	Web Technologies and Methodology

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 28 / 28
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 5.

Educational level: I., II.

Prerequisites:

Course requirements:
homeworks, project, written project
exam
Scale: A 90%, B 80%, C 70%, D 60%, E 50%
Scale of assessment (preliminary/final): 50/50

Learning outcomes:
Overview of web technologies in connection with their use and applications for different purposes.
The principles of designing websites, applications, web-based user interfaces, and web content.

Class syllabus:
- Architecture WWW
- Web technology on the server side (overview)
- Web technology on the client side (overview)
- Types of websites, applications, components and interfaces
- The methodology of web sites and applications
- Information Architecture
- Structure of the Web Sites
- Design of the Web Sites
- Principles and methodology of web content
- Testing, optimization and management of web applications and web content
- Level of quality of web sites and applications

Recommended literature:
Information architechture for the World Wide Web / Louis Rosenfeld, Peter Morville. Cambridge : O´Reilly, 1998
Tvoříme přístupné webové stránky : Připraveno s ohledem na novelu Zákona č. 365/2000 Sb., o informačních systémech veřejné správy / David Špinar. Brno : Zoner Press, 2004
Web Style Guide, 3rd ed. / P.J. Lynch, S. Horton. Yale University Press, 2008. Dostupné online: http://webstyleguide.com/wsg3/

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 89

A	B	C	D	E	FX
7,87	12,36	7,87	12,36	41,57	17,98

Lecturers: doc. RNDr. Zuzana Kubincová, PhD., RNDr. Martin Homola, PhD., Mgr. Ján Kľuka, PhD., RNDr. Kristína Malinovská, PhD.

Last change: 22.09.2017

Approved by: doc. RNDr. Daniel Olejár, PhD.