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COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-AIN-137/15	Artificial Intelligence

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: II.

Prerequisites:

Course requirements:
projects, written exam
Scale: A 95%, B 88%, C 79%, D 68%, E 55%
Scale of assessment (preliminary/final): 30/70

Learning outcomes:
After completing the course, students should have a good overview of the theoretical methods used in artificial intelligence. They should be able to use these methods in practice in programming intelligent systems, they should be able to enrich and creatively exploit.

Class syllabus:
1. Agents, types of agents, agent properties. Browse - informed strategies. 2. Search - informed strategies. Games. 3. Logical agents, propositional and predicate database knowledge. 4. Inference of the predicate in the knowledge base. 5. Planning. 6. likelihood naive Bayesian classifier, Bayesian network. 7. Bayesian network, exact and approximate inference in Bayesian network. 8. Using Bayesian networks in artificial intelligence. Introduction to the use of probability theory in games. 9. Monte Carlo method in games.
10. The classic theory of time series, time series models. 11. Use of Bayesian networks inference in time series with uncertainty. 12. Markov priocesy, Kalman filter, the use of artificial intelligence. 13. Decision Theory: simple and complex decision-making, decision trees.

Recommended literature:
Artificial intelligence : A modern approach / Stuart J. Russell, Peter Norvig. Englewood Cliffs : Prentice-Hall, 1995
Artificial intelligence a new synthesis / Nils J. Nilsson. San Francisco : Morgan Kaufmann, 1998

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 53

A	B	C	D	E	FX
30,19	13,21	15,09	20,75	18,87	1,89

Lecturers: doc. RNDr. Mária Markošová, PhD.

Last change: 22.09.2017

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKV-191/17	Cognitive Biology

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

Number of credits: 5

Recommended semester: 2., 4.

Educational level: II.

Prerequisites:

Course requirements:
The student is required to prepare 3 home assignments on specialized topics (reading and understanding of the scientific texts in English); presentation and discussion of the prepared topic in English.
Scale of assessment (preliminary/final): Weights: 25% each presentation, 25% active involvement during course.
Grades: A > 90%, B > 80%, C > 70%, D > 60%, E > 52% marks.

Learning outcomes:
The course will provide a comprehensive overview of principles of cognition. The scientific concept draws from the assumption that cognition is a natural biological phenomenon and can thus be approached by comparative studies of different types of organisms assuming a meaningful degree of continuity among them. The main objective is the formulation of substantiated interrelation of cognition and evolution. Starting with a brief outline of the history of the field, students will then be familiarized with the underlying physicochemical and electrical principles of cognitive processes, cell-cell communication, and molecular cognition. Subsequently, students will tackle the basics of homologous processes in increasingly complex systems (from simple model systems to humans and their socio-physical environment). The challenge for the students will be the high interdisciplinarity of the research area of cognitive biology that requires cross-disciplinary thinking and a multiscale mindset.

Class syllabus:
1. A Brief History of Cognitive Biology
Goodwin, Piaget, Kuhn, Riedl, Kovac, Lyon, Keijzer, Godfrey-Smith
2. The Underlying Principles of Cognitive Biology.
Kovac's fundamental principles; Physicochemical Groundwork (Self-Organization; Thermodynamics vs. Kinetics)
3. The Basal Level of Cognition I
Molecular Mechanisms: From Signaling in Single Cell Organisms to Action Potential
4. The Basal Level of Cognition II
Concept of Information; Biosemiotics; Chemotons & Autocatalytic Sets
5. The Medial Level of Cognition

Cellular Communication, Neural Networks; Network Information Processing
6. The Apical Level of Cognition I
Organismal Behavior (Action [Doing/Knowing], Decision Making); "Rationality"; Goal-directedness
7. The Apical Level of Cognition II
Emotions; Mechanisms for Learning & Memory; Associative Learning Paradigm; Brain Modularity; Onticity
8. The Ontic Level of Cognition: Developmental Processes I
Developmental Genetics; Gene Regulatory Networks; Epigenetic Landscape; Principles of Homology/Analogy; Convergent Evolution
9. The Ontic Level of Cognition: Developmental Processes II
Generative Entrenchment & Ratchet Effects; Developmental Constraints; Hierarchical Processing
10. The Supra-Individual Level of Cognition I
From Eliminative Reductionism to Organicism; Evolutionary Epistemology; Teleonomy / Teleology
11. The Supra-Individual Level of Cognition II
Social Cognition: Beyond the Nature-Nurture Divide; Cultural Evolution;
Environmental Complexity; Umwelt; Niche Construction
12. The Supra-Individual Level of Cognition III
Evolution of Complex Systems; The Extended Evolutionary Synthesis; Major Transitions in Evolution
13. Resumé & Outlook

Recommended literature:

KováčL. (2015) Closing Human Evolution. Springer.
Kováč L. (2000) Fundamental principles of cognitive biology. Evolution and Cognition, vol. 6, pp. 51-69.
Baluška F., Mansuso S. (2009) Deep evolutionary origins of neurobiology. Communicative & Integrative Biology, vol. 2, no. 1, pp. 60-65
– scientific articles on individual topics

Languages necessary to complete the course:

Notes:
Minimum number of 4 enrolled students.

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: Priv.-Doz. Dr. Isabella Sarto-Jackson, PhD.

Last change: 05.02.2018

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKV-233/15	Cognitive Laboratory

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: 3.

Educational level: II.

Prerequisites:

Antirequisites: FMFI.KAI/2-IKV-233/00

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 4

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: 23.09.2017

Approved by: prof. Ing. Igor Farkaš, Dr.

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAI/2-IKVa-956/18	**Course title:** Cognitive Phenomena
Number of credits: 2	
Educational level: II.	
Learning outcomes: The student will become familiar with connections between pieces of knowledge within individual disciplines in the context of selected cognitive phenomena.	
Class syllabus: The course lists a number of cognitive phenomena, that can be looked from the perspective of psychology, computation and neuroscience.	
State exam syllabus: Visual perception Attention Working memory Procedural memory Lexical semantics Sentence semantics Knowledge representation Decision making Motor cognition Categorization Reinforcement learning Emotions Social cognition Consciousness Abstraction Human-robot interaction	
Recommended literature: Various sources to individuals questions, will be provided at course website.	
Last change: 15.05.2019	
Approved by: prof. Ing. Igor Farkaš, Dr.	

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKVa-113/18	Cognitive Psychology

Educational activities:
Type of activities: lecture / seminar
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: II.

Prerequisites:

Course requirements:
Students are required to pass midterm and final test (20% and 30%). Two seminar works will be assigned to each student: (i) a larger seminar project (including empirical part, 30%) and (ii) a smaller seminar reading (theoretical part, 20%). Attendance and active participation in lectures and seminars may influence the final grade (+/- 10% or more).
Scale of assessment (preliminary/final): During course: midterm and two seminar projects (20+20+30) = 70%Examination period: final written exam 30%.

Learning outcomes:
In this course, students of cognitive science will be introduced to field of cognitive psychology, including topics pertaining to perception, attention, memory and other higher-order cognitive processes. Neurobiological underpinnings of such cognitive phenomena and processes will be provided to facilitate the interdisciplinary understanding of human cognition.

Class syllabus:
Perception, attention, memory (sensory, short-term, working, long-term), executive functions, cognition & emotion.

Recommended literature:
Journals: Trends in Cognitive Sciences, Cognition, Cognitive Neuroscience
Books: Methodology in Experimental Psychology (Pashler & Wixted), Cognitive psychology (Sternberg).

Languages necessary to complete the course:
English / Slovak

Notes:

Past grade distribution
Total number of evaluated students: 8

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

Lecturers: Mgr. Martin Marko, PhD.

Last change: 07.02.2019
Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKV-113/00	Cognitive Psychology

Educational activities:
Type of activities: lecture / seminar
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: II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Mind architecture: attention, perception, imagination, memory
Nature of language and language acquisition
Psychometric measures of cognition
Cognitive development and its stages
Natural and artificial intelligence

Recommended literature:
Robert J. Sternberg: Kognitívni psychologie. Portal, Praha 2002
John R. Andersen: Cognitive Psychology and Its Implications. Worth Publishers, New York 2000
J. Rybár, Ľ. Beňušková, V. Kvasnička (ed.): Kognitívne vedy. Kalligram, Bratislava 2002.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 125

A	B	C	D	E	FX
32,0	43,2	20,0	2,4	0,0	2,4

Lecturers: Mgr. Martin Marko, PhD.

Last change: 21.09.2018

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKVa-187/18	Cognitive Science Seminar

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: II.

Prerequisites:

Recommended prerequisites:
None.

Course requirements:
Active participation to lectures, writing two reflections.
Scale of assessment (preliminary/final): Grading: 91-100% = A, 81-90% = B, 71-80% = C, 61-70% = D, 51-60% = E, else Fx.

Learning outcomes:
After the course, the students will have acquired knowledge about cognitive science related research topics in our area, which could help them decide for a topic for their semester project (2nd semester), and/or master thesis (4th semester).

Class syllabus:
The seminar consists of a series of lectures by experts, on cognitive science related research topics. The students choose two topics for which they write a critical reflection.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 14

A	B	C	D	E	FX
14,29	71,43	7,14	0,0	0,0	7,14

Lecturers: prof. Ing. Igor Farkaš, Dr.

Last change: 01.09.2018

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKV-190/16	Cognitive Science and Artificial Intelligence Seminar

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: 1

Recommended semester: 2., 4.

Educational level: 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: 1

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

Lecturers: prof. Ing. Igor Farkaš, Dr.

Last change: 23.09.2017

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKV-232/00	Cognitive Semantics and Cognitive Theory of Representation

Educational activities:
Type of activities: lecture / seminar
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: II.

Prerequisites:

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

Learning outcomes:

Class syllabus:
Basic concepts and problems: semiotic triangle (Pierce), language game (Wittgenstein), referential indeterminacy (Quine), symbol grounding problem (Harnad) and more.
Semiotics and enactive approach.
Meanings and representations in preverbal cognitive systems.
Categorization, prototype theory (Rosch), idealized cognitive models (Lakoff).
Conceptual spaces (Gärdenfors).
Syntax, semantics and pragmatics.
Meanings in brain.
Constructivist/developmental approach.

Recommended literature:
Gärdenfors, P.: Conceptual Spaces, MIT Press, 2000.
Lakoff, G.: Women, Fire and Dangerous Things, The University of Chicago Press, 1987.
Feldman, J.: From Molecule to Metaphor, MIT Press, 2006.
articles on the course webpage

Languages necessary to complete the course:
English

Notes:

Past grade distribution
Total number of evaluated students: 98

A	B	C	D	E	FX
58,16	20,41	12,24	2,04	5,1	2,04

Lecturers: doc. RNDr. Martin Takáč, PhD.

Last change: 24.10.2016

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAI/2-IKV-168/15	**Course title:** Cognitive science, technology and culture
Educational activities: **Type of activities:** seminar **Number of hours:** **per week:** 3 **per level/semester:** 42 **Form of the course:** on-site learning	
Number of credits: 5	
Recommended semester: 2.	
Educational level: II.	
Prerequisites:	
Course requirements: Semestral evaluation: active participation Exam: project presentation Weight of the exam during assessment: 60% To achiev an A, 90% is needed, for B at least 80%, for C 70%, for D, 60% and for an E, at least 50% of overal assessment.	
Learning outcomes: Course provides introductionary insight into relationship between technological inovations onto human behaviour, culture and society.	
Class syllabus: Internet of things, it usefulness and threats Assistant AI and its place in future society Enhancements and human rights and the right to change self and others Artificial minds Hybridization between species and between AI and organic minds Future of minds and trans-humanism Artificial emotional intelligence An after human era	
Recommended literature: Embodiment and cognitive science / Raymond W. Gibbs, Jr.. Cambridge : Cambridge University Press, 2006 Bel, G., Gemmell J. Total Recall, How the e-Memory Revolution will change everything, New York, Dutton, 2009	
Languages necessary to complete the course:	
Notes:	

Past grade distribution Total number of evaluated students: 17					
A	B	C	D	E	FX
64,71	17,65	5,88	0,0	11,76	0,0
Lecturers: Mgr. Tomáš Gál, PhD.					
Last change: 19.02.2018					
Approved by: prof. Ing. Igor Farkaš, Dr.					

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKVa-136/18	Computational Cognitive Neuroscience

Educational activities:
Type of activities: lecture / seminar
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: II.

Prerequisites:

Course requirements:
Each student gives 2 presentations - one during one of the lectures and one during one of the labs. The lecture presentation is based on a scientific paper related to the lecture topic. The lab presentation is related to the particular lab exercise. Students choose topics and dates of their presentations at the beginning of the course. There is also a computational project, usually due by the end of a semester. The final written exam is compulsory.
Scale of assessment (preliminary/final): Each of the 2 presentation is worth max. 20%, a project is worth 20% max, total 60%. Final written exam 40% max. Evaluation scale: A 91 – 100 %, B 81 – 90 %, C 73 – 80 %, D 66 – 72 %, E 60 – 65 %, Fx < 60%

Learning outcomes:
After passing this course, students will be familiar with the main theories and approaches of Computational cognitive neuroscience. They will gain an insight of how cognitive processes are affected and controlled by neural circuits in the brain. Students will become familiar with modeling of some basic mechanisms of cognitive functions using the Emergent simulator.

Class syllabus:
1. Introduction to computational cognitive neuroscience. Main concepts in modeling.
2. Spiking neurons models. Biology of individual neuron and its implementation in Emergent.
3. Structure of cortical networks, localist and distributed representations, excitation and inhibion of neurons.
4. Biological mechanism of memory and learning, long-term potentiation and depression of synaptic efficacy.
5. Self-organization, error-driven learning, combination of both.
6. Functional organization of the brain. Overview of brain areas.
7. Visual perception, attention, bottom-up and top-down mechanisms. Spatial neglect.
8. Motor control and reinforcement learning.
9. Memory, memory types, memory phenomena.
10. Language: neurobiology, syntax, semantics, modeling.
11. Executive functions, the role of prefrontal cortex.
12. Agency, theory of mind, self-awareness.

Recommended literature:

O'Reilly, R.C. et al. (2016). Computational Cognitive Neuroscience. Wiki Book. https://grey.colorado.edu/CompCogNeuro/index.php/CCNBook/Main

Languages necessary to complete the course:
English

Notes:

Past grade distribution
Total number of evaluated students: 7

A	B	C	D	E	FX
71,43	14,29	0,0	0,0	14,29	0,0

Lecturers: prof. RNDr. Ľubica Beňušková, PhD.

Last change: 23.01.2019

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKV-136/15	Computational Cognitive Neuroscience

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: II.

Prerequisites:

Antirequisites: FMFI.KAI/2-IKV-136/10

Course requirements:
During the semester: 2 presentations and a project
Final exam: written and oral.
Approx. evaluation scale: A 90%, B 80%, C 70%, D 60%, E 50%

Learning outcomes:
Computational cognitive neuroscience relies upon theories of cognitive science coupled with neuroscience and computational modeling. In this course, we will study neurobiological processes that underlie cognition by means of computational models. We will address the questions of how cognitive processes are affected and controlled by neural circuits in the brain. Modeling of some basic mechanisms of cognitive functions will be done using the Emergent simulator.

Class syllabus:
1. Introduction to computational cognitive neuroscience. Main concepts in modeling.
2. Spiking neurons models. Biology of individual neuron and its implementation in Emergent.
3. Structure of cortical networks, localist and distributed representations, excitation and inhibion of neurons.
4. Biological mechanism of memory and learning, long-term potentiation and depression of synaptic efficacy.
5. Self-organization, error-driven learning, combination of both.
6. Functional organization of the brain. Overview of brain areas.
7. Visual perception.
8. Attention, bottom-up and top-down mechanisms. Spatial neglect.
9. Motor control and reinforcement learning
10. Memory, memory types, memory phenomena
11. Language.
12. Agency, theory of mind, self-awareness.

Recommended literature:
O'Reilly, R.C., Munakata, Y., Frank, M.J., Hazy, T.E., and Contributors (2012). Computational Cognitive Neuroscience. Wiki Book, 2nd Edition.

http://ccnbook.colorado.edu/

Languages necessary to complete the course:
English

Notes:

Past grade distribution
Total number of evaluated students: 88

A	B	C	D	E	FX
22,73	20,45	22,73	20,45	3,41	10,23

Lecturers: RNDr. Kristína Malinovská, PhD.

Last change: 19.02.2018

Approved by: prof. Ing. Igor Farkaš, Dr.

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAI/2-IKV-954/15	**Course title:** Computational Methods in Cognitive Science
Number of credits: 2	
Educational level: II.	
Course requirements: Exam: oral Grading: A > 90%, B > 80%, C >70%, D > 60%, E > 50% Scale of assessment (preliminary/final): 0/100	
Learning outcomes: The student will gain an overview in computational paradigms in cognitive science, he or she will understand basic concepts of computational cognitive science, and know the differences between them. The student will understand the meaning of formal methods in answering the questions in cognitive science.	
Class syllabus: 1. Computional paradigms in cognitive science. 2. Agents in artificial intelligence 3. Types of environment (in AI) 4. Propositional logic 5. Predicate logic 6. Inductive learning 7. Statistical learning 8. Perceptron neural networks 9. Self-organized neural networks 10. Reinforcement learning 11. Evolutionary algorithms 12. Fuzzy systems	
State exam syllabus: 1. Computional paradigms in cognitive science. 2. Agents in artificial intelligence 3. Types of environment (in AI) 4. Propositional logic 5. Predicate logic 6. Inductive learning 7. Statistical learning 8. Perceptron neural networks 9. Self-organized neural networks 10. Reinforcement learning 11. Evolutionary algorithms 12. Fuzzy systems	
Languages necessary to complete the course: English	

Notes: This is a state exam course.
Last change: 18.02.2019
Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKV-188/16	Computational Neuroscience

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: 5

Recommended semester: 2., 4.

Educational level: II.

Prerequisites:

Course requirements:
Work on home assignments and sitting the final written exam. Students are required to achieve at least half of marks from home assignments during the semester in order to be admitted to sit the final exam. The final exam is compulsory.
Scale of assessment (preliminary/final): Home assignments 50%, final written exam 50%.Grading: A 91-100%, B 81-90%, C 71-80%, D 61-70%, E 51-60%, Fx < 51%

Learning outcomes:
The course will provide students with the basics of computational neuroscience including the basics of the programming metalanguage of the software NEURON, which is used e.g. in the Blue Brain project. The students will learn theoretical and practical principles of application of informatics to the study of processes in neurons and small neural networks. At the same time, they will become familiar with the way of critical thinking, reasoning and problem solving in this research area.

Class syllabus:
- Principles of mathematical and computational modeling of dynamic systems
- Theory of action potentials in neurons and their implementation in NEURON
- Theory of signal processing in dendrites and implementation of dendrites in NEURON
- Theory of biological neural networks and connecting the neurons in NEURON
- Theory of synaptic transmission and implementation of synapses in NEURON
- Implementation of ion channels in NEURON
- Theories of coding of information in neural networks

Recommended literature:
1 – Sterratt D, Graham B, Gillies A and Willshaw D (2011) Principles of Computational Modelling in Neuroscience. Cambridge University Press, Cambridge, U.K. (http://www.biologia.buap.mx/ANTOLOGIA%20BIOFISICA%20I.pdf)
2 – SCHOLARPEDIA - the free online encyclopedia of computational neuroscience (http://www.scholarpedia.org/article/Encyclopedia_of_computational_neuroscience)
3 – Gillies A and Sterratt D (2012) NEURON Tutorial – available online (http://web.mit.edu/neuron_v7.4/nrntuthtml/index.html)

Languages necessary to complete the course:

English, Slovak

Notes:
minimal number of enrolled students = 4

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: prof. RNDr. Ľubica Beňušková, PhD.

Last change: 24.01.2019

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKVa-141/18	Current Trends in Cognitive Psychology

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

Number of credits: 5

Recommended semester: 2.

Educational level: 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: 2

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

Lecturers: Mgr. Tomáš Gál, PhD.

Last change: 21.09.2018

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAI/2-IKV-141/00	**Course title:** Current Trends in Cognitive Psychology
Educational activities: **Type of activities:** lecture / seminar **Number of hours:** **per week:** 2 / 1 **per level/semester:** 28 / 14 **Form of the course:** on-site learning	
Number of credits: 5	
Recommended semester: 2.	
Educational level: II.	
Prerequisites:	
Recommended prerequisites: 2-IKV-111 Introduction to Psychology	
Course requirements: Semestral evaluation: active participation Exam: project presentation Weight of the exam during assessment: 60% To achiev an A, 90% is needed, for B at least 80%, for C 70%, for D, 60% and for an E, at least 50% of overal assessment.	
Learning outcomes: Course provides introductionary insight into relationship between technological inovations onto human behaviour, culture and society.	
Class syllabus: Relation between psychology and ethology Approaches to study reasoning Intelligence and decision making Cognitive illusions and biases Approaches to study emotionality Research of memory Cognitive enhancements	
Recommended literature: KAHNEMAN, D. (2011) Thinking, fast and slow. Macmillan. GOLDBERG, E. (2009): The New Executive Brain, Oxford, Oxford University Press STAINTON, R. J. (2005) Contemporary debates in Cognitive Science. Oxford, Blackwell STERNBERG, R. J., STERNBERG, K. (2011) Cognitive Psychology. Belmont, Wadsworth (6ed)	
Languages necessary to complete the course:	
Notes:	

Past grade distribution
Total number of evaluated students: 74

A	B	C	D	E	FX
71,62	16,22	9,46	1,35	1,35	0,0

Lecturers: Mgr. Tomáš Gál, PhD.

Last change: 19.02.2018

Approved by: prof. Ing. Igor Farkaš, Dr.

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAI/2-IKV-991/15	**Course title:** Diploma Thesis
Number of credits: 16	
Educational level: II.	
State exam syllabus:	
Last change: 02.06.2015	
Approved by: prof. Ing. Igor Farkaš, Dr.	

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKVa-921/18	Diploma Thesis Seminar

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: 3

Recommended semester: 4.

Educational level: II.

Prerequisites:

Course requirements:
Sumbitting the master's thesis concept, oral presentations in the seminar (shorter and longer), peer activity during the semester, participation in peer reviews of extended abstracts (for the conference), active participation at MEi:CogSci conference (talk).
Scale of assessment (preliminary/final): 40% - quality of the master thesis concept30% - oral presentations about the thesis in the seminar (shorter and longer)20% - activity during the semester, peer feedback, participation in peer reviews of extended abstracts (for the conference)10% - active participation at MEi:CogSci conference (talk)

Learning outcomes:
After the course, you should be able to: (1) to formulate and follow a scientific question relevant to cognitive science, (2) to plan, conduct, document and present scientific work, (3) to write an extended scientific abstract, (4) to defend your research and constructively deal with critical commentary, (5) to constructively participate in a peer-review process, (6) to get involved in collaborative work in physical and virtual environments, (7) to engage in scientific discourse, (8) to communicate your expertise in order to contribute constructive criticism to the work of others.

Class syllabus:
Introduction to the course, requirements and grading, plan for the semester.
Presentations of the student's mobility projects to 1st year students (joint meeting).
Student's short presentations (10 min.). Master Thesis Concept requirement.
Student's short presentations (10 min.).
Long presentations (several students), feedback
Long presentations (several students), feedback
Long presentations (several students), feedback
Interdisciplinarity - requirement for your master thesis.
Rehearsal of conference talks
Presentations (talks) at MEi:CogSci conference (during exam period)

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: prof. Ing. Igor Farkaš, Dr., Mgr. Xenia-Daniela Poslon					
Last change: 10.02.2019					
Approved by: prof. Ing. Igor Farkaš, Dr.					

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKV-921/15	Diploma Thesis Seminar

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

Number of credits: 4

Recommended semester: 4.

Educational level: II.

Prerequisites:

Course requirements:
Interim asseessment: activity during presentations, rehearsal of diploma thesis
Exam: master's thesis presentation at MEiCogSci conference
Grading: A>90%, B>80%, C>70%, D>60%, E>50%
Scale of assessment (preliminary/final): 90/10

Learning outcomes:
After the course, you should be able to: (1) to formulate and follow a scientific question relevant to cognitive science, (2) to plan, conduct, document and present scientific work, (3) to write an extended scientific abstract, (4) to defend your research and constructively deal with critical commentary, (5) to constructively participate in a peer-review process, (6) to get involved in collaborative work in physical and virtual environments, (7) to engage in scientific discourse, (8) to communicate your expertise in order to contribute constructive criticism to the work of others.

Class syllabus:
Participation in joint seminars with other students, presentation of partial results, presentation of diploma thesis at MEiCogSci international conference.

Recommended literature:

Languages necessary to complete the course:
English, Slovak

Notes:

Past grade distribution
Total number of evaluated students: 107

A	B	C	D	E	FX
42,99	18,69	20,56	5,61	3,74	8,41

Lecturers: prof. Ing. Igor Farkaš, Dr., doc. PhDr. Ján Rybár, PhD.

Last change: 11.03.2019

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAI/2-ERA-010/15	**Course title:** Elective Mobility Course
Educational activities: **Type of activities:** **Number of hours:** **per week: per level/semester:** **Form of the course:** on-site learning	
Number of credits: 5	
Recommended semester: 3.	
Educational level: 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: 8

A	B	C	D	E	FX
62,5	12,5	0,0	12,5	0,0	12,5

Lecturers:
Last change:
Approved by: prof. Ing. Igor Farkaš, Dr.

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAI/2-IKV-955/15	**Course title:** Empirical Methods in Cognitive Science
Number of credits: 2	
Educational level: II.	
Course requirements: Exam: oral Grading: A > 90%, B > 80%, C > 70%, D > 60%, E > 50%. Scale of assessment (preliminary/final): 0/100	
Learning outcomes: The student will have acquired an overview in cognitive science theories, as well as empirical knowledge related to individual cognitive functions. He/she will understand interdisciplinary principles in cognitive science.	
State exam syllabus: 1. Percepcion system 2. Mamory and its proceses 3. Working memory 4. Attention 5. Representation and organisation of knowledge in mind/brain 6. Natural language 7. Emotions and cognition 8. Decision processes 9. Behavioral experiment 10. Brain imaging methods 11. Neural correlates of cognitive functions 12. Elektroencephalography (EEG)	
Languages necessary to complete the course: English	
Notes: This is a state exam course.	
Last change: 18.02.2019	
Approved by: prof. Ing. Igor Farkaš, Dr.	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAI/2-IKVa-116/18	**Course title:** Empirical Research Methodology
Educational activities: **Type of activities:** lecture / seminar **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: 1.	
Educational level: II.	
Prerequisites:	
Recommended prerequisites: None.	
Course requirements: At least 50% of the points within each of the 5 items of evaluation. Scale of assessment (preliminary/final): 1. Course assignments – 20%2. Semestral project: preliminary text – 10%3. Semestral project: full paper – 30%4. Semestral project: presentation – 10%5. Final “open-book“ exam – 30%	
Learning outcomes: Students will acquire knowledge and skills in the field of quantitative, primarily experimental research: from design, through implementation, to data analysis, reporting, and interpretation of findings. After this course, students should be able to (critically) analyze research studies. Course will also provide practical experience with conducting own experiment, including basic statistical analysis.	
Class syllabus: I. BEFORE EXPERIMENTING 1. Course introduction. 2. Variables and operationalization. 3. Deriving and testing research hypotheses. 4. Population and research sample. Generalization. Research ethics. 5. IMRaD. Sections of research report. II. EXPERIMENTING 6. Research design. Introduction to experimental design. 7. Experimental and quasi-experimental design. 8. Data analysis: applied statistics I. 9. Significance testing. 10. Data analysis: applied statistics II. III. AFTER EXPERIMENTING 11. How to write. How to present. 12. Final “open-book“ exam	

Recommended literature:

American Psychological Association (2010). Publication Manual of the American Psychological Association. Washington: American Psychological Association.
Cooper, H. (2010). Reporting Research in Psychology. How to meet Journal Article Reporting Standards. Washington: American Psychological Association.
Field, A. (2005). Discovering statistics using SPSS. London: Sage Publications.
Gould J. C. (2002). Concise Handbook of Experimental Methods for the Behavioral and Biological Sciences. London: CRC Press.
Harris, P. (2008). Designing and reporting experiments in psychology. Berkshire: McGraw-Hill.
Sani, F., & Todman, J. (2006). Experimental Design and Statistics for Psychology. A First Course. Oxford: Blackwell Publishing.

Languages necessary to complete the course:

Notes:

Past grade distribution

Total number of evaluated students: 8

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

Lecturers: Mgr. Jakub Šrol

Last change: 21.09.2018

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKV-116/15	Empirical Research Methodology

Educational activities:
Type of activities: lecture / seminar
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: 1.

Educational level: II.

Prerequisites:

Antirequisites: FMFI.KAI/2-IKV-116/15

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 32

A	B	C	D	E	FX
21,88	31,25	28,13	9,38	6,25	3,13

Lecturers: Mgr. Jakub Šrol

Last change: 23.09.2017

Approved by: prof. Ing. Igor Farkaš, Dr.

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: 1., 3.

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: 144

A	B	C	D	E	FX
59,72	18,06	9,03	2,08	1,39	9,72

Lecturers: PhDr. Elena Klátiková

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

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: 2., 4.

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: 78

A	B	C	D	E	FX
64,1	20,51	6,41	1,28	0,0	7,69

Lecturers: PhDr. Elena Klátiková

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

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: 387

A	B	C	D	E	FX
41,09	21,96	21,19	9,82	2,07	3,88

Lecturers: Mgr. Ľubomíra Kožehubová

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

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: 247

A	B	C	D	E	FX
36,03	26,72	21,05	10,93	2,83	2,43

Lecturers: Mgr. Ľubomíra Kožehubová

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

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: 97

A	B	C	D	E	FX
36,08	28,87	22,68	7,22	1,03	4,12

Lecturers: Mgr. Ľubomíra Kožehubová

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

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: 68

A	B	C	D	E	FX
36,76	35,29	19,12	2,94	1,47	4,41

Lecturers: Mgr. Ľubomíra Kožehubová

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKVa-105/18	Fundamentals of 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: 4

Recommended semester: 1.

Educational level: II.

Prerequisites:

Recommended prerequisites:
None.

Course requirements:
Scale of assessment (preliminary/final): Labs activity and participation (max. 20 points).Final project (max. 30 points).Overall grading: A (50-46), B (45-41), C (40-36), D (35-31), E (30-26), Fx (25-0).

Learning outcomes:
This course teaches the students the basics of programming using Python language. It focuses on fundamental concepts of programming, such as if-statements, while cycle, for cycle, variables etc. This course also puts emphasis on concepts useful for students of cognitive science including numerical computations using NumPy, visualizations, basics of machine learning techniques using artificial neural networks, as well as writing a script for a simple psychological experiment.

Class syllabus:
1. Interactive shell, console input/output, expressions, variables. 2. If statements, lists, strings, logic. 3. While cycle, for cycle, list comprehensions. 4. Dictionaries, sets, objects. 5. Functions, arguments and scopes. 6. Numerical computations using NumPy. 7. Visualizations. 8. Basics of machine learning techniques using artificial neural networks. 9. Designing a behavioral experiment in python.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 10

A	B	C	D	E	FX
40,0	10,0	20,0	0,0	10,0	20,0

Lecturers: Mgr. Ing. Matúš Tuna, prof. Ing. Igor Farkaš, Dr.

Last change: 01.09.2018
Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKV-105/15	Fundamentals of Programming

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

Number of credits: 4

Recommended semester: 1.

Educational level: II.

Prerequisites:

Antirequisites: FMFI.KAI/2-IKV-105/10

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 43

A	B	C	D	E	FX
39,53	13,95	9,3	13,95	13,95	9,3

Lecturers: Mgr. Ing. Matúš Tuna

Last change: 23.09.2017

Approved by: prof. Ing. Igor Farkaš, Dr.

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: 666

A	B	C	D	E	FX
32,28	29,13	21,17	9,91	2,85	4,65

Lecturers: Mgr. Alexandra Maďarová, Mgr. Marián Mancovič

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

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: 423

A	B	C	D	E	FX
30,5	21,99	22,93	14,66	3,78	6,15

Lecturers: Mgr. Alexandra Maďarová, Mgr. Marián Mancovič

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

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: 150

A	B	C	D	E	FX
38,0	28,0	22,0	6,67	2,67	2,67

Lecturers: Mgr. Alexandra Maďarová, Mgr. Marián Mancovič

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

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. Alexandra Maďarová, Mgr. Marián Mancovič

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKV-236/10	Grounded Cognition

Educational activities:
Type of activities: lecture / seminar
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: II.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 80/20

Learning outcomes:

Class syllabus:

Recommended literature:
Various papers related to discussed topics.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 90

A	B	C	D	E	FX
32,22	32,22	22,22	4,44	8,89	0,0

Lecturers: prof. Ing. Igor Farkaš, Dr.

Last change: 20.09.2018

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAI/1-AIN-304/15	**Course title:** Introduction to Artificial Intelligence
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., II.	
Prerequisites:	
Course requirements: Students can gain 25% for exercises, 10% for tests and 15% for the project. Students have to earn at least half from each of these. The final exam is worth 50% of the total mark. If students do not meet the minimal condition from the semester, then they cannot pass the exam. Scale of assessment (preliminary/final): Practical work 50% (25% for exercises, 10% for tests, 15% for the project).50% for the final exam.Grading: A 91-100%, B 81-90%, C 71-80%, D 61-70%, E 51-60%, Fx < 51%	
Learning outcomes: Students get the basic insight into artificial intelligence, that can be further extended in the master studies. The course covers the basics of symbolic and subsymbolic artificial intelligence. The theory is combined with numerous practical exercises.	
Class syllabus: Definition of AI, description of simple rational agents. Logical agents, uninformed and informed search in solution space, the basics of game theory, problems with restrictive conditions, optimization, more complex agents capable of inference and learning. Propositional logic and inference using the knowledge base. Learning from examples: supervised learning, classification and regression, multilayer feedforward neural network and its applications, model selection, generalization. Nonparametric models, nearest neighbor methods, clustering, self-organization.	
Recommended literature: Stuart Russell and Peter Norvig, Artificial Intelligence: A Modern Approach (3rd edition), Prentice Hall, USA, 2010.	
Languages necessary to complete the course: English, Slovak	
Notes:	

Past grade distribution Total number of evaluated students: 74					
A	B	C	D	E	FX
12,16	18,92	17,57	17,57	14,86	18,92
Lecturers: prof. RNDr. Ľubica Beňušková, PhD.					
Last change: 23.01.2019					
Approved by: prof. Ing. Igor Farkaš, Dr.					

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAI/2-IKVa-121/18	**Course title:** Introduction to Cognitive Science

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

Number of credits: 6

Recommended semester: 1.

Educational level: II.

Prerequisites:

Course requirements:
Readings 25%
Short oral presentations 15%
Paper 30%
Paper peer review 10%
Group work & colloquium 10%
Integration reflection 10%
Scale of assessment (preliminary/final): 50/50

Learning outcomes:
Content-wise, the students will learn about:
History, theories, methods and topics of cognitive science
Disciplines of cognitive science, their specific contributions
Representational paradigms
Cognitive modeling
Ethical aspects of cognitive science and technologies
Method-wise, the students will acquire the following skills:
Think in an interdisciplinary way, appreciate multiple perspectives.
Search and critically evaluate scientific knowledge sources.
Critically read papers of different disciplines/styles.
Orally present topics of interest.
Learn about academic honesty practices and plagiarism.
Write a scientific paper and cite literature properly.
Review their peer's paper.
Work independently, participate in discussions.

Class syllabus:
History, object and methods of cognitive science. Representational paradigms: functionalism, cognitivism, connectionism, embodiment, dynamical systems. Computational modeling. Neuroscience. Ethical aspects of research in cognitive science.

Recommended literature:

Silverman G., Friedenberg J. (2011): Cognitive science. An introduction to the study of mind. SAGE.
Thagard, P. (2005): Mind: Introduction to Cognitive Science, 2nd Edition. MIT Press.
Stainton, J.R (2006): Contemporary Debates in Cognitive Science. Wiley.
Bermúdez, J. L.(2014): Cognitive science. An introduction to the science of the mind. Cambridge University Press.

Languages necessary to complete the course:
English

Notes:

Past grade distribution
Total number of evaluated students: 14

A	B	C	D	E	FX
42,86	35,71	14,29	7,14	0,0	0,0

Lecturers: doc. RNDr. Martin Takáč, PhD., RNDr. Barbora Cimrová, PhD.

Last change: 21.09.2018

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKV-121/00	Introduction to Cognitive Science

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

Number of credits: 5

Recommended semester: 1.

Educational level: II.

Prerequisites:

Course requirements:
Readings 25%
Short oral presentations 15%
Paper 30%
Paper peer review 10%
Group work & colloquium 10%
Integration reflection 10%
Scale of assessment (preliminary/final): 50/50

Learning outcomes:
Content-wise, the students will learn about:
History, theories, methods and topics of cognitive science
Disciplines of cognitive science, their specific contributions
Representational paradigms
Cognitive modeling
Ethical aspects of cognitive science and technologies
Method-wise, the students will acquire the following skills:
Think in an interdisciplinary way, appreciate multiple perspectives.
Search and critically evaluate scientific knowledge sources.
Critically read papers of different disciplines/styles.
Orally present topics of interest.
Learn about academic honesty practices and plagiarism.
Write a scientific paper and cite literature properly.
Review their peer's paper.
Work independently, participate in discussions.

Class syllabus:
History, object and methods of cognitive science. Representational paradigms: functionalism, cognitivism, connectionism, embodiment, dynamical systems. Computational modeling. Neuroscience. Ethical aspects of research in cognitive science.

Recommended literature:

Silverman G., Friedenberg J. (2011): Cognitive science. An introduction to the study of mind. SAGE.
Thagard, P. (2005): Mind: Introduction to Cognitive Science, 2nd Edition. MIT Press.
Stainton, J.R (2006): Contemporary Debates in Cognitive Science. Wiley.
Bermúdez, J. L.(2014): Cognitive science. An introduction to the science of the mind. Cambridge University Press.

Languages necessary to complete the course:
English

Notes:

Past grade distribution
Total number of evaluated students: 137

A	B	C	D	E	FX
38,69	24,82	16,79	8,76	7,3	3,65

Lecturers: RNDr. Barbora Cimrová, PhD., RNDr. Kristína Malinovská, PhD., doc. RNDr. Martin Takáč, PhD.

Last change: 21.09.2018

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKVa-115/18	Introduction to Computational Intelligence

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: II.

Prerequisites:

Recommended prerequisites:
None.

Course requirements:
Grading: 91-100% = A, 81-90% = B, 71-80% = C, 61-70% = D, 51-60% = E, else Fx.
Scale of assessment (preliminary/final): Active participation during the semester (max. 14 points).Written mid-term test (max. 12 points).Final written-oral exam (max. 24 points).

Learning outcomes:
The course objectives are to make the students familiar with basic principles of various computational methods of data processing that can commonly be called computational intelligence (CI). This includes mainly bottom-up approaches to solutions of (hard) problems based on various heuristics (soft computing), rather than exact approaches of traditional artificial intelligence based on logic (hard computing). Examples of CI are nature-inspired methods (artificial neural networks, evolutionary algorithms, fuzzy systems), as well as probabilistic methods and reinforcement learning. After the course the students will be able to conceptually understand the important terms and algorithms of CI, and choose appropriate method(s) for a given task. The theoretical introduction is combined with practical examples.

Class syllabus:

Recommended literature:
Craenen B., Eiben A. (2003): Computational Intelligence. In: Encyclopedia of Life Support Sciences, EOLSS Publishers Co.
Engelbrecht A. (2007). Computational Intelligence: An Introduction (2nd ed.), John Willey & Sons. Available in faculty library.
Russell S., Norwig P. (2010). Artificial Intelligence: A Modern Approach, (3rd ed.), Prentice Hall. Available in the faculty library.
Marsland S. (2015). Machine Learning: An Algorithmic Perspective, (2nd ed.), CRC Press.
Woergoetter F., Porr B. (2008). Reinforcement learning, Scholarpedia, 3(3):1448.
Zadeh L. (2007). Fuzzy logic, Scholarpedia, 3(3):1766.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 18

A	B	C	D	E	FX
33,33	22,22	5,56	16,67	16,67	5,56

Lecturers: prof. Ing. Igor Farkaš, Dr.

Last change: 01.09.2018

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKV-115/00	Introduction to Computational Intelligence

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

Number of credits: 5

Recommended semester: 1.

Educational level: II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
1. Introduction to computational intelligence, historical overview of methods and approaches.
2. Architektures of intelligent agents. Structure, components, various representation formalisms. Cognitivism and emergenism.
3. Symbolic artificial intelligence: overview of used methods (of logical reasoning, inferencing).
4. Probabilistic reasoning, Bayesian nets, decision making.
5. Introduction to artificial neural nets (ANN): inspiration from neurobiology, tasks suitable for ANNs.
Feedforward ANNs.
6. Data mining: self-organizing ANNs, feature extraction from high-dimensional data.
7. Recurrent ANNs: temporal structure in data, incorporating time into models.
8. Evolutionary algorithms, optimization.
9. Fuzzy systems, fuzzy logic, linguistic variable, fuzzy reasoning.
10. Summary. Using methods of computational intelligence in cognitive science.

Recommended literature:
Various papers to particular topics.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 129

A	B	C	D	E	FX
18,6	21,71	19,38	18,6	16,28	5,43

Lecturers: prof. Ing. Igor Farkaš, Dr.

Last change: 23.09.2017

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKVa-123/18	Introduction to Neuroscience

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: 5

Recommended semester: 1.

Educational level: II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Neuro-immuno-endocrine regulation of human body.
Gross functional anatomy of the nervous system, the brain as the main regulatory organ.
The role of glial cells. Complex functions of the brain and the brain programmes.
Neuronal signalling. The membrane potential, receptor potential. Nerve impulses, action potential.
Conduction of nerve impulses. Stimulation of nerve fibres, refractory periods.
Overview of neuronal communication, synaptic transmission, the role of myelin.
Developmental physiology of the brain. Neuronal plasticity. Functional organization of neuronal circuits.
Electrocorticogram, electroencephalogram, evoked potentials. Sleep and wakefulness.
Physiology of emotions, behaviour and motivation. Higher nervous functions including memory, learning and speech.
Functional specialization of brain hemispheres and gender dimorphism.

Recommended literature:
Koukolík,F.: Mozek a jeho duše. 3.vyd. Galén, Praha, 2005, 275 s.
Bear, M.F., Connors, B.W., Paradiso, M.A.: Neuroscience – exploring the brain. 2nd ed. Lippincott, Williams and Wilkins, Baltimore, 2001, 855 pp.
Gazzaniga,M.S., Ivry,R.B., Mangun,G.R.: Cognitive neuroscience – the biology of the mind. W.W.Norton, New York, 2002, 681 pp.
Kandel, E.R., Schwartz, J.H., Jessel, T.M.: Principles of Neural Science. 4th ed. McGraw-Hill Medical, 2000, 1414pp.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 13

A	B	C	D	E	FX
30,77	7,69	23,08	38,46	0,0	0,0

Lecturers: prof. MUDr. Daniela Ostatníková, PhD.

Last change: 19.09.2018

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI-LF.FyÚ/2-IKV-123/00	**Course title:** Introduction to Neuroscience
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: 5	
Recommended semester: 1.	
Educational level: II.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus: Neuro-immuno-endocrine regulation of human body. Gross functional anatomy of the nervous system, the brain as the main regulatory organ. The role of glial cells. Complex functions of the brain and the brain programmes. Neuronal signalling. The membrane potential, receptor potential. Nerve impulses, action potential. Conduction of nerve impulses. Stimulation of nerve fibres, refractory periods. Overview of neuronal communication, synaptic transmission, the role of myelin. Developmental physiology of the brain. Neuronal plasticity. Functional organization of neuronal circuits. Electrocorticogram, electroencephalogram, evoked potentials. Sleep and wakefulness. Physiology of emotions, behaviour and motivation. Higher nervous functions including memory, learning and speech. Functional specialization of brain hemispheres and gender dimorphism.	
Recommended literature: Koukolík,F.: Mozek a jeho duše. 3.vyd. Galén, Praha, 2005, 275 s. Bear, M.F., Connors, B.W., Paradiso, M.A.: Neuroscience – exploring the brain. 2nd ed. Lippincott, Williams and Wilkins, Baltimore, 2001, 855 pp. Gazzaniga,M.S., Ivry,R.B., Mangun,G.R.: Cognitive neuroscience – the biology of the mind. W.W.Norton, New York, 2002, 681 pp. Kandel, E.R., Schwartz, J.H., Jessel, T.M.: Principles of Neural Science. 4th ed. McGraw-Hill Medical, 2000, 1414pp.	
Languages necessary to complete the course:	
Notes:	

Past grade distribution Total number of evaluated students: 140					
A	B	C	D	E	FX
14,29	20,71	28,57	13,57	20,71	2,14
Lecturers: prof. MUDr. Daniela Ostatníková, PhD.					
Last change: 02.06.2015					
Approved by: prof. Ing. Igor Farkaš, Dr.					

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAI/2-IKVa-114/18	**Course title:** Introduction to Philosophy of Mind
Educational activities: **Type of activities:** lecture / seminar **Number of hours:** **per week:** 2 / 1 **per level/semester:** 28 / 14 **Form of the course:** on-site learning	
Number of credits: 5	
Recommended semester: 2.	
Educational level: II.	
Prerequisites:	
Course requirements: Final paper- analytic-critical study (100%) Grade A: 90% , B: 80% , C 70%, D 60%, and grade E at minimum 50%.	
Learning outcomes: Students acquire knowledge of representative philosophical conceptions, theories and problems within contemporary philosophy of mind. They will be acquainted with main arguments and types of argumentation on the mind/body problem and they will improve their capacity for critical discussion and ability to defend their own attitudes.	
Class syllabus: From the history in studying human mind and consciousness Basic terminology, concepts: mind, consciousness, reason, mental states, subjectivity, mental causality, self etc.; Taxonomy of approaches in the study on the nature of mind (dualism, identity theory, functionalism, naturalism etc.); The concept and problem of consciousness, Medicine and Philosophy (study of normal and pathological cases) Impairments of Consciousness – Novel methods of investigating the states of consciousness. Models and theories of conscious experience.	
Recommended literature: GÁLIKOVÁ, S.: An Introduction to the Philosophy of Mind. Trnava, FFTU, 2013. MASLIN, K., T.: An Introduction to thePphilosophy of mind. Cambridge, Polity, 2007 BLOCK, N., FLANAGAN, O., GUZELDERE, G. (1996): The Nature of Consciousness: Philosophical and Scientific Debates. Cambridge, MA, MIT Press. CHALMERS, D. (1996): The Conscious Mind. New York, Oxford University Press. DENNETT, D. (1991): Consciousness explained. Little, Brown. CHURCHLAND, P. M. (1995): The Engine of Reason, the Seat of the Soul. Cambridge, MA, MIT Press. SEARLE, J. (1992): The Rediscovery of Mind. Cambridge, MA, MIT Press. GÁLIKOVÁ, S.(2013): Philosophy of Consciousness. Towarzystwo Słowaków w Polsce.	

Languages necessary to complete the course:
English

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: prof. PhDr. Silvia Gáliková, PhD.

Last change: 18.02.2019

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAI/2-IKV-114/00	**Course title:** Introduction to Philosophy of Mind
Educational activities: **Type of activities:** lecture / seminar **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: II.	
Prerequisites:	
Course requirements: Grading scale: A>90%, B>80%, C>70%, D>60%, E>50% Scale of assessment (preliminary/final): activity during the seminar (20%), written final paper (80%)	
Learning outcomes: Students acquire knowledge of representative philosophical conceptions and problems within contemporary philosophy of mind. They will be acquainted with main arguments and types of argumentation on the mind/body problem and they will improve their capacity for critical discussion and ability to defend their own attitudes.	
Class syllabus: Mind/Body(brain) problem, basic terminology: concepts: mind, consciousness, reason, subjectivity, intentionality, mental causality; first- and third-person perspectives; Dualism – substance dualism, Cartesian dualism; problems for dualism; The Mind/Brain identity theory – historical background, the type-type identity theory and the token-token identity theory, strengths of and problems for the identity theory; Behaviourism: analytical, methodological, ontological; Functionalism – metaphysical functionalism, psycho- functionalism, computational; functionalism, strengths and criticism; Problem of mental causation, reasons for actions as causes; Reason and emotions: neuroscience research, findings (case studies); Wittgenstein: relation between language, mind and the world.; Personal identity as physical/psychological continuity, the nature of the Self.	
Recommended literature: An Introduction to the Philosophy of Mind/S. Gáliková. Trnava: FFTU, 2013. An introduction to the philosophy of mind / K. T. Maslin. Cambridge : Polity, 2007	
Languages necessary to complete the course:	
Notes:	

Past grade distribution Total number of evaluated students: 131					
A	B	C	D	E	FX
41,22	31,3	15,27	5,34	5,34	1,53
Lecturers: prof. PhDr. Silvia Gáliková, PhD.					
Last change: 02.10.2017					
Approved by: prof. Ing. Igor Farkaš, Dr.					

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAI/2-IKVa-111/18	**Course title:** Introduction to Psychology
Educational activities: **Type of activities:** lecture / seminar **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: 1.	
Educational level: II.	
Prerequisites:	
Recommended prerequisites: None.	
Course requirements: Scale of assessment (preliminary/final): Midterm: written exam (25%) a seminar projects (25%). Examination period: final written exam (50%). A: 91–100; B: 81–90; C: 73–80; D: 66–72; E: 60–65; Fx: 0–59.	
Learning outcomes: Students will be familiarized with the subject of psychology as a scientific discipline, its main schools, approaches, and methods used to investigate mind and behavior. Lectures will provide introductory information about sensation, perception, attention, memory, other higher cognitive functions, and emotion.	
Class syllabus: 1. What is Mind? 2. What is Psychology? 3. Psychological research: Design & Methods & Psychometrics. 4. Biological Determinants of Psychological Phenomena. 5. Sensation. 6. Perception. 7. Attention. 8. Memory. 9. Thinking & Language. 10. Creativity. 11. Emotionality.	
Recommended literature: 1. An Introduction to the History of Psychology (Hergenhahn & Henley, 2014) 2. Introduction to Psychology (Kalat, 2008) 3. Research in Psychology: Methods and Design (Goodwin, 2009) 4. Stevens' Handbook of Experimental Psychology: Methodology in Experimental Psychology (Pashler & Wixted, 2002) 5. Handbook of Individual Differences in Cognition: Attention, Memory, and Executive Control (Gruszka, Matthews & Szymura, 2012)	
Languages necessary to complete the course:	
Notes:	

Past grade distribution Total number of evaluated students: 4					
A	B	C	D	E	FX
0,0	50,0	25,0	0,0	25,0	0,0
Lecturers: Mgr. Martin Marko, PhD.					
Last change: 21.09.2018					
Approved by: prof. Ing. Igor Farkaš, Dr.					

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKV-111/15	Introduction to Psychology

Educational activities:
Type of activities: lecture / seminar
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: 1.

Educational level: II.

Prerequisites:

Antirequisites: FMFI-FSEV/2-IKV-111/00

Course requirements:
Students are required to attend and actively participate in the lectures and seminars (20%). In order to obtain the credits, students need to pass the midterm (20%) and final test (20%). During the semester, two seminar assignments will be present: (1) each student will choose a seminar project (presentation of a theoretical topic; 20%) and (2) seminar reading (a brief report of an interesting empirical research paper; 20%).
Scale of assessment (preliminary/final): Midterm: written exam (25%) & seminar projects (25%).Examination period: final written exam (50%)Grading: A: 91–100; B: 81–90; C: 73–80; D: 66–72; E: 60–65; Fx: 0–59

Learning outcomes:
Psychology is the scientific study of behavior and mind. Through this introductory course, students of cognitive science will have the opportunity to understand several essential topics in science of psychology. After introducing the most influential schools of thought and fundamentals of research methods in psychology, selected key concepts related to cognition and emotion are discussed. These concepts range from elementary psychological phenomena to more complex psychological functions concerning sensation, perception, attention, memory, thinking and creativity.

Class syllabus:
Introduction. Brief history & Subject. Mind, Brain & Body. General Psychology. Psychological Methods. Developmental Psychology. The psychology of Personality. Clinical Psychology. Social Psychology.

Recommended literature:
Introduction to Psychology (Kalat, 2010)
Atkinson & Hilgard's Introduction to Psychology (2014)
Research in Psychology: Methods and Design (Goodwin, 2009)
Stevens' Handbook of Experimental Psychology: Methodology in Experimental Psychology (Pashler & Wixted, 2002)

Languages necessary to complete the course:
English, Slovak

Notes:
Students can also choose to carry out a simple empirical assessment and present (i.e., discuss) the results as a seminar project.

Past grade distribution
Total number of evaluated students: 124

A	B	C	D	E	FX
24,19	31,45	20,97	11,29	9,68	2,42

Lecturers: Mgr. Martin Marko, PhD.

Last change: 23.09.2017

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKVa-138/18	Introduction to Robotics

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

Number of credits: 5

Recommended semester: 2.

Educational level: II.

Prerequisites:

Recommended prerequisites:
basic programming skills in Python

Course requirements:
activity during the semester, final written test
Scale of assessment (preliminary/final): 50:50

Learning outcomes:
After competing the course, students will be familiar with the basic concepts of robotics and will have acquired practical skills on how to control the robot in case of simple tasks, either in a simulated environment or with a physical robot. In addition, students will also get the basics of philosophical background of cognitive robotics (cognitivism versus post-cognitivism, empirism versus rationalism).

Class syllabus:
1. Action. Actuators. The robot gear control: via position, via speed. The robot arm control. Forward and inverse kinematics.
2. Perception. Sensors. The basic processing of sensor data: distance, camera image, depth map, tactile map.
3. Control. Decomposition of the control system by function and by activity. Significance of real time.
4. The regular objects recognition. Hough transform.
5. The irregular objects recognition: DOT/HOG, SIFT/SURF/ORB, phase correlation. Representation of objects in robot memory. Sensory-motor approach to perception.
6. Behavioral robotics. Emergence of control in modular control architecture.
7. Cognitive approach to robot control. GOFAI, planning. STRIPS. Sussman's anomaly. Frame problem.
8. Post-cognitive approach to robot control. Dreyfus' criticism of GOFAI. Brooks' subsumption architecture. Situated robots. Embodiment. Interaction principle (robot ACE).
9. Minsky' society model of mind. Inspiration from Piaget's developmental psychology. Dennet's mind types. Robot COG.
10. Intelligence as a social phenomenon in group of robots.
11. Robots recognizing and emulating emotions. Robot KISMET.

12. Cloud technology for robots. Robot Pepper. IBM Watson. MicroSoft Azure.
13. Control emerging from interaction of robot with its environment. Delayed reinforcement learning, Genetic programing, Neural network training.

Recommended literature:

Minsky, M.: Society of Mind, 1986
Brooks, R.: Cambrian Intelligence, 1999
Arkin, R.: Behavior-Based Robotics (Intelligent Robotics and Autonomous Agents), 2000
Floreano, D.: Evolutionary Robotics: The Biology, Intelligence, and Technology of Self-Organizing Machines (Intelligent Robotics and Autonomous Agents series), 2004
Vernon, D.: A Roadmap for Cognitive Development in Humanoid Robots (Cognitive Systems Monographs), 2014
Davies, E.: Computer Vision 5th Edition. Principles, Algorithms, Applications, Learning, 2018

Languages necessary to complete the course:
English, Slovak

Notes:

Past grade distribution
Total number of evaluated students: 6

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

Lecturers: RNDr. Andrej Lúčny, PhD., prof. Ing. Igor Farkaš, Dr.

Last change: 22.01.2019

Approved by: prof. Ing. Igor Farkaš, Dr.

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAI/2-IKVa-991/18	**Course title:** Master's Thesis
Number of credits: 20	
Educational level: II.	
State exam syllabus:	
Last change:	
Approved by: prof. Ing. Igor Farkaš, Dr.	

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKVa-267/18	Mathematical Logic for Cognitive Science

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: 5

Recommended semester: 2.

Educational level: 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: 7

A	B	C	D	E	FX
71,43	14,29	14,29	0,0	0,0	0,0

Lecturers: prof. RNDr. Pavol Zlatoš, PhD.

Last change:

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAG/2-IKV-267/00	Mathematical Logic for Cognitive Science

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: 5

Recommended semester: 2.

Educational level: II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
0. Introduction: thinking, language and logic
1. Sentential calculus: syntax, semantics, soundness and completeness
2. First-order logic: syntax, semantics, soundness and completeness, compactness, interpretations, nonstandard models
3. Godel incompleteness theorems: Peano arithmetics, arithmetization of syntax, computable functions, incompleteness and undecidability, consequences

Recommended literature:
H. B. Enderton, A mathematical introduction to logic, (2nd ed.), Harcourt - Academy Press, San Diego-New York-Boston-London-Toronto-Sydney-Tokyo, 2001

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 101

A	B	C	D	E	FX
26,73	24,75	27,72	12,87	4,95	2,97

Lecturers: prof. RNDr. Pavol Zlatoš, PhD.

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KDMFI/2-IKV-102/15	**Course title:** Mathematics
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: 4	
Recommended semester: 1.	
Educational level: II.	
Prerequisites:	
Antirequisites: FMFI.KAI/2-IKV-102/00	
Course requirements: Grading: A > 90%, B > 80%, C> 70%, D > 60%, E > 52% points. Scale of assessment (preliminary/final): To be classified, the student has to achieve at least 50% of each activity:project (15%), weekly exams (40%), middle term exam (15%), final exam (30%).	
Learning outcomes: The lectures will provide students with basics of propositional and predicate logic, linear algebra, mathematical analysis, and probability that are important for the study of informatics and for (computational) cognitive science. At the same time, the students will learn about mathematical culture, notation, way of thinking and expressing oneself.	
Class syllabus: 1. Basics of logic and proving methods: propositional logic, predicate logic, the sets of numbers, proofs. 2. Basics of mathematical analysis: functions, differential calculus. 3. Basics of linear algebra: matrices and vectors, operations.	
Recommended literature: Discrete and combinatorial mathematics: An applied introduction / Ralph P. Grimaldi. Rose-Hulman Institute of Technology: Pearson, 2004. Calculus / Gilbert Strang. Massachusetts Institute of Technology: Wellesley-Cambridge Press Fundamentals of Linear Algebra / James B. Carrell. Canada: University of British Colombia, 2005 Artificial Intelligence: A Modern Approach (3rd ed.) / Stuart Russell and Peter Norvig. The USA: Pearson, 2010	
Languages necessary to complete the course:	
Notes:	

Past grade distribution Total number of evaluated students: 48					
A	B	C	D	E	FX
45,83	22,92	4,17	10,42	6,25	10,42
Lecturers: Mgr. Martina Babinská, PhD.					
Last change: 01.09.2018					
Approved by: prof. Ing. Igor Farkaš, Dr.					

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KDMFI/2-IKVa-102/18	**Course title:** Mathematics for Cognitive Science
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: 4	
Recommended semester: 1.	
Educational level: II.	
Prerequisites:	
Course requirements: To be classified, the student has to achieve at least 50% of each activity: project (15%), weekly exams (40%), middle term exam (15%), final exam (30%). Scale of assessment (preliminary/final): Grading: A > 90%, B > 80%, C> 70%, D > 60%, E > 52% points.	
Learning outcomes: The lectures will provide students with basics of propositional and predicate logic, linear algebra, mathematical analysis, and probability that are important for the study of informatics and for (computational) cognitive science. At the same time, the students will learn about mathematical culture, notation, way of thinking and expressing oneself.	
Class syllabus: 1. Basics of logic and proving methods: propositional logic, predicate logic, the sets of numbers, proofs. 2. Basics of mathematical analysis: functions, differential calculus. 3. Basics of linear algebra: matrices and vectors, operations.	
Recommended literature: Discrete and combinatorial mathematics: An applied introduction / Ralph P. Grimaldi. Rose-Hulman Institute of Technology: Pearson, 2004. Calculus / Gilbert Strang. Massachusetts Institute of Technology: Wellesley-Cambridge Press Fundamentals of Linear Algebra / James B. Carrell. Canada: University of British Colombia, 2005 Artificial Intelligence: A Modern Approach (3rd ed.) / Stuart Russell and Peter Norvig. The USA: Pearson, 2010	
Languages necessary to complete the course:	
Notes:	

Past grade distribution Total number of evaluated students: 10					
A	B	C	D	E	FX
40,0	10,0	20,0	10,0	0,0	20,0
Lecturers: Mgr. Martina Babinská, PhD.					
Last change: 01.09.2018					
Approved by: prof. Ing. Igor Farkaš, Dr.					

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKV-181/00	Meaning and Communication

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

Number of credits: 5

Recommended semester: 2.

Educational level: II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
- Logical analysis and analysis of language practices – two rival approaches?
- Meaning of an expression as its use (usage)
- J. L. Austin about meaning; meanings of „meaning“ by Austin performatives versus constatives
- Speech act as the basic unit of communication
- Performative and constative utterances
- Taxonomy of speech acts and its criteria
- Locutionary, illocutionary and perlocutionary aspects of a speech act (discussion: Strawson – Austin - Searle)
- Referring as a speech act
- Applications of the speech acts theory
- Elaboration of the speech acts theory byRozpracovanie teórie rečových aktov v prácach J. Searla, štruktúra ilokučných aktov
- Psychological theories of meaning; H. P. Grice – sentence meaning and utterer’s meaning
- Logic and conversation; conversational „implicatures“
- Conversational maxims

Recommended literature:
Austin, J. L.: Ako niečo robiť slovami, Kalligram, Bratislava 2004
Grice, H. P.: Studies in the Way of Words, Harvard University Press 1991
Koťátko, P.: Význam a komunikace, Filosofia, Praha, 1998
Searle, J. R.: Rečové akty, Kalligram, Bratislava 2006

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 28

A	B	C	D	E	FX
28,57	39,29	7,14	3,57	10,71	10,71

Lecturers: PhDr. Dezider Kamhal, PhD.

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-ERA-001/15	Mobility Project I

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

Number of credits: 10

Recommended semester: 3.

Educational level: II.

Prerequisites:

Course requirements:
Work during the semester
No final exam
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
The course is for our students of the master program in cognitive science, who can sign up for it during their (compulsory) mobility semester at the chosen host university (within the consortium), where they will work on a research project of the corresponding load (number of credits). It also serves for foreign students on mobility at our faculty, with the same purpose.

Class syllabus:
The content is individual, based on an agreement with the project mentor. The content is specified in the MEi:CogSci Learning Contract
for the Mobility Semester (internal document of the MEiCogSci consortium).

Recommended literature:

Languages necessary to complete the course:
English

Notes:

Past grade distribution
Total number of evaluated students: 41

A	B	C	D	E	FX
51,22	19,51	7,32	4,88	9,76	7,32

Lecturers:

Last change: 11.03.2019

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-ERA-002/15	Mobility Project II

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

Number of credits: 15

Recommended semester: 3.

Educational level: II.

Prerequisites:

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

Learning outcomes:
The course is for our students of the master program in cognitive science, who can sign up for it during their (compulsory) mobility semester at the chosen host university (within the consortium), where they will work on a research project of the corresponding load (number of credits). It also serves for foreign students on mobility at our faculty, with the same purpose. Within this project the student acquires an experience to do research (computational modeling, behavioral experiment, theoretical investigation...) in the field of cognitive science.

Class syllabus:
The course content is individual, based on an agreement with the project mentor. The content is specified in the MEi:CogSci Learning Contract for the Mobility Semester (internal document of the consortium).

Recommended literature:

Languages necessary to complete the course:
English

Notes:

Past grade distribution
Total number of evaluated students: 22

A	B	C	D	E	FX
77,27	4,55	9,09	9,09	0,0	0,0

Lecturers:

Last change: 11.03.2019

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-ERA-003/15	Mobility Project III

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

Number of credits: 20

Recommended semester: 3.

Educational level: II.

Prerequisites:

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

Learning outcomes:
The course is for our students of the master program in cognitive science, who can sign up for it during their (compulsory) mobility semester at the chosen host university (within the consortium), where they will work on a research project of the corresponding load (number of credits). It also serves for foreign students on mobility at our faculty, with the same purpose. Within this project the student acquires an experience to do research (computational modeling, behavioral experiment, theoretical investigation, ...) in the field of cognitive science.

Class syllabus:

Recommended literature:

Languages necessary to complete the course:
English

Notes:

Past grade distribution
Total number of evaluated students: 26

A	B	C	D	E	FX
69,23	11,54	19,23	0,0	0,0	0,0

Lecturers:

Last change: 11.03.2019

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKVa-137/18	Modern Methods in Brain Research

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

Number of credits: 5

Recommended semester: 2.

Educational level: 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: 8

A	B	C	D	E	FX
62,5	25,0	12,5	0,0	0,0	0,0

Lecturers: RNDr. Barbora Cimrová, PhD.

Last change: 21.09.2018

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKV-137/15	Modern Methods in Brain Research

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

Number of credits: 5

Recommended semester: 2.

Educational level: 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: 35

A	B	C	D	E	FX
37,14	22,86	28,57	0,0	8,57	2,86

Lecturers: RNDr. Barbora Cimrová, PhD.

Last change: 23.09.2017

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKV-189/16	Natural Language Processing

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., 4.

Educational level: II.

Prerequisites:

Course requirements:

Learning outcomes:
The students will acquire knowledge and practical experience in the field of natural language processing. They will know how to effectively apply the underlying theory from probability, statistics, computational linguistics, and machine learning, to perform tasks involving unstructured text, such as spelling correction, text generation, sentiment analysis, information extraction, and question answering.

Class syllabus:
(1) Text Processing.
(2) Language Modeling (n-grams), Spelling Correction.
(3) Text Classification (Naive Bayes), Sentiment Analysis.
(4) Named Entity Recognition (HMM, MaxEnt), Relation Extraction.
(5) POS Tagging, Parsing.
(6) Information Retrieval.
(7) Meaning Extraction, Question Answering.

Recommended literature:
Speech and Language Processing, 2nd Edition / Daniel Jurafsky, James H Martin. Upper Saddle River : Prentice Hall, 2008

Languages necessary to complete the course:
English

Notes:

Past grade distribution
Total number of evaluated students: 8

A	B	C	D	E	FX
62,5	25,0	12,5	0,0	0,0	0,0

Lecturers: Mgr. Marek Šuppa

Last change: 23.09.2017

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-ERA-004/15	New Trends in Cognitive Science

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

Number of credits: 10

Recommended semester: 3.

Educational level: 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: 40

A	B	C	D	E	FX
42,5	35,0	20,0	2,5	0,0	0,0

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKV-238/15	Philosophy of Artificial Intelligence

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

Number of credits: 5

Recommended semester: 3.

Educational level: 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: 7

A	B	C	D	E	FX
85,71	0,0	0,0	0,0	14,29	0,0

Lecturers: prof. PhDr. Emil Višňovský, CSc.

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKV-143/00	Philosophy of Language

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

Number of credits: 5

Recommended semester: 2.

Educational level: II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
- Frege‘s semantic triangle
- B. Russell and his theory of definite descriptions
- Critics of Russell’s theory of descriptions by P. F. Strawson and by K. S. Donnellan
- Relation between language and „world“ („Tractatus Logico-Philosophicus“ by Wittgenstein)
- Logical positivism and critics of the traditional philosophy and its alleged „pseudo-problems“
- Natural language and constructed language – two aproaches to ordinary language
- W. v. O. Quine and two dogmas of empiricism
- „In Defense of a Dogma“ – H. P. Grice and P. F. Strawson
- Meaning of an expression as an object versus meaning of an expression as its use (usage)
- Late Wittgenstein – rejection of Tractarian view on language and on philosophical analysis
- „Blue and Brown Books“, language games and family resemblances
- „Philosophical Investigations“, meaning of expression as its use, therapeutic view on philosophy,
- Moore‘s defense of common sense and his „proof“ of an external world; Wittgenstein’s notes on certainty
- Language games and following rules („Philosophical Investigations“)

Recommended literature:
Peregrin, J.: Kapitoly z analytické filozofie, Nakladatelství Fil. ústavu AV ČR, Praha 2005
Lycan, W. G.: Philosophy of Language. A Contemporary Introduction, Routledge 2001
Wittgenstein, L.: Modrá a Hnedá kniha, Kalligram, Bratislava 2002
Wittgenstein, L.: O istote, Kalligram, Bratislava 2006
Oravcová, M. (edit.): Filozofia prirodzeného jazyka, Archa, Bratislava 1992
Kamhal, D.(edit.): Z analytickej filozofie I., UK Bratislava 1993, skriptá

Languages necessary to complete the course:

Notes:

Past grade distribution Total number of evaluated students: 68					
A	B	C	D	E	FX
30,88	30,88	11,76	7,35	16,18	2,94
Lecturers: PhDr. Dezider Kamhal, PhD.					
Last change: 02.06.2015					
Approved by: prof. Ing. Igor Farkaš, Dr.					

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/2-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: 2

Recommended semester: 1.

Educational level: II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Practicing of the students´ game skills in collective sports: basketball, volleyball, football, floorball and hockey. Mastering of the basic technique of a particular sport discipline in other sports. In paddling, basic training on still and slightly flowing water. Development of coordination skills, improvement of articular mobility and cardiovascular system.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 1433

A	B	C	D	E	FX
99,16	0,56	0,0	0,0	0,0	0,28

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

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/2-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: 2

Recommended semester: 2.

Educational level: II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Practicing of offensive and defensive game combinations and playing with modified rules in collective sports such as basketball, volleyball, football, floorball, hockey. Command of elements of higher difficulty in locomotion skills (swimming - crawl stroke, breast stroke, butterfly stroke, trampoline jumping and aerobics – practicing of areobics compositions, bodybuilding – development of the main muscle groups, paddling on running water. Testing of the level of physical fitness and coordination skills.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 1331

A	B	C	D	E	FX
99,77	0,08	0,0	0,08	0,0	0,08

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

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/2-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: II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
To improve offensive and defensive game combinations in collective sports. Practicing of tactical and technical elements in individual sports. Compensatory exercises to correct wrong body posture. Stretching. Competition rules in sport disciplines.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 1081

A	B	C	D	E	FX
99,44	0,37	0,0	0,0	0,0	0,19

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

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/2-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: II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Sport training for Faculty Championships in a selected sport with modified rules. Selection of sport-talented students into teams of the Faculty Sport League, University League of Bratislava Faculties, and participation in sport events of the Faculty and University.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 957

A	B	C	D	E	FX
99,37	0,42	0,0	0,0	0,1	0,1

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

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKV-167/00	Practical Classes in Robotics

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

Number of credits: 3

Recommended semester: 2.

Educational level: II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Seminar topics will cover: robotic control architectures, probabilistic robotics, multi-robotic systems, evolutionary robotics, sensor systems and actuators, educational robotics, robotic competitions, entertainment robotics, servis robotics, embedded systems.

Recommended literature:
Kortenkamp, Bonasso, Murphy, Artificial Intelligence and Mobile Robots, MIT Press, 1998
Dudek, Jenkin: Computational Principles of Mobile Robotics, Cambridge Univ. Press, 2000
Corrochano, Geometric Computing for Perception Action Systems, Springer, 2001
Arkin, Behavior-Based Robotics, MIT Press, 2000
Tomasi, Mathematical Methods for Robotics and Vision, Stanford University, 2000
Nehmzow, Scientific Methods in Mobile Robotics, Springer, 2006.
Additional papers upon need

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 25

A	B	C	D	E	FX
60,0	4,0	24,0	4,0	4,0	4,0

Lecturers: Mgr. Pavel Petrovič, PhD.

Last change: 24.10.2016

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKVa-183/18	Psycholinguistics

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

Number of credits: 5

Recommended semester: 2.

Educational level: 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: Mgr. Jana Bašnáková

Last change:

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKV-183/00	Psycholinguistics

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

Number of credits: 5

Recommended semester: 2.

Educational level: II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
- birth and history of psycholinguistics
- basic methods of psycholinguistics
- phonolóogy and morphology of language
- language syntax
- language semantisc and pragmatic processes
- theories of speech understanding
- theories of speech production

Recommended literature:
Cairns, H. S.: Psycholinguistics: An Introduction. Austin, TX: PRO-ED 1999.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 53

A	B	C	D	E	FX
33,96	20,75	11,32	13,21	9,43	11,32

Lecturers: Mgr. Jana Bašnáková

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

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: 654

A	B	C	D	E	FX
60,4	15,9	10,09	4,74	1,83	7,03

Lecturers: PhDr. Elena Klátiková

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

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: 399

A	B	C	D	E	FX
65,66	15,79	9,02	4,01	1,0	4,51

Lecturers: PhDr. Elena Klátiková

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

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: 196

A	B	C	D	E	FX
70,41	17,35	8,67	2,55	0,0	1,02

Lecturers: PhDr. Elena Klátiková

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

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: 138

A	B	C	D	E	FX
75,36	13,04	7,25	2,9	0,72	0,72

Lecturers: PhDr. Elena Klátiková

Last change: 02.06.2015

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKVa-122/18	Semester Project

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

Number of credits: 6

Recommended semester: 2.

Educational level: 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: RNDr. Barbora Cimrová, PhD., RNDr. Kristína Malinovská, PhD.

Last change:

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKV-122/15	Semester Project

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

Number of credits: 5

Recommended semester: 2.

Educational level: II.

Prerequisites:

Antirequisites: FMFI.KAI/2-IKV-122/00

Course requirements:
During the semester: 2 versions of project specification document, 4 presentations of the project progress (see syllabus).
Final: presentation of the project on the international student conference MEi:CogSci - evaluation of final poster and it's overall scientific outcome.
Approx. evaluation scale: A 90%, B 80%, C 70%, D 60%, E 50%.
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
Aim of this course is to gain experience and skills in the domain of scientific work. Students choose their topics of interest, create research goals and tasks arranged in a coherent work plan, according to which they work on the project and present the partial outcomes of their project during the semester. At the end of the term students present their results in form of a poster accompanied by an enhanced abstract on an international student conference of the MEi:CogSci consortium. Apart from independent research work experience students gain and practice transferable skills such as planning, evaluating their work progress, presenting ideas and results, scientific writing, and reviewing.

Class syllabus:
1. introduction, about the semester project, MEi:CogSci conference, assignment details, project topics
2. 2nd year students' presentation about the student mobility
3. project topics presentations
4. studied literature presentations
5. preliminary results presentations
6. poster presentations
continuously: workshops and consultations

Recommended literature:

Languages necessary to complete the course:
English

Notes:

Past grade distribution
Total number of evaluated students: 127

A	B	C	D	E	FX
54,33	21,26	12,6	2,36	2,36	7,09

Lecturers: RNDr. Kristína Malinovská, PhD., RNDr. Barbora Cimrová, PhD.

Last change: 19.02.2018

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAI/2-ERA-005/15	**Course title:** Special Topic of Interest Module I
Educational activities: **Type of activities:** **Number of hours:** **per week: per level/semester:** **Form of the course:** on-site learning	
Number of credits: 5	
Recommended semester: 3.	
Educational level: 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: 19

A	B	C	D	E	FX
47,37	26,32	15,79	5,26	0,0	5,26

Lecturers:
Last change: 02.06.2015
Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAI/2-ERA-006/15	**Course title:** Special Topic of Interest Module II
Educational activities: **Type of activities:** **Number of hours:** **per week: per level/semester:** **Form of the course:** on-site learning	
Number of credits: 10	
Recommended semester: 3.	
Educational level: 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: 27

A	B	C	D	E	FX
37,04	40,74	11,11	11,11	0,0	0,0

Lecturers:	
Last change: 02.06.2015	
Approved by: prof. Ing. Igor Farkaš, Dr.	

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/2-MXX-115/17	Sports in Natur (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: 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
100,0	0,0	0,0	0,0	0,0	0,0

Lecturers: Mgr. Branislav Nedbálek

Last change:

Approved by: prof. Ing. Igor Farkaš, Dr.

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KTV/2-MXX-116/18	**Course title:** Sports in Natur (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: 2.	
Educational level: 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: 9

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

Lecturers: Mgr. Branislav Nedbálek	
Last change:	
Approved by: prof. Ing. Igor Farkaš, Dr.	

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI+KDMFI/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: 1.

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: 108

A	B	C	D	E	FX
7,41	12,04	12,04	15,74	37,96	14,81

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

Last change: 22.09.2017

Approved by: prof. Ing. Igor Farkaš, Dr.