COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/AOS1/15	**Course name:** Administration of OS

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

Number of credits: 2

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

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:
To be able to install Linux based system, divide disks, to know how to install, configure and manage several network deamons.

Brief outline of the course:
1. Introduction to network services
2. SSH
3. Routing and NAT
4. Introduction to Firewall
5. Advanced firewall settings
6. DHCP server
7. Web server (apache, php, mysql)
8. Monitoring Server (SNMP, MRTG)
9. Samba Server
10. Mail server (smtp, imap, postfix)
11. Proxy server
12. Windows server
13. Windows Server II.
14. Introduction to Virtualization (Hyper-V OpenVZ)

Recommended literature:
1. Linux Documentation Project, 4 updated edition. Brno: Computer Press (2008).
2. Stanek, W.: Windows Server 2012 Inside Out. Microsoft Press (2013)
3. Shah, S. Soyinka, W. Administration Linux. Grade (2007)
4. Nemeth, E., et al.: Linux. Brno: Computer Press (2008)

Course language:

Notes:

Course assessment
Total number of assessed students: 70

A	B	C	D	E	FX
52.86	22.86	2.86	5.71	8.57	7.14

Provides: RNDr. Peter Gurský, PhD., RNDr. JUDr. Pavol Sokol, PhD.

Date of last modification: 17.09.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/AMCU/15	**Course name:** Aktivizujúce metódy výučby chémie

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

Number of credits: 5

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 9

A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0

Provides: doc. RNDr. Mária Ganajová, CSc., RNDr. Ivana Sotáková

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ ZTOX/04	**Course name:** Basic Toxicology

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

Number of credits: 5

Recommended semester/trimester of the course: 1.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:
Goal of the course is to provide the students with a knowledge of types of toxic substances and their metabolism, safe and handling of toxic substances.

Brief outline of the course:
Historical aspects, types of toxic substances, types of exposure, dose-response relationship. Disposition of toxic compounds (absorption, distribution, excretion of toxic compounds). Metabolism of toxic compounds. Drugs as toxic substances, food additives and contaminants, environmental pollutans. Statement of chemistry laboratory policy. Safe and handling of toxic substances.

Recommended literature:
G. F. Fuhrman: Allgemeine Toxikologie fuer Chemiker, Teubner Verlag, Stutgart 1984.
V. E. Forbes, T. L. Forbe: Ecotoxicology in Theory and Practice, Chapman&Hall, London 1994.
J. A. Timbrell: Introduction to Toxicology, Taylor&Francis, London 1994.

Course language:

Notes:

Course assessment
Total number of assessed students: 265

A	B	C	D	E	FX
21.89	28.68	23.02	16.98	8.3	1.13

Provides: prof. RNDr. Katarína Györyová, DrSc.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ BTC/03	**Course name:** Biotechnology

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

Number of credits: 5

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
test

Learning outcomes:
Students obtained the knowledge of basic biotechnological processes and their applications in agriculture, industry, food production and medicine.

Brief outline of the course:
Classification of biotechnology, disciplines and subjects which are involved with biotechnology. The fermentation processes, types of bioreactors, impellers, principles of microbial growth, media and substrates for fermentation processes. The bioremediation, production and application of biogas, in-vessel composting. Micro-organisms used to preparation amino acids, their fermentation preparation, isolation and possible uses. The methods of classical Plant Biotechnology. Ethanol fermentation, spirits, production of wine and beer. The biological filters, nutrient removal and the membrane bioreactors. Antibiotics.

Recommended literature:
E.M.T. El-Mansi et al. ,Fermentation microbiology ang biotechnology,second edition, 2007
Y.H. Hui, Food biochemistry & food processing,Blackwell Publishing 2006
J.E. Smith, Biotechnology, Cambridge university press 2009

Course language:

Notes:

Course assessment
Total number of assessed students: 85

A	B	C	D	E	FX
42.35	23.53	20.0	8.24	5.88	0.0

Provides: RNDr. Danica Sabolová, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ KKV1/15	**Course name:** Classical and quantum computations

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

Number of credits: 6

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

Course level: II.

Prerequisities:

Conditions for course completion:
Written work
Writen and oral examination

Learning outcomes:
To provide information on quantum computer and quantum computations. To compare classical and quantum models and methods.

Brief outline of the course:
The basics of classical theory of computation: Turing machines, Boolean circuits, parallel algorithms, probabilistic computation, NP-complete problems, and the idea of complexity of an algorithm. Introduction of general quantum formalism (pure states, density matrices, and superoperators), universal gate sets and approximation theorems. Grover's algorithm, Shor's factoring algorithm, and the Abelian hidden subgroup problem. Parallel quantum computation, a quantum analogue of NP-completeness, and quantum error-correcting codes.

Recommended literature:
1. BERMAN,G.P., DOOLEN,G.D., MAINIERI, R., TSIFRINOVIC, V.I. Introduction to Quantum Computers. World Scientific, 2003.
2. GRUSKA, J. Quantum Computing. McGraw-Hill, 1999.
3. JOHNSON, G. A Shortcut Through Time: The Path to the Quantum Computer, Knopf 2003.
4. KITAEV, A.Y., SHEN, A.H., VYALYI, M.N. Classical and Quantum Computation. American Mathematical Society, 2002.
5. NIELSEN, M.A., CHUANG, I.L. Quantum Computation and Quantum Information. Cambridge University Press, 2000.
6. HIRVENSALO, M., Quantum Computing, Springer 2004

Course language:

Notes:

Course assessment
Total number of assessed students: 80

A	B	C	D	E	FX
23.75	33.75	11.25	17.5	10.0	3.75

Provides: doc. RNDr. Gabriel Semanišin, PhD., RNDr. Zuzana Bednárová, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ MPPd/05	**Course name:** Continual pedagogic practise III

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

Number of credits: 2

Recommended semester/trimester of the course: 4.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:
The aim of this subject is to apply theoretical preparation from chemistry didactics by the creation of lesson plans for teaching

Brief outline of the course:
The practice runs 3 week and is realizes only in one school in Košice from both certificated subjects. Content of practise is obligate visitation at 4 lessons and unlearns minimal 15 lessons from each certificated subject. A part of practice is methodical and professional analysis unlearn lesson and active implication in out of class and school activities.

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 171

abs	n
100.0	0.0

Provides: doc. RNDr. Mária Ganajová, CSc., RNDr. Ivana Sotáková

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/MPPc/15	**Course name:** Continuous practice teaching I
Course type, scope and the method: **Course type:** Practice **Recommended course-load (hours):** **Per week: Per study period:** 4t **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course: 3.	
Course level: II.	
Prerequisities: ÚCHV/MPPb/15 or ÚCHV/MPPb/03	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 21

abs	n
100.0	0.0

Provides:
Date of last modification: 03.05.2015
Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/MPPc/15	**Course name:** Continuous practice teaching I

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: Per study period: 4t
Course method: present

Number of credits: 2

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities: ÚINF/MPPb/15

Conditions for course completion:
A certified statement of classroom visits and own taught lessons as proof of a practice within the range prescribed 6 hours classroom visits and 18 taught computer science lessons. Observation records and lesson preparations.

Learning outcomes:
The student under supervision of an experienced teacher trainer teaching practical skills for computer science teaching. Student is familiar with the life of the school, extra-curricular and other activities.

Brief outline of the course:
Observations of teacher trainer lessons, consultations of lesson preparations of students, teaching aids, teaching own lessons, methodological and scientific analysis of lessons, active participation in extracurricular and other activities of training school.

Recommended literature:
Current computer science textbooks for primary and secondary schools in Slovakia.

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 3

abs	n
100.0	0.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD., PaedDr. Ján Guniš, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ MPPd/15	**Course name:** Continuous practice teaching II

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: Per study period: 6t
Course method: present

Number of credits: 2

Recommended semester/trimester of the course: 4.

Course level: II.

Prerequisities: ÚINF/MPPc/15

Conditions for course completion:
A certified statement of classroom visits and own taught lessons as proof of a practice within the range prescribed 8 hours classroom visits and 30 taught computer science lessons. Observation records and lesson preparations.

Learning outcomes:
The student under supervision of an experienced teacher trainer teaching practical skills for computer science teaching. Student is familiar with the life of the school, extra-curricular and other activities.

Brief outline of the course:
Observations of teacher trainer lessons, consultations of lesson preparations of students, teaching aids, teaching own lessons, methodological and scientific analysis of lessons, active participation in extracurricular and other activities of training school.

Recommended literature:
Current computer science textbooks for primary and secondary schools in Slovakia.

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 0

abs	n
0.0	0.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD., PaedDr. Ján Guniš, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/MPPd/15	**Course name:** Continuous practice teaching II
Course type, scope and the method: **Course type:** Practice **Recommended course-load (hours):** **Per week: Per study period:** 6t **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course: 4.	
Course level: II.	
Prerequisities: ÚCHV/MPPc/15	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 0

abs	n
0.0	0.0

Provides:
Date of last modification: 03.05.2015
Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ KC/03	**Course name:** Cosmetic chemistry
Course type, scope and the method: **Course type:** Lecture / Practice **Recommended course-load (hours):** **Per week:** 2 / 1 **Per study period:** 28 / 14 **Course method:** present	
Number of credits: 4	
Recommended semester/trimester of the course: 3.	
Course level: II.	
Prerequisities:	
Conditions for course completion: Seminar report on the selected subjects of cosmetic chemistry and its oral presentation connected with discussion. Terminal examination by oral form.	
Learning outcomes: The basic chemical ingredients in cosmetic products, their isolation from natural sources. The construction of some interesting groups of the orgnaic structures and their application in cosmetic industry.	
Brief outline of the course: Skin and its components. The chemistry of lipids. Lipids, their classification (triacylglycerols, glycerophospholipids and sfingophoslipids), liposomes as transport systems. Fatty acids and alcohols, natural and synthetic waxes. Surfactants, their classification. Antioxidants. Dyes, their classification, organic and inorganic dyes, natural and synthetic. Biological active compounds (amino acids, peptides, proteins hydroxy acids, vitamins, polysaccharides) as the cosmetic ingredients. The chemistry of fragrances. Compounds derived from shikimic acid and mevalonic acid, their biosynthesis, Synthetic fragrances and their construction.	
Recommended literature: 1. S. V. Bhat, B. A. Nagasampagi, M. Sivakumar: Chemistry of Natural Products, Springer Narosa 2005, ISBN 81-7319-481-5. 2. G. Ohloff: Scent and Fragrances, Springer-Verlag Berlín Heidelberg 1994, ISBN 3-540-57108-6. 3. D. H. Pybus, CH. S. Sell: The chemistry of fragrances, Royal Society of Chemistry 1999, ISBN 0-8540-528-7. 4. J. McMurry: Organic chemistry, Brooks/Cole, a Thomson Learning Company 2004, Sixth Eddition, ISBN 0534389996.	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 86

A	B	C	D	E	FX
79.07	15.12	4.65	1.16	0.0	0.0

Provides: doc. RNDr. Miroslava Martinková, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ODPU/15	**Course name:** Defence of diploma thesis

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

Number of credits: 15

Recommended semester/trimester of the course:

Course level: II.

Prerequisities: ÚINF/DSU1b/15

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 4

A	B	C	D	E	FX
50.0	0.0	50.0	0.0	0.0	0.0

Provides:

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ TSM1a/15	**Course name:** Development and processing of multimedia

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

Number of credits: 2

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

Course level: II.

Prerequisities:

Conditions for course completion:
Assessment of preliminary assignments - static images, animations, sounds, videos.
Assessment of the final multimedia project for the selected topic of computer science.

Learning outcomes:
To acquire basic principles about multimedia and procedures for the creation and processing of multimedia (still images, animation, audio, video).

Brief outline of the course:
Principles of creation and processing of computer graphics, audio and video by the help of selected multimedia editors (LogoMotion, Pixlr, Go Animate, Diagramly, InkScape, Audacity, Anvil Studio, Magix Music Maker, CamStudio, Windows Movie Maker, FormatFactory).

Recommended literature:
1. LACHS, V. Making Multimedia in the Classroom. London : RoutledgeFalemer, 2000. ISBN 0415216842.
2. GÖBEL, S. et al. Technologies for Interactive Digital Storytelling and Entertainment (LNCS 4326). Darmstadt : Springer, 2006. ISBN 3540499342.
3. ADÁMEK, R. et al. Moderná didaktická technika v práci učiteľa. Elfa, s.r.o., Košice. 2010. ISBN 978-80-8086-135-3.
4. CHALUPA, R. Fotografie, hudba a video ve Windows XP. 2005. ISBN 8072269313.

Course language:

Notes:

Course assessment
Total number of assessed students: 5

A	B	C	D	E	FX
40.0	20.0	20.0	20.0	0.0	0.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD., PaedDr. Ján Guniš, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ TSM1b/15	**Course name:** Development and processing of multimedia

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

Number of credits: 2

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

Course level: II.

Prerequisities:

Conditions for course completion:
Evaluation of particular assignments.
100% / 0%
Project containing programmed multimedia.

Learning outcomes:
Program design and multimedia applications.
Understand the basic principles and procedures for multimedia programming.

Brief outline of the course:
Principles of Programming bitmap graphics, bitmap animation, vector graphics, vector animation, audio and video.

Recommended literature:
DUNN, J. R. Digitální video. 2003. ISBN 8025100383.
Audacity: Programování v Conquista. [online] Dostupné na internete: <http://audacity.sourceforge.net/help/nyquist2>.
ARMSTRONG, J., DEHAAN, J. Macromedia Flash 8 - výukový průvodce. 2006. ISBN 8025103358.

Course language:

Notes:

Course assessment
Total number of assessed students: 3

A	B	C	D	E	FX
0.0	100.0	0.0	0.0	0.0	0.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD., PaedDr. Ján Guniš, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ DIN1a/15	**Course name:** Didactics of informatics

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

Number of credits: 3

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
Computer science teaching plan at secondary grammar school. Conceptual map and cognitive objectives of chosen topic. Solving of algorithmic problem with the description of used problem solving strategies. Collection of tasks with increasing complexity. Video recorded from microteaching of chosen topic using activating methods. Applet to the teaching of algorithms and programming. Worksheet to programming chosen game in Scratch. Activity in discussion forums.

Learning outcomes:
1. To acquire an overview of the objectives, content, modern methods of teaching computer science.
2. To create conceptual map, cognitive objectives and tasks collection with increasing complexity for chosen topic.
3. To solve selected algorithmic problems using various problem solving strategies.
4. To master the methodology of teaching of algorithms and programming using selected algorithmic simulations, games, programming environments.

Brief outline of the course:
The objectives and content of computer science education. Solving algorithmic problems exploiting algorithmic games and children's programming environment. Teaching task, its forms and parameters. Creation of tasks collection with increasing complexity. Activating methods of teaching computer science. Methodology of teaching selected topics of algorithms and programming (recursion, sorting, searching, coding, encryption, compression, checksums). Methodology of teaching programming in Scratch.

Recommended literature:
1. HAZZAN, Orit - LAPIDOT, Tami - RAGONIS, Noa (2011). Guide to teaching computer science : an activity-based approach. London ; New York : Springer, ©2011. ISBN 978-0-85729-443-2.
2. BELL, Tim - MORGAN, Jack (2014). Computer Science Field Guide. University of Canterbury, New Zealand. http://www.cosc.canterbury.ac.nz/csfieldguide/index.html
3. BELL, Tim - WITTEN, Ian H. - FELLOWS, Mike (2005). Computer Science Unplugged: An enrichment and extension programme for primary-aged children. Computer Science Unplugged. 2005. http://ir.canterbury.ac.nz/bitstream/10092/247/1/12584508_Main.pdf

4. KALAŠ, Ivan et al. (2001). Informatika pre stredné školy, Bratislava : SPN, 2001. ISBN 80-10-00157-0.
5. TOMCSÁNYIOVÁ, Monika et al. (2009). Ďalšie vzdelávanie učiteľov základných škôl a stredných škôl v predmete informatika - Riešenie problémov a základy programovania 1. 2009. ISBN 978-80-8118-023-1.
6. GUNIŠ, Ján - SUDOLSKÁ, Miloslava - ŠNAJDER, Ľubomír (2009). Ďalšie vzdelávanie učiteľov základných škôl a stredných škôl v predmete informatika - Aktivizujúce metódy vo vyučbe školskej informatiky. 2009. ISBN 978-80-89225-96-5.

Course language:

Notes:

Course assessment
Total number of assessed students: 62

A	B	C	D	E	FX
25.81	14.52	24.19	20.97	12.9	1.61

Provides: doc. RNDr. Ľubomír Šnajder, PhD., PaedDr. Ján Guniš, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ DIN1b/15	**Course name:** Didactics of informatics

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

Number of credits: 5

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities:

Conditions for course completion:
The preliminary assessment shall be based on the results of independent work of student on computers for a number of sub-assignments (course and evaluation of own inquiry activity, didactical quiz, interactive modelling applet, inquiry-based worksheet with tasks and questions).
In final exam students will demonstrate an overview of the theoretical knowledge in the field of computer science education in written form and they will present and defend their own educational project for the chosen topic of the computer science (containing objectives, system of tasks with increasing complexity, tasks solutions and methodological commentaries and didactical quiz).

Learning outcomes:
1. For the chosen topic of school informatics create didactic quiz, inquiry-based worksheet with tasks and questions, implement and evaluate own inquiry activity.
2. To create an interactive model for the chosen natural phenomenon or computer science concept.
3. To create a lesson preparation using modern teaching methods and aids, to implement it in practice and evaluate.

Brief outline of the course:
Teaching paradigms. Inquiry based computer science education. Process of creating concepts in computer science. Assessment of learning objectives of pupils, didactical quizes. Programming teaching (paradigms, environments, data types, commands, variables). Specifics of computer arithmetics. Mathematical modelling and simulation. Methodology of teaching selected topics of computer science (multimedia, internet). Computer science competitions.

Recommended literature:
1. HAZZAN, Orit - LAPIDOT, Tami - RAGONIS, Noa (2011). Guide to teaching computer science : an activity-based approach. London ; New York : Springer, ©2011. ISBN 978-0-85729-443-2.
2. BELL, Tim - MORGAN, Jack (2014) Computer Science Field Guide. University of Canterbury, New Zealand. http://www.cosc.canterbury.ac.nz/csfieldguide/index.html
3. SALANCI, Ľubomír - TOMCSÁNYIOVÁ, Monika - BLAHO, Andrej (2010). Ďalšie vzdelávanie učiteľov základných škôl a stredných škôl v predmete informatika : Didaktika programovania 2. Bratislava : Štátny pedagogický ústav, 2010. 36 s. ISBN 978-80-8118-053-8.

4. GUNIŠ, Ján - ŠNAJDER, Ľubomír (2009). Ďalšie vzdelávanie učiteľov základných škôl a stredných škôl v predmete informatika : Didaktika predmetu Informatika 2. Bratislava : Štátny pedagogický ústav, 2009. 45 s. ISBN 978-80-8118-021-7.

Course language:

Notes:

Course assessment
Total number of assessed students: 139

A	B	C	D	E	FX
17.27	31.65	25.18	17.27	7.91	0.72

Provides: doc. RNDr. Ľubomír Šnajder, PhD., PaedDr. Ján Guniš, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/DCH1/15	**Course name:** Didaktika chémie I

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

Number of credits: 4

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities: ÚCHV/SPC1a/03

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 17

A	B	C	D	E	FX
70.59	23.53	5.88	0.0	0.0	0.0

Provides: doc. RNDr. Mária Ganajová, CSc., RNDr. Ivana Sotáková

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/DCH2/15	**Course name:** Didaktika chémie II

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

Number of credits: 4

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities: ÚCHV/DCH1/15

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 21

A	B	C	D	E	FX
71.43	14.29	9.52	4.76	0.0	0.0

Provides: doc. RNDr. Mária Ganajová, CSc., RNDr. Ivana Sotáková

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ DTCU/15	**Course name:** Digitálne technológie vo výučbe chémie

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

Number of credits: 5

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 10

A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0

Provides: doc. RNDr. Mária Ganajová, CSc., RNDr. Milena Kristofová, RNDr. Ivana Sotáková

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ DPP1/14	**Course name:** Diploma Project I
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 1	
Recommended semester/trimester of the course: 1.	
Course level: II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 9

abs	n
100.0	0.0

Provides:
Date of last modification:
Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ DPP1/14	**Course name:** Diploma Project I
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 1	
Recommended semester/trimester of the course: 1.	
Course level: II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 22

abs	n
100.0	0.0

Provides: doc. RNDr. Ivan Potočňák, PhD.
Date of last modification: 03.05.2015
Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ DPP2/14	**Course name:** Diploma Project II
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course: 2.	
Course level: II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 9	
abs	n
100.0	0.0
Provides:	
Date of last modification:	
Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ DPP2/14	**Course name:** Diploma Project II
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course: 2.	
Course level: II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 22	

abs	n
100.0	0.0

Provides: doc. RNDr. Ivan Potočňák, PhD.
Date of last modification: 03.05.2015
Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ DPP3/14	**Course name:** Diploma Project III
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course: 3.	
Course level: II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 26	

abs	n
100.0	0.0

Provides: doc. RNDr. Taťána Gondová, CSc.
Date of last modification: 03.05.2015
Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ DPP3/14	**Course name:** Diploma Project III
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course: 3.	
Course level: II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 4	

abs	n
100.0	0.0

Provides:
Date of last modification:
Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ DPOU/14	**Course name:** Diploma Thesis and its Defence

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

Number of credits: 15

Recommended semester/trimester of the course:

Course level: II.

Prerequisities: ÚCHV/DPP3/14

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 27

A	B	C	D	E	FX
74.07	22.22	3.7	0.0	0.0	0.0

Provides:

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ DSU1a/10	**Course name:** Diplomový seminár z chémie pre XCH
Course type, scope and the method: **Course type:** Practice **Recommended course-load (hours):** **Per week:** 2 **Per study period:** 28 **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course: 2.	
Course level: II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 5

abs	n
100.0	0.0

Provides: doc. RNDr. Mária Ganajová, CSc.
Date of last modification: 03.05.2015
Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ DSU1b/10	**Course name:** Diplomový seminár z chémie pre XCH
Course type, scope and the method: **Course type:** Practice **Recommended course-load (hours):** **Per week:** 2 **Per study period:** 28 **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course: 3.	
Course level: II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 3	
abs	n
100.0	0.0
Provides: doc. RNDr. Mária Ganajová, CSc.	
Date of last modification: 03.05.2015	
Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/FO1/15	**Course name:** Formal languages and automata

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

Number of credits: 5

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

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:
To provide theoretical background for studying computer science in general, by giving the necessary knowledge in theory of automata.

Brief outline of the course:
Greibach normal structure of contextfree gramars.Deterministic pushdown automata. Context-sensitive grammars and linearly-bounded Turing machines. Deterministic linearly-bounded Turing machines. Space bounded machines. Phrase-structure grammars and Turing machines. Post correspondence problem. Undecidable problems in the theory of formal languages.

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 8

A	B	C	D	E	FX
25.0	37.5	25.0	12.5	0.0	0.0

Provides: prof. RNDr. Viliam Geffert, DrSc., Mgr. Alexander Szabari, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ ZCVU/04	**Course name:** Chemical Engineering

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

Number of credits: 5

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

Course level: II., III.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:
General and Inorganic Engineering; Mineral raw materials; Raw materials processing, transport and holding; Chemical reactors; Chemical metallurgy – Fe, Al, Cu working; Inorganic acids manufacture (H2SO4, HNO3, HCl, HF, H3PO4); Industrial electrochemistry; Industrial fertilizers; Silicate industry – cement manufacture, ceramics; Petrochemistry

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 5

A	B	C	D	E	FX	N	P
20.0	60.0	20.0	0.0	0.0	0.0	0.0	0.0

Provides: doc. RNDr. Zuzana Vargová, Ph.D.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/CHE2/03	**Course name:** Chemical Excursion

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

Number of credits: 4

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities: ÚCHV/ACHU/03 or ÚCHV/ACH2/03

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 76

A	B	C	D	E	FX
93.42	6.58	0.0	0.0	0.0	0.0

Provides: doc. RNDr. Zuzana Vargová, Ph.D.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/MSSU1/14	**Course name:** Chemistry and Didactics of Chemistry I

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

Number of credits: 1

Recommended semester/trimester of the course:

Course level: II.

Prerequisities: ÚCHV/VKAU/04 and ÚCHV/DCH2/15

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 35

A	B	C	D	E	FX
42.86	40.0	14.29	2.86	0.0	0.0

Provides:

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/MSSU2/14	**Course name:** Chemistry and Didactics of Chemistry II

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

Number of credits: 1

Recommended semester/trimester of the course:

Course level: II.

Prerequisities: ÚCHV/VKOCH/03 and ÚCHV/DCH2/15

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 9

A	B	C	D	E	FX
77.78	11.11	11.11	0.0	0.0	0.0

Provides:

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ MSSUI/15	**Course name:** Informatika a didaktika informatiky
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 1	
Recommended semester/trimester of the course:	
Course level: II.	
Prerequisities: ÚINF/DIN1b/15 and (ÚINF/UGR1/15 or ÚINF/TIK1/15) and (ÚINF/KKV1/15 or ÚINF/UNS1/15 or ÚINF/KRS/15 or ÚINF/FO1/15)	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment

Total number of assessed students: 4

A	B	C	D	E	FX
25.0	25.0	25.0	25.0	0.0	0.0

Provides:
Date of last modification: 03.05.2015
Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ TIK1/15	**Course name:** Information theory, encoding

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

Number of credits: 4

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

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 23

A	B	C	D	E	FX
60.87	8.7	13.04	4.35	0.0	13.04

Provides: doc. RNDr. Stanislav Krajči, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ VIV1/15	**Course name:** Internet in education

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

Number of credits: 4

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
Assessment of preliminary assignments - design of a teleproject, design of an e-learning course lesson, design and implementation of a video-conference activity.
In final exam students will demonstrate an overview of using the Internet in education in written form and they will present and defend their final work focused on using the Internet in education (design and implementation of an e-learning course, teleproject, webquest, on-line competition, lesson exploiting several Internet sources and tools).

Learning outcomes:
1. To acquire an overview of the possibilities of using the Internet in education.
2. To enhance skills for searching, acquiring, exchanging and presenting information via the Internet.
3. To design, develop and verify an Internet activity (e-learning course, teleproject, WebQuest, online competition, video lecture).

Brief outline of the course:
Overview of using the Internet in education. Educational Web sites and search engines. Design, implementation and evaluation of e-learning courses. Educational teleprojects, online competitions, teleexperiments. Communicating via the Internet - forums, blogs, videoconferences, social networking. Social, medical, ethical and legal aspects of using the Internet.

Recommended literature:
1. CONRAD, Rita-Marie - DONALDSON, J. Ana (2011). Engaging the Online Learner: Activities and Resources for Creative Instruction. Jossey-Bass; Updated Edition edition 2011. ISBN 978-1118018194.
2. FREEDMAN, Terry (2010) The Amazing Web 2.0 Projects Book. http://www.terry-freedman.org.uk/web2_2010/Amazing%20Web%202%20Projects%202%20online%20version.pdf
3. MANN, B. L. Selected Styles in Web-based Educational Research. Information Science Pub, 2005. ISBN 15-9140-732-X.
4. BARANOVIČ, R. et al. Internet pre stredné školy - Učebnica Internetu. Praha : Computer Press, 2003. 275 s. ISBN 80-251-0088-X.

Course language:

Notes:

Course assessment
Total number of assessed students: 148

A	B	C	D	E	FX
15.54	32.43	21.62	14.86	12.16	3.38

Provides: doc. RNDr. Ľubomír Šnajder, PhD., PaedDr. Ján Guniš, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/UGR1/15	**Course name:** Introduction to computer graphics

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

Number of credits: 5

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

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:
To provide the students with knowledge of graphics algorithms and basic principles of computer graphics.

Brief outline of the course:
Graphics hardware, input and output devices. Color models, palettes. Raster graphics algorithms for drawing 2D primitives. Filling and clipping. Curve modeling, interpolations and approximations, spline forms, Bézier curves, B-splines, surfaces. Homogenous coordinates, affine transformations, perspective and parallel projections. Visible-surface determination, illumination and shading. Rendering techniques, photorealism, textures, ray tracing, radiosity. Object representations, computer animation, virtual reality.

Recommended literature:
FOLEY, J. D., van DAM, A., FEINER, S., HUGHES, J.: Computer Graphics: Principles and Practice, Addison-Wesley, 1991
MORTENSON, M.E.: Geometric modeling, 2.ed., Willey, 1997

Course language:

Notes:

Course assessment
Total number of assessed students: 238

A	B	C	D	E	FX
13.03	8.4	13.03	23.95	31.93	9.66

Provides: doc. RNDr. Gabriel Semanišin, PhD., RNDr. Rastislav Krivoš-Belluš, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ UECH/03	**Course name:** Introduction to Environmental Chemistry

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

Number of credits: 5

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

Course level: I., II.

Prerequisities:

Conditions for course completion:
Oral examination

Learning outcomes:
Introduction to topics in environmental chemistry and basic procedures applied for environmental protection.

Brief outline of the course:
Introduction to Environmental Chemistry
Chemical aspects of pollution and environmental problems. Composition and behavior of the atmosphere. Energy balance of the Earth and climate changes. Principles of photochemistry, photoprocesses in the atmosphere. Petroleum, hydrocarbons and coal (characteristics, sources and environmental pollution). Soaps, polymers and synthetic surfactants. Haloorganics and pesticides. Environmental chemistry of some important elements (C, N, S, P, halogens, biologically important metals ...). Environmental chemistry in aqueous media. Aqueous systems, parameters, cycles and their protection. The Earth´s crust (rocks, minerals, soils). Natural and artificial radioactivity, utilization. Energy and energy sources (fossil fuels, nuclear, geothermal, solar energy, wind and water energy). Solid waste disposal and recycling.

Recommended literature:
1. Gary W. van Loon, Stephen J. Duffy : Environmental Chemistry - A Global Perspective, Oxford University Press, Oxford 2003
2. R.A. Bailey, H.M. Clark, J.P. Ferris, S. Krause, R.L. Strong : Chemistry of the Environment, Academic Press, San Diego 2002
3. G. Schwedt: The Essential Guide to Environmental Chemistry, Wiley and Sons, London 2001
4. R.N. Reeve, J.D. Barnes: General Environmental Chemistry, Wiley, London 1994
5. G. Burton, J. Holman, G. Pilling, D. Waddington: Chemical Storylines, Heinemann, Oxford, London 1994
6. www

Course language:

Notes:

Course assessment
Total number of assessed students: 195

A	B	C	D	E	FX
47.69	19.49	16.92	9.23	6.67	0.0

Provides: RNDr. Andrea Straková Fedorková, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ FUMCH1/03	**Course name:** Introduction to Material Chemistry

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

Number of credits: 5

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

Course level: I., II.

Prerequisities:

Conditions for course completion:
Seminar work.
Examination.

Learning outcomes:
To present the different types of functional materials, their atomic structure and mechanical properties.

Brief outline of the course:
Historical perspectives. Materials and human being. Participation of natural science in material engineering. Material revolutions. Classification of materials. Atomic structure and interatomic bonding. Amorphous and crystalline materials. Mechanics of materials. Imperfections in solids. Crystal lattice defects. Point defects. Line defects. Dislocations. Diffusion. Diffusion mechanisms. Deformations and failures, re-crystallization. Deformations. Plastic deformations. Solid solutions. Intermediary phases. Phases in ceramic systems. Phase transformations. Crystallization of metals. Phase identification methods. Stress and strain. Structure of metallic and ceramic materials. Alloys. Steel. Light metals. Metallic glasses. Gold. Inorganic non-metallic materials. Ceramic construction materials. Ceramic tools. Bio-ceramics. Ceramics in cosmos. High-temperature superconductors. Glass. Building binders. Polymers. Essence of polymers. Thermoplastics. Reactoplastics. Polymer structure. Mechanical properties of polymers. Natural materials. Wood. Bones. Teeth. Conchs and shells. Tectrices.

Recommended literature:
W. D. Callister, Jr.: Fundamentals of Materials Science and Engineering, John Wiley & Sons, 2001.
Brian S. Mitchell: An Introduction to Materials Engineering and Science: For Chemical and Materials Engineers, John Wiley & Sons,
2004.

Course language:

Notes:

Course assessment
Total number of assessed students: 52

A	B	C	D	E	FX
86.54	11.54	0.0	0.0	0.0	1.92

Provides: doc. RNDr. Renáta Oriňaková, DrSc.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ UNS1/15	**Course name:** Introduction to neural networks

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

Number of credits: 5

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

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:
To understand and to know applications of basic paradigms of neural networks. To learn working with software for neural network models.

Brief outline of the course:
Basic models of computational units - neurons (linear threshold gates, polynomial threshold gates, perceptrons), their computational capability, algorithms of adaptations. Feed-forward neural networks, back propagation algorithm. Hopfield neural networks. ART neural networks. Using neural networks to solving of problems. Genetic and evolution algorithms.

Recommended literature:
J. Hertz, A.Krogh, R.G. Palmer: Introduction to the theory of neural computation, Addison Wesley, 1991
HASSOUN, M. H.: Fundamentals of artificial neural networks, The MIT Press, 1995

Course language:

Notes:

Course assessment
Total number of assessed students: 346

A	B	C	D	E	FX
8.09	15.9	23.99	21.1	26.3	4.62

Provides: doc. RNDr. Gabriela Andrejková, CSc.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/LOP1/15	**Course name:** Logic programming

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

Number of credits: 5

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

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:
To learn bases of declarative programming (as complementary method to procedural programming) and basic methods of implementations of logic programming languages.

Brief outline of the course:
Facts and rules in Prolog. Unification of terms (Robinson's unification algorithm). Recursion and backtrack in Prolog. Computational step and computational tree. Classification of terms. Lists. Functors and operators in composed terms. Predicates for input and output. Dynamic database. Cycles (repeat-fail, for). Predicates related to backtrack. Cut. Predicates evaluating of arithmetic expressions.

Recommended literature:
Bratko, I.: Prolog – programming for artificial intelligence, third edition. Addison-Wesley, 2001
Nilsson U., Maluszynski J.: Logic, Programming and Prolog, John Wiley & Sons Ltd. 1995
Nienhuys-Cheng Sh.H., Wolf R.: Foundations of Inductive Logic Programming, Springer-Verlag, 1997

Course language:

Notes:

Course assessment
Total number of assessed students: 219

A	B	C	D	E	FX
19.63	11.42	15.07	24.2	27.4	2.28

Provides: doc. RNDr. Stanislav Krajči, PhD., RNDr. Ondrej Krídlo, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/MPPd/05	**Course name:** Pedagogical practice

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

Number of credits: 2

Recommended semester/trimester of the course: 4.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:
Students carry on their teaching practice MPPd in primary and secondary schools according distribution on the other type of school as continuous teaching practice ÚINF/MPPb and ÚINF/MPPd. During this 3 weeks lasting teaching practice students undergo 4 hours classroom visits and 15 hours of own teaching lessons in the frame of lessons of a teacher trainer. Students keep a visitation records and create written preparation for each lesson that they consult with a teacher trainer. Students participate in meetings of subject commission, help the teacher trainer in cabinet, in pedagogical supervision and complete tasks under the rules of procedure of the school.

Recommended literature:
KONTÍROVÁ, S. a kol. Pedagogická prax študentov akademických predmetov (elektronické skriptum), 2. prepracované a doplnené vydanie, 978-80-7097-904-4. Dostupné na Internete: http://www.upjs.sk/public/media/3839/skripta_aktualizacia.pdf
BAJTOŠ, J. Teória a prax didaktiky. Žilina : EDIS - vydavateľstvo ŽU, 2003. ISBN 80-8070-130-X.
KALHOUS, Z. - OBST, O. Školní didaktika. Praha : Nakladatelství Portál, 2002. ISBN 80-7178-253-X.
KYRIACOU, Ch. Klíčové dovednosti učitele – cesty k lepšímu vyučování. Praha : Nakladatelství Portál, 2004. ISBN 80-7178-965-8.
PETTY, G. Moderní vyučování, Portál, Praha, 2004

Course language:

Notes:

Course assessment
Total number of assessed students: 76

abs	n
100.0	0.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD., PaedDr. Ján Guniš, PhD.
Date of last modification: 03.05.2015
Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ JAC1/15	**Course name:** Programming language C

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

Number of credits: 2

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

Course level: I., II.

Prerequisities:

Conditions for course completion:
Practics attendance and activity. Home assigment
Final project.

Learning outcomes:
Become skilled in language C and get knowledge of the theoretical concepts that are used in the development in low-level software.

Brief outline of the course:
1. Installing and setting up the development environment. Simple program in C, compiling and running.
2. Loops, conditions. Introduction to arrays. Numeric functions from numeric library. Compiling with `gcc` and setting up the warnings and hints.
3. Functions. Statically allocated arrays. Array gotchas in C. Makefiles for complex projects.
4. Basic I/O functions. Functions with array parameters and specifics.
5. Dynamic memory allocation as a mechanism for dynamic arrays. Strings as a special case of arrays. Strings and file I/O.
6. String manipulation principles and functions from standard library.
7. Working with binary files.
8. Custom data types. Structs.
9. Dynamic data structures. Linked lists. Stacks and operations with these structs.
10. Additional operations with dynamic data structures. Parameter passing with values and name.
11. Useful tricks and hints: passing parameters from operating system, exit codes. Multidimensional arrays.
12. Function pointers. Generic pointers. Unions.

Recommended literature:
1. A. D. Marshall: Programming in C: UNIX System Calls and Subroutines using C. [online] <http://www.cs.cf.ac.uk/Dave/C/CE.html>
2. J. Maasen: C for Java Programmers. [online] <http://www.cs.vu.nl/~jason/college/dictaat.pdf>
3. Bruce Eckel: Thinking in C. [online] <http://mindview.net/CDs/ThinkingInC>

Course language:

Notes:

Course assessment
Total number of assessed students: 115

A	B	C	D	E	FX
52.17	24.35	7.83	2.61	9.57	3.48

Provides: RNDr. Zuzana Bednárová, PhD.

Date of last modification: 07.09.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ PDSI1/15	**Course name:** Pro-seminar to diploma thesis in informatics

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

Number of credits: 2

Recommended semester/trimester of the course: 1.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:
To inform students about areas of informatics they are suitable to work in diploma theses. In the end of semester students have to prepared themes of diploma theses, goals and recommended study literature.

Brief outline of the course:
The seminar is oriented to problems prospective to preparations of Diploma theses.

Recommended literature:
MEŠKO, D., KATUŠČÁK, D. Akademická príručka. 1. vyd. Vydavateľstvo Osveta : Martin, 2004. 316 s. ISBN 80-8063-150-6
ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure.
ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents.
Eco, U.: Jak napsat diplomovou práci, z taliančiny Come si fa una tesi di laures, Milano, 1977, Olomouc, Votobiax.
Odborná a vedecká literatúra týkajúca sa diplomovej práce podľa odporúčania vedúceho diplomovej práce.

Course language:

Notes:

Course assessment
Total number of assessed students: 398

abs	n
99.75	0.25

Provides: RNDr. Peter Gurský, PhD., doc. RNDr. Ľubomír Šnajder, PhD., RNDr. František Galčík, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ PPU1a/15	**Course name:** Running practice
Course type, scope and the method: **Course type:** Practice **Recommended course-load (hours):** **Per week:** 2 **Per study period:** 28 **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course: 2.	
Course level: II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 127

abs	n
99.21	0.79

Provides:
Date of last modification: 03.05.2015
Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ VKACH/03	**Course name:** Selected Topics in Analytical Chemistry

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

Number of credits: 5

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:
Classical methods of analytical chemistry - volumetric analysis, gravimetry. Review of analytical instrumental methods. New analytical techniques for characterization and identifications of analytes.

Recommended literature:
Skoog D.A.: Principles of Instrumental Analysis. Saunders Col. Publishing, New York 1985.
D.Harvey: Modern Analytical Chemistry. McGraw Hill, Boston, 2000.

Course language:

Notes:

Course assessment
Total number of assessed students: 3

A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0

Provides: doc. RNDr. Taťána Gondová, CSc.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/VKAU/04	**Course name:** Selected Topics in Inorganic Chemistry

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

Number of credits: 5

Recommended semester/trimester of the course:

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:
Greenwood, N.N., Earnshaw, A.: Chemistry of the elements I and II, Pergamon Press N.Y., 1993.
C. N. R. Rao, A. Muller, A. K. Cheetham: The Chemistry of Nanomaterials (Vol. 1,2), Wiley-VCH,2006.
Atkins O., Overton T., Rourke J., Weller M., Armstrong F.: Inorganic Chemistry, University Press, Oxford, 2006.

Course language:

Notes:

Course assessment
Total number of assessed students: 16

A	B	C	D	E	FX
18.75	12.5	43.75	12.5	12.5	0.0

Provides: doc. RNDr. Vladimír Zeleňák, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ VKOCH/03	**Course name:** Selected topics in organic chemistry

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

Number of credits: 5

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 79

A	B	C	D	E	FX
35.44	20.25	20.25	16.46	7.59	0.0

Provides: doc. RNDr. Ján Imrich, CSc.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ DSU1a/15	**Course name:** Seminar to diploma theses in informatics XI
Course type, scope and the method: **Course type:** Practice **Recommended course-load (hours):** **Per week:** 2 **Per study period:** 28 **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course: 2.	
Course level: II.	
Prerequisities:	
Conditions for course completion: Elaboration and presentation of papers on selected areas of computer science education. Present the interim results of the diploma thesis.	
Learning outcomes: Get an overview of the results of educational research in the field of computer science education. To learn currently work on the diploma thesis, to present partial results of the pedagogical research work on it.	
Brief outline of the course: Educational research in the field of computer science education. Study of educational literature (conference proceedings, journals, studies) focusing on selected issues of computer science education. Presentations of interim results of students' diploma theses.	
Recommended literature: 1. KATUŠČÁK, D. Ako písať vysokoškolské a kvalifikačné práce: ako písať seminárne práce a ročníkové práce, práce študentskej vedeckej a odbornej činnosti, diplomové, záverečné a atestačné práce a dizertácie. 3. vyd. Nitra : Enigma, 2004. 162 s. ISBN 80-89132-10-3. 2. ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure. 3. ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents. 4. ECO, U. Jak napsat diplomovou práci. Olomouc : Votobia, 1997. 278 s. ISBN 80-7098-173-7. 5. Digital libraries (ACM Digital Library, IEEExplore, DOAJ) 6. Scientific literature relevant to diploma thesis according of recommendation of supervisor.	
Course language: Slovak	
Notes:	

Course assessment
Total number of assessed students: 5

abs	n
100.0	0.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ DSU1b/15	**Course name:** Seminar to diploma theses in informatics XI

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

Number of credits: 2

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities: ÚINF/DSU1a/15

Conditions for course completion:

Learning outcomes:
Get an experience with design, realization and evaluation of own educational research in the field of computer science education. To learn currently work on the diploma thesis, to present partial results of the pedagogical research work on it.

Brief outline of the course:
Educational research in the field of computer science education. Study of educational literature (conference proceedings, journals, studies) focusing on selected issues of computer science education. Design, realization and evaluation of own educational research in the field of computer science education. Presentations of interim results of students' diploma theses.

Recommended literature:
1. HENDL, Jan (2005). Kvalitativní výzkum - základní metody a aplikace. Praha : Portál, 2005. ISBN 80-7367-040-2.
2. ŠVAŘÍČEK, Roman - ŠEĎOVÁ, Klára et al. (2007). Kvalitativní výzkum v pedagogických vědách. Praha : Portál, 2007. ISBN 978-80-7367-313-0.
3. GAVORA, Peter et al. (2010). Elektronická učebnica pedagogického výskumu. [online]. Bratislava : Univerzita Komenského, 2010. Dostupné na: http://www.e-metodologia.fedu.uniba.sk/ ISBN 978–80–223–2951–4.
4. BELL, Tim - MORGAN, Jack (2014). Computer Science Field Guide. University of Canterbury, New Zealand. Dostupné na: http://www.cosc.canterbury.ac.nz/csfieldguide/index.html
5. Digital libraries (ACM Digital Library, IEEExplore, DOAJ)
6. Scientific literature relevant to diploma thesis according of recommendation of supervisor.

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 24

abs	n
100.0	0.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/MPPb/15	**Course name:** Scheduled practice teaching

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

Number of credits: 1

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities: KPE/MPPa/15 and KPE/PDU/15 and (KPPaPZ/PaSPP/09 or KPPaPZ/PPgU/15)

Conditions for course completion:
During the practice students observe 11 computer science lessons and leads one own computer science hour under the guidance of a teacher trainer. Confirmation of classroom visits. Written assessment from the teacher trainer.

Learning outcomes:
Students acquire knowledge by observing the practical application of teaching skills for teaching the subject of computer science and getting to know the organization of school work. Introduction into practical implementation of computer science lesson.

Brief outline of the course:
Students observe the process of teaching computer science at primary and secondary school and analysed it with teacher trainer. Practice takes place continuously during the course of the semester. Practice is scheduled once a week at the time of first to third lesson in schools.
The first two hours observation/teaching, the third hour analysing process under the guidance of a teacher trainer.

Recommended literature:
Current computer science textbooks for primary and secondary schools in Slovakia.

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 62

abs	n
100.0	0.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD., PaedDr. Ján Guniš, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ MPPb/15	**Course name:** Scheduled practice teaching
Course type, scope and the method: **Course type:** Practice **Recommended course-load (hours):** **Per week: Per study period:** 36s **Course method:** present	
Number of credits: 1	
Recommended semester/trimester of the course: 2.	
Course level: II.	
Prerequisities: KPE/MPPa/15 and KPE/PDU/15 and (KPPaPZ/PaSPP/09 or KPPaPZ/PPgU/15)	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 175

abs	n
100.0	0.0

Provides: RNDr. Ivana Sotáková
Date of last modification: 03.05.2015
Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ SPC1a/03	**Course name:** Special practising the school experiments I

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

Number of credits: 5

Recommended semester/trimester of the course: 1.

Course level: II.

Prerequisities:

Conditions for course completion:
Continuous checking of theoretical preparation, development of report and presentation.
Semestral test

Learning outcomes:
The aim of this subject is learn of basic experimental skillfulness in techniques in school experiment with accent on safety and health protections of students at scholar experimental work.

Brief outline of the course:
Selection and arrangement of chemical experiments as the demonstrative experiments, or pupils ´ experiments to themes basic laws of chemistry, determination of constant physicochemical, factors influence speed of chemical reaction, experiments from electrochemistry, creating gases; preparation works characters of quantitative, interesting experiments of everyday life.

Recommended literature:
1. Ganajová, M., Dzurillová, M. 2005: Školské pokusy z chémie I. UPJŠ v Košiciach, Prírodovedecká fakulta, 140 s. ISBN 80-7097-617-9
2. Ganajová, M. 2005: Chemické experimenty s vybranými produktami z obchodu. UPJŠ v Košiciach, Prírodovedecká fakulta, 110 s. ISBN 80-7097-611-X
3. Tomeček,O.: Školská experimentálna semimikrosúprava. Učebné pomôcky Banská Bystrica 1980
4. The primary and secondary textbook of chemistry
5. http://kekule.science.upjs.sk – (ŠIS)

Course language:

Notes:

Course assessment
Total number of assessed students: 181

A	B	C	D	E	FX
61.88	29.83	7.18	1.1	0.0	0.0

Provides: doc. RNDr. Mária Ganajová, CSc., RNDr. Ivana Sotáková

Date of last modification: 03.05.2015
Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ SPC1b/03	**Course name:** Special practising the school experiments II

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

Number of credits: 3

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
The knowledge of the reaction mechanism of the main tests of several organic compounds derivatives and the ability of their laboratory realization are required. Written tests: more than 50% from each one is required.

Learning outcomes:
The students will become familiar with the basic laboratory skills and techniques that they can apply in demonstrating experiments in their future career as a teacher. The rules of healthy and safety laboratory work are emphasised.

Brief outline of the course:
Qualitative analysis of organic compounds
Alkanes - preparation of methane
Alkenes preparation and addition reactions of ethene, addition reactionf of β-carotene
Alkynes, Aromatic hydrocarbons and their derivatives – preparation of benzene, aromatic electrophilic substitution reactions – nitration of toluene and naphthalene, preparation of benzyl bromide
Halogenoderivatives – preparation of chloroethane, chloroform, methyl iodide, iodoform
Hydroxoderivatives – properties and reactivity - methanol, ethanol, ethylene glycol, glycerol, preparation of sodium ethanolate and sodium phenoxide, bromation of phenol, colour reactions of phenols, naphtols
Oxoderivatives – diethyl ether – preparation and properties, Aldehydes and Ketones – preparation of formaldehyde, oxidation of formaldehyde, acetone – addition of sodium hydrogensulfite
Carboxylic acids and their derivatives – preparation and properties of soap
Natural compounds – carbohydrates, proteins, amino acids, lipids
Factors that affect the rate of chemical reactions – temperature and concentration
Isolation of the fragrant components using steam distillation

Recommended literature:
1. Smik, L., Merva, L., Brutovská, A: Technika a didaktika školských pokusov, Vyd.Rektorát UPJŠ,Košice,1988
2. Smik, L. a kol.: Špeciálna didaktika chémie II.,Vyd.Rektorát UPJŠ,Košice, 1984
3. Internal scripts -Školské pokusy z organickej chémie

Course language:
slovak

Notes:

Course assessment
Total number of assessed students: 177

A	B	C	D	E	FX
38.98	27.68	18.08	10.73	4.52	0.0

Provides: RNDr. Jana Špaková Raschmanová, PhD., RNDr. Ján Elečko, PhD., RNDr. Kvetoslava Stanková, PhD., RNDr. Zuzana Kudličková, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/STOX/04	**Course name:** Special Toxicology

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

Number of credits: 5

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities: ÚCHV/ZTOX/04

Conditions for course completion:

Learning outcomes:
Goal of the course is to provide the students with a knowledge of toxicology of organic and inorganic compounds, drugs, food additives, e.g., safety of substances, designation of substances in accordance of norm of European Union and order of Government of Slovak Republic.

Brief outline of the course:
Goal of the course is to provide the students with a knowledge of toxicology of organic and inorganic compounds, drugs, food additives, e.g., safety of substances, designation of substances in accordance of norm of European Union and order of Government of Slovak Republic.

Recommended literature:
J. A. Timbrell: Introduction to Toxicology, Taylor and Francis, London 1989.
H. Kenneth Dillon, Mat H. Ho: Biological Monitoring of Exposure to
Chemicals: Metals, John Wiley & Sons, New York 1991.
V. E. Forbes, T. L. Forbes: Toxicology in Theory and Practice, Chapmane Hall, London 1994.
H. M. Stahr: Analytical Methods in Toxicology, John Wiley & Sons, New York 1991.

Course language:

Notes:

Course assessment
Total number of assessed students: 205

A	B	C	D	E	FX
50.24	24.88	16.1	6.83	1.95	0.0

Provides: prof. RNDr. Katarína Györyová, DrSc.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/SAZ1/15	**Course name:** Stereochemistry of Inorganic Compounds

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

Number of credits: 3

Recommended semester/trimester of the course:

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:
Symmetry, elements of symmetry, point groups, symmetrical properties of orbitals and bonds. Principles of stereochemistry, VSEPR, configuration of molecules, polyhedra, regular and semiregular polyhedra. Valence shells with 4 –12 electron pairs, geometry of molecules and periodic system.

Recommended literature:
Kepert, D. L.: Inorganic Stereochemistry. Springer-Verlag, Berlin, 1982.
Kettle, S. F. A.: Symmetry and Structure. John Wiley & Sons, New York, 1985.

Course language:

Notes:

Course assessment
Total number of assessed students: 4

A	B	C	D	E	FX
25.0	25.0	25.0	25.0	0.0	0.0

Provides: doc. RNDr. Vladimír Zeleňák, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ STA1/03	**Course name:** Structure Analysis

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

Number of credits: 6

Recommended semester/trimester of the course:

Course level: II.

Prerequisities:

Conditions for course completion:
2 written tests.
30 %
The final examination is in a written form. The final mark is based on the results from current and final tests.

Learning outcomes:
Students get an overview about the symmetry at the micro- and macrostructure level and about diffraction methods used for the crystal structure determination and they will learn how to use the results of the crystal structure analysis in their own work.

Brief outline of the course:
Macrostructure and microstructure symmetry, individual work with space groups. Theoretical basis of the diffraction experiment. Practical aspects of crystal structure solution. Processing the results of structural analysis. Theoretical basis, practical aspects and possibilities of X-ray powder diffraction analysis, its use at work of a chemist.

Recommended literature:
Massa, W.: Crystal structure determination, 2nd edition. Springer 2004.
Clegg, W. et al.: Crystal structure analysis. Principles and practice. Oxford University Press 2009.
Hahn, T.: International tables for crystallography, Vol. A. Kluwer Academic Publishers 2002.
Stout, G.H. & Jensen, L.H.: X-ray Structure Determination. Macmillan Publishing Co., Inc. 1968.
Klug, H.P. & Alexander, L.E.: X-Ray diffraction procedures for polycrystalline and amorphous materials. John Wiley & Sons, Inc. 1970.

Course language:
Slovak and English

Notes:

Course assessment
Total number of assessed students: 90

A	B	C	D	E	FX
28.89	15.56	25.56	21.11	8.89	0.0

Provides: doc. RNDr. Ivan Potočňák, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ SVK1/15	**Course name:** Student scientific conference

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

Number of credits: 4

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

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 116

A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0

Provides:

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ VKCH/10	**Course name:** Vybrané kapitoly z chémie

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

Number of credits: 4

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

Course level: II.

Prerequisities:

Conditions for course completion:
Terminal examination by written form.

Learning outcomes:
Organic chemistry:
The general review on the basic chemistry of saccharides, lipids, amino acids and peptides.
Inorganic chemstry:
To get acquaintance of the students with the stereochemistry of inorganic compounds, methods of the study and its influence on the properties of the compounds. Moreover to get acqaintance of the students with actual direction of inorganic chemistry in the area of nanomaterials.

Brief outline of the course:
Organic chemistry:
Nomenclature of monosaccharides, their stereochemistry (the Fischer projection, the Haworth projection, conformation of sugars). Monosaccharide derivatives. Ascending reactions. Oligosaccharides and polysaccharides.
Lipids, their structure and classification. Groups of lipids. Triacylglycerols, glycerophospholipids sfingophospholipids, glycosphingolipids.
Amino acids, their nomenclature, classification and stereochemistry. Synthesis of amino acids. Nonribosomal construction of peptides.
Inorganic chemistry:
Symmetry, elements of symmetry, point groups, symmetrical properties of orbitals and bonds. Principles of stereochemistry, VSEPR, configuration of molecules, polyhedra, regular and semiregular polyhedra, the use of concept of symmetry in IR and UV-VIS spectroscopy. Nanochemistry - definition, bonds in nanoparticles and nanopowders, interactions between nanoparticles. Unique properties of nanomaterials, new methods of the synthesis of nanomaterials.

Recommended literature:
J. McMurry: Organic chemistry, Brooks/Cole, a Thomson Learning Company 2004, Sixth Eddition, ISBN 0534389996.
J. Chomič: Stereochemistry of inorganic compounds, UPJŠ Košice, 1988.
K. J. Klabunde, R. M. Richards: Nanoscale Materials in Chemistry, Wiley-CH, 2009.

Course language:

Notes:

Course assessment
Total number of assessed students: 118

A	B	C	D	E	FX
17.8	23.73	36.44	17.8	3.39	0.85

Provides: doc. RNDr. Mária Kožurková, CSc., doc. RNDr. Vladimír Zeleňák, PhD., doc. RNDr. Miroslava Martinková, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ XBCH/04	**Course name:** Xenobiochemistry

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

Number of credits: 5

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
test

Learning outcomes:
Students obtained modern knowledge of xenobiotics metabolism in living organisms

Brief outline of the course:
Characterization of metabolism of xenobiotics in the liver. The basic types of biotransformation reactions - oxidation, reduction, hydrolysis, conjugation. Biotransformation enzymes. Free radicals and their effects, lipid peroxidation.

Recommended literature:
Z. Ďuračková: Voľné radikály a antioxidanty v medicíne, Slovak akademik press 1998.
Z.Vodrážka : Biochémia, Praha, 1996.
A. Jindra: Biochémia, molekulárnobiologické a farmakologické aspekty, Praha, 1985.

Course language:

Notes:

Course assessment
Total number of assessed students: 40

A	B	C	D	E	FX
62.5	20.0	10.0	2.5	5.0	0.0

Provides: prof. Ing. Marián Antalík, DrSc., RNDr. Danica Sabolová, PhD.

Date of last modification: 03.05.2015

Approved: doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Stanislav Krajči, PhD., Prof. PhDr. Oľga Orosová, CSc.