COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ABSP/16	**Course name:** Essentials of ABAP

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: 3

Recommended semester/trimester of the course: 3., 5.

Course level: I., N

Prerequisities: ÚINF/ZTSP/14 or ÚINF/ZTSP/16

Conditions for course completion:

Learning outcomes:

Brief outline of the course:
Principles of programming in ABAP, declaration of variables, the basic syntax of the language ABAP Open SQL, ABAP Workbench navigation, ABAP editor, arithmetic, logic conditions, string operations, cycles, test programs using a debugger, an overview of the most important commands of ABAP, definition elementary and structured data objects, functional groups and function modules.

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 26

A	B	C	D	E	FX
19.23	38.46	34.62	3.85	0.0	3.85

Provides:

Date of last modification: 23.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ ADL1/15	**Course name:** Administration of GNU/Linux

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

Number of credits: 2

Recommended semester/trimester of the course: 6.

Course level: I.

Prerequisities: ÚINF/AOS1/15

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 0

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

Provides: RNDr. PhDr. Peter Pisarčík

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ ADW1/15	**Course name:** Administration of Windows

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

Number of credits: 2

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities: ÚINF/OSY1/15 and ÚINF/AOS1/15

Conditions for course completion:
Practics activity, home assignment, test.
Final test.

Learning outcomes:
Deep insight into system concepts and components of operating system Windows along with the practical techniques concerning with configuration and management corresponding to the professional administrator level. Completing the course allows to become oriented and experienced in the Active Directory administration, net services configuration and management and in the virtualization concepts.

Brief outline of the course:
Active Directory infrastructure and its management and configuration. Zone configuration, DNS setup, replication. Trust configuration. Roles and services. Account management, group policy, auditing. Certification authority and management. Network configuration and network services. DHCP, routing, firewall, remote access configuration. Monitoring and security breach handling. Licences for multiple remote access. Website configuration and management. FTP and mail server configuration. Data Storage configuration, filesystems and backup, network services. Installing and configuring devices, monitoring system health and settings. System log. Creating system images and image recovery. Installing and activating distribution. Virtualization support, installing and configuring virtual machines. Configuring access to network, memory and disk resources. Clustering.

Recommended literature:
1. J. C. Mackin, T. Northrup: MCTS self-paced training kit (exam 70-642) : configuring Windows server 2008 network infrastructure, Microsoft Press, 2008, ISBN 0-7356-2512-3.
2. S. Reimer, M. Mulcare, C. Kezema, B. Wright: Windows server 2008 Active Directory resource kit, Microsoft Press, 2008, ISBN 0-7356-2515-8.
3. D. Holme: Windows administration resource kit: productivity solutions for IT professionals, Microsoft Press, 2008, ISBN 0-7356-2431-3.

Course language:

Course assessment
Total number of assessed students: 2

A	B	C	D	E	FX
0.0	0.0	100.0	0.0	0.0	0.0
Provides: PaedDr. Ján Guniš, PhD.					
Date of last modification: 09.02.2017					
Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ AEO1/15	**Course name:** Legal aspects of electronic commerce

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

Number of credits: 3

Recommended semester/trimester of the course: 4., 6.

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 0

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

Provides: doc. JUDr. Regina Hučková, PhD., doc. RNDr. Jozef Jirásek, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ AFJ1a/15	**Course name:** Automata and formal languages

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

Number of credits: 4

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities:

Conditions for course completion:
Oral examination.

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:
Chomsky hierarchy of grammars and languages. Finite-state transducers and mapping, construction of a reduced automaton. Finite-state acceptors, nondeterministic acceptors, regular expressions. Closure properties of regular languages. Context-free grammars, Chomsky and Greibach normal forms. Pushdown automata, Pumping lemma. Closure properties of context-free languages.

Recommended literature:
J.E. Hopcroft, R.Motwani, J.D. Ullman: Introduction to automata theory, languages, and computation, Addison-Wesley, 2001.
J. Shallit: A second course in formal languages and automata theory, Cambridge University press, 2009.
M. Sipser: Introduction to the theory of computation, Thomson Course Technology, 2006.

Course language:

Course assessment
Total number of assessed students: 789

A	B	C	D	E	FX
24.46	18.12	23.83	18.38	10.01	5.2

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

Date of last modification: 06.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ANO/15	**Course name:** Image 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: 4

Recommended semester/trimester of the course: 3., 5.

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 20

A	B	C	D	E	FX
15.0	20.0	25.0	5.0	35.0	0.0

Provides: doc. Ing. Zoltán Tomori, CSc., doc. RNDr. Jozef Jirásek, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

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: 5.

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:

Course assessment
Total number of assessed students: 83

A	B	C	D	E	FX
51.81	24.1	6.02	4.82	7.23	6.02

Provides: RNDr. JUDr. Pavol Sokol, PhD., RNDr. PhDr. Peter Pisarčík
Date of last modification: 07.02.2017
Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/APSP/16	**Course name:** SAP Applications in Public Administration / a Company

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: 3

Recommended semester/trimester of the course: 4., 6.

Course level: I., N

Prerequisities: ÚINF/ZSSP/14 or ÚINF/ZSSP/16

Conditions for course completion:

Learning outcomes:

Brief outline of the course:
Description of the processes and procedures in the area of SAP budgeting, financing and asset management, SAP for human resources and payroll, SAP Administrative Office system, outputs - reporting in the SAP environment, output options, training outputs, output processing, and exporting data further processing in the environment of Excel, Word ..., inputs - import data in the SAP environment, preparation of input data, the procedure for importing data.

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 122

abs	n
100.0	0.0

Provides: Ing. Katarína Ninášová, RNDr. Edita Vojtová, Ing. Slávka Šimková, PhD.

Date of last modification: 23.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ ARP1/15	**Course name:** Computer architecture

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

Number of credits: 4

Recommended semester/trimester of the course: 4.

Course level: I., II.

Prerequisities:

Conditions for course completion:
Oral examination, written tests.

Learning outcomes:
To provide the students with a knowledge of basic principles of computer architecture.

Brief outline of the course:
Milestones in computer organization, fundamental limitations. The representation of numbers and the implementation of floating point arithmetic. Combinatorial and sequential circuits, memory organization, RAMs and ROMs. Digital logic level architecture, data path timing, machine cycle. The microarchitecture level, microinstructions and microinstrucion control. The instruction set architecture level, data types, addressing modes, instruction types. Instruction execution, pipelining, cache memory. I/O controllers, ports, interrupts, direct memory access. Device drivers, operating system kernel, device-independent software.

Recommended literature:
1. A. S. Tanenbaum: Structured Computer Organization, Prentice Hall, 2005
2. D.A. Patterson, J.L. Hennessy: Computer Organization and Design - The Hardware/Software Interface, Morgan Kaufmann, 2011
3. W. Stallings: Computer Organization and Architecture, Prentice Hall, 2012
4. J. Horák: Hardware, učebnice pro pokročilé, Computer Press, 2007

Course language:

Course assessment
Total number of assessed students: 58

A	B	C	D	E	FX
17.24	18.97	17.24	20.69	18.97	6.9

Provides: doc. RNDr. Jozef Jirásek, PhD.

Date of last modification: 07.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ASSP/16	**Course name:** Administration of the SAP System

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: 3

Recommended semester/trimester of the course: 4., 6.

Course level: I., N

Prerequisities: ÚINF/ZLSP/14 or ÚINF/ZLSP/16

Conditions for course completion:

Learning outcomes:

Brief outline of the course:
Fundamentals (System Logon, Configuring SAP Logon), Starting and Stopping (Starting SAP/ Database, Stopping SAP / Database), System configuration (Parameters in SAP, Parameters in Database, Background Tasks(Scheduling Background Jobs, Monitoring of Background Jobs), Database Administration (Extend Tablespaces).

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 42

abs	n
90.48	9.52

Provides:

Date of last modification: 23.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ASU1/15	**Course name:** Algorithms and data structures

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

Number of credits: 4

Recommended semester/trimester of the course: 6.

Course level: I.

Prerequisities: (ÚINF/PAZ1a/15 and ÚINF/PAZ1b/15) or ÚINF/ePAZ1b/15

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 93

A	B	C	D	E	FX
8.6	5.38	15.05	22.58	45.16	3.23

Provides: RNDr. Rastislav Krivoš-Belluš, PhD.

Date of last modification: 12.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ BAPS/15	**Course name:** Security and administration of computer systems

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

Number of credits: 4

Recommended semester/trimester of the course:

Course level: I.

Prerequisities: ÚINF/KRS/15 and (ÚINF/ADL1/15 or ÚINF/ADW1/15) and (ÚINF/ARP1/15 or ÚINF/FAN/15) and ÚINF/SKB1/15

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 2

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

Provides:

Date of last modification: 07.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ BPD1/15	**Course name:** Security of computer systems and data

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: 5.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 8

A	B	C	D	E	FX
25.0	0.0	0.0	25.0	50.0	0.0

Provides: doc. RNDr. Jozef Jirásek, PhD., RNDr. Rastislav Krivoš-Belluš, PhD.

Date of last modification: 07.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

<table>
<tr><td colspan="6">University: P. J. Šafárik University in Košice</td></tr>
<tr><td colspan="6">Faculty: Faculty of Science</td></tr>
<tr><td>Course ID: ÚINF/ BPO/14</td><td colspan="5">Course name: Bachelor Thesis and its Defence</td></tr>
<tr><td colspan="6">Course type, scope and the method:
Course type:
Recommended course-load (hours):
Per week: Per study period:
Course method: present</td></tr>
<tr><td colspan="6">Number of credits: 4</td></tr>
<tr><td colspan="6">Recommended semester/trimester of the course:</td></tr>
<tr><td colspan="6">Course level: I.</td></tr>
<tr><td colspan="6">Prerequisities:</td></tr>
<tr><td colspan="6">Conditions for course completion:</td></tr>
<tr><td colspan="6">Learning outcomes:</td></tr>
<tr><td colspan="6">Brief outline of the course:</td></tr>
<tr><td colspan="6">Recommended literature:</td></tr>
<tr><td colspan="6">Course language:</td></tr>
<tr><td colspan="6">Course assessment
Total number of assessed students: 61</td></tr>
<tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>FX</td></tr>
<tr><td>40.98</td><td>22.95</td><td>16.39</td><td>11.48</td><td>6.56</td><td>1.64</td></tr>
<tr><td colspan="6">Provides:</td></tr>
<tr><td colspan="6">Date of last modification: 09.02.2017</td></tr>
<tr><td colspan="6">Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.</td></tr>
</table>

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ BZP1a/15	**Course name:** Special seminar to bachelor thesis

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

Number of credits: 2

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities: ÚINF/PBS/15

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:
1. KATUŠČÁK, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998
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. Special and resarch literature connected to Bachalor theses according to recommendations of supervisor.

Course language:

Course assessment
Total number of assessed students: 79

abs	n
93.67	6.33

Provides: RNDr. Ľubomír Antoni, PhD., RNDr. František Galčík, PhD.

Date of last modification: 07.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ BZP1b/15	**Course name:** Special seminar to bachelor thesis
Course type, scope and the method: **Course type:** Practice **Recommended course-load (hours):** **Per week:** 2 **Per study period:** 28 **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course: 6.	
Course level: I.	
Prerequisities: ÚINF/BZP1a/15	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature: 1. KATUŠČÁK, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998 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. Special and research literature connected to Bachalor theses according to recommendations of supervisor.	
Course language:	
Course assessment Total number of assessed students: 74	

abs	n
98.65	1.35

Provides: RNDr. Ľubomír Antoni, PhD.	
Date of last modification: 07.02.2017	
Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ DBS1a/15	**Course name:** Database systems

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

Number of credits: 5

Recommended semester/trimester of the course: 3.

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:
Acquired basic concepts and techniques of relational database theory and corresponding software.

Brief outline of the course:
Data models. Languages for defining and manipulating data (DDL, DML). Tables, attributes and integrity constraints. Queries: select, where, group by, aggregate and system functions. Nested queries and several tables: join, union, primary, foreign key. Relational algebra.

Recommended literature:
- S. Krajčí: Databázové systémy, UPJŠ, 2005
- J. ULLMAN: Principles of database and knowledge – base systems, Comp. Sci. Press., 1988
- R. Ramakrishnan, J. Gehrke, Database Management Systems, McGraw-Hill, 2003
- Itzik Ben-Gun, Microsoft SQL Server 2012 T-SQL Fundamentals, O'Reilly, 2012
- HENDERSON, K.: The Guru's Guide to Transact SQL, Addison Wesley Professional, 2000

Course language:

Course assessment
Total number of assessed students: 791

A	B	C	D	E	FX
11.38	8.98	17.57	22.25	32.36	7.46

Provides: doc. RNDr. Csaba Török, CSc., Mgr. Viliam Kačala

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ DBS1b/15	**Course name:** Database systems

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: 4.

Course level: I.

Prerequisities: ÚINF/DBS1a/15 or ÚINF/DBdi/15

Conditions for course completion:

Learning outcomes:
Mastering the basic techniques of effective design, normalization and programmable extension of relational databases.

Brief outline of the course:
Database modelling. Functional dependency and normalization. Recursion and transitive closure. Cursors. Stored procedures. Indices and B-trees. Triggers. Transaction. XML, SDL, XPath, XQuery.

Recommended literature:
- S. Krajčí: Databázové systémy, UPJŠ, 2005 2. J.
- Date C.J., Database Design and Relational Theory, O'Reilly, 2012
- Atkinson, P., Vierra, R., BEGINNING MICROSOFT SQL SERVER 2012 PROGRAMMING, John Wiley - Wrox, 2012
- Itzik Ben-Gan, Microsoft SQL Server, 2012 T-SQL Fundamentals, O'Reilly, 2012
- L. Davidson, J.M. Moss, Pro SQL Server 2012 Relational database Design and Implementation, APRESS, 2012

Course language:

Course assessment
Total number of assessed students: 678

A	B	C	D	E	FX
10.32	8.11	11.5	23.01	36.28	10.77

Provides: doc. RNDr. Csaba Török, CSc., Mgr. Viliam Kačala

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ DOP1/15	**Course name:** Multithreaded and distributed programming

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

Number of credits: 3

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:
Mastering the basics of distributed and parallel programming and design of distributed applications communicating via messages.

Brief outline of the course:
Multithreading, synchronization primitives. Basics of parallel programming, PLINQ, Task Parallel Library. Distributed object-oriented programming and its application. Service-oriented architecture, communication via messages. Endpoint: address, interconnections and communication channels, contracts for services, data and messages.

Recommended literature:
- A. S. Tanenbaum, M.V. Steen: Distributed Systems: Principles and Paradigms, Prentice Hall, 2002
- C.Campbell, R.Johnson, A.Miller, Parallel Programming with Microsoft® .NET, Microsoft, 2010
- J.Sharp, Windows Communication Foundation 4 Step by Step, O'Reilly, 2010
- J.Albahari, B.Albahari, C# 5.0 in a Nutshell: The Definitive Reference, O'Reilly, 2011

Course language:

Course assessment
Total number of assessed students: 13

A	B	C	D	E	FX
0.0	30.77	53.85	7.69	7.69	0.0

Provides: doc. RNDr. Csaba Török, CSc.

Date of last modification: 07.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚGE/ DPZ/13 | **Course name:** Remote sensing

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: 4., 6.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

ŽELEZNÝ, M. (2012): Dálkový průzkum Země (skriptá), Západočeská univerzita v Plzni, Katedra kybernetiky. 93 s. URL: http://www.kky.zcu.cz/uploads/courses/dpz/DPZ-prednasky.pdf
CANADIAN CENTRE FOR REMOTE SENSING (2012): Fundamentals of Remoste Sensing (učebný text v angličtine, in English), 256 s. URL: http://www.nrcan.gc.ca/earth-sciences/geography-boundary/remote-sensing/fundamentals/1430.
BITTERER, L. (2005): Fotogrametria. Interné učebné texty z geodézie, fotogrametrie, katastrálneho mapovania. URL: http://svf.uniza.sk/kgd/literatura.html
HALOUNOVÁ L., PAVELKA K. (2005): Dálkový průzkum Země. Skriptá, ČVUT Praha, ISBN 80-01-03124-1. 192 s.
ŽÍHLAVNÍK, Š., SCHEER, Ľ., 2001: Diaľkový prieskum Zeme v lesníctve. TU Zvolen, 289 s.
KOLÁŘ J., HALOUNOVÁ L., Pavelka K. (1997): Dálkový průzkum Země. Skriptá, ČVUT Praha, 164 s.
DOBROVOLNÝ, P. (1998). Dálkový průzkum Země. Digitální zpracování obrazu. Masarykova Univerzita, Brno.
LILLESAND, T.M., KIEFER, R.W., CHIPMAN, J.W. (2015). Remote Sensing and Image Interpretation. 7. Vydanie, New York, USA (Wiley),756 s.
JENSEN, R. J. (2006): Remote Sensing: An Earth Resource Perspective. 2. vydanie, New Jersey, USA (Prentice Hall), 608 s.
CAMPBELL, J.B., WYNNE, R.H. (2011). Introduction to Remote Sensing. New York, USA (Guilford), 667 s.

Course language:

Course assessment
Total number of assessed students: 2

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

Provides: doc. Mgr. Michal Gallay, PhD., Mgr. Katarína Onačillová
Date of last modification: 23.02.2017
Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ DSM3a/10	**Course name:** Discrete mathematics for informaticians

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: 2.

Course level: I.

Prerequisities:

Conditions for course completion:
Based on results of two semestral tests.
Based on semestral evaluation and the result of examination (test).

Learning outcomes:
To present the basics of combinatorics and their applications in computer science.

Brief outline of the course:
Mathematical induction and Dirichlet principle. The sum and the product rule. Permutations, k-permutations, combinations. Selections with repetitions. The inclusion/exclusion principle. Recurrent equations. Introduction to graph theory. Trees. Eulerian and Hamiltonian graphs. Planar graphs. Graph colourings.

Recommended literature:
1. S. Jendroľ, P. Mihók: Diskrétna matematika I., UPJŠ Košice 1992
2. J. Nešetřil, J. Matoušek: Kapitoly z diskrétni matematiky
3. E. R. Scheinerman: Mathematics - a discrete introduction, Brooks/Cole Publ. Comp. Pacific Grove 2000.
4. R.P. Grimaldi: Discrete and Computational Mathematics, Addison-Wesley Publ. Co.-Rending 1994.

Course language:
Slovak

Course assessment
Total number of assessed students: 590

A	B	C	D	E	FX
4.41	2.71	4.92	14.58	51.02	22.37

Provides: doc. RNDr. Tomáš Madaras, PhD., RNDr. Mária Maceková, PhD.

Date of last modification: 22.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ DWA1/15	**Course name:** Developing web applications with JavaScript

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

Number of credits: 2

Recommended semester/trimester of the course: 5.

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:
Principles of JavaScript. Architecture of modern web applications, client-server communications with asynchronous IO programming using NodeJS and MongoDB. Securing web applications. Templates for web page generation. Fundamentals of e-commerce web sites (storefront components, site administration, integrations with third-party services)

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 13

A	B	C	D	E	FX
23.08	15.38	30.77	7.69	23.08	0.0

Provides:

Date of last modification: 23.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ FAN/15	**Course name:** Forensic 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: 4	
Recommended semester/trimester of the course: 6.	
Course level: I., II.	
Prerequisities: ÚINF/BPD1/15	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	

Course assessment
Total number of assessed students: 10

A	B	C	D	E	FX
10.0	30.0	40.0	20.0	0.0	0.0

Provides: PhDr. Štefan Franko, PhD., RNDr. JUDr. Pavol Sokol, PhD.
Date of last modification: 09.02.2017
Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/FUN1/15	**Course name:** Functional 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: 4

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities: ÚINF/PAZ1a/15 or ÚINF/ePAZ1a/15

Conditions for course completion:

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

Brief outline of the course:
Principles of functional programming. Lambda calculus from the functional programming languages point of view. Properties of functional programming languages. Programming language Haskell: the structure of the language and basic computational rule, basic data types, lists, recursion and induction, trees

Recommended literature:
BIRD, R., WADLER, P.: Introduction to Functional Programming. Prentice Hall International, 1988.
LIPOVAČA, M.: Learn You Haskell for Great Good!. Free from http://learnyouahaskell.com/

Course language:

Course assessment
Total number of assessed students: 218

A	B	C	D	E	FX
20.18	12.39	16.06	13.76	36.7	0.92

Provides: doc. Ing. Štefánia Gallová, CSc., RNDr. Ondrej Krídlo, PhD.

Date of last modification: 07.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚGE/ GIS/13	**Course name:** Geographic Information Systems

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: 4., 6.

Course level: I.

Prerequisities:

Conditions for course completion:
Active presence during practicals, mid-term written test, project assignment and final written exam.

Learning outcomes:
The student will understand the basics of the theory of geoinformation science, GIS, and Remote Sensing. The student will be able perform tasks in a GIS software, generate thematic amps and conduct basic spatial analyses such as spatial querries, atribute querries, spatial interpolation, terrain modelling, editing custom geodata, importing geodata, 3D vizualization.

Brief outline of the course:
Introduction to GIS and geoinformation problematic, basics of geoinformatics, principals of vector and raster representation, surfaces – digital terrain models, organisation of work in projects, system implementation, data sources and data input, data structuring, data analysing, digital image processing, process of layout creation, data quality and metadata, standardisation the digital data and legislation, GIS software products (ArcGIS and relevant ESRI products, Geomedia and Intergraph products, MapInfo, Topol), applications in a geography field in Slovakia, development trends in GIS and geoinformation field.

Recommended literature:
HEYWOOD, I., CORNELIUS, S., CARVER, S. 2011: An Introduction to Geographical Information
Systems. Prentice Hall.
GEOinformatics, http:// www.geoinformatics.com
http://www.esri.com/
http://www.osgeo.org/

Course language:

Course assessment
Total number of assessed students: 24

A	B	C	D	E	FX
29.17	29.17	12.5	16.67	12.5	0.0

Provides: doc. Mgr. Michal Gallay, PhD., prof. Mgr. Jaroslav Hofierka, PhD.
Date of last modification: 23.02.2017
Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ GRP/13	**Course name:** GRID computing

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

Number of credits: 3

Recommended semester/trimester of the course: 6.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 1

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

Provides: Ing. Jozef Černák, PhD.

Date of last modification: 20.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

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: 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:

Course assessment

Total number of assessed students: 170

A	B	C	D	E	FX
38.24	20.0	15.29	11.18	11.18	4.12

Provides: RNDr. PhDr. Peter Pisarčík

Date of last modification: 07.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ KMU1/15	**Course name:** Coding and multimedial data transition

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

Number of credits: 4

Recommended semester/trimester of the course: 5.

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 14

A	B	C	D	E	FX
35.71	0.0	21.43	28.57	14.29	0.0

Provides: doc. RNDr. Stanislav Krajči, PhD., doc. RNDr. Jozef Jirásek, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/KOPR/15	**Course name:** Concurrent programming

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

Number of credits: 2

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities: ÚINF/PAZ1a/15

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 92

A	B	C	D	E	FX
32.61	18.48	26.09	10.87	4.35	7.61

Provides: RNDr. Róbert Novotný, PhD., RNDr. Peter Gurský, PhD.

Date of last modification: 07.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚTVŠ/ KP/12	**Course name:** Survival Course
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: 2	
Recommended semester/trimester of the course:	
Course level: I., II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Course assessment Total number of assessed students: 329	

abs	n
47.11	52.89

Provides: MUDr. Peter Dombrovský, Mgr. Marek Valanský	
Date of last modification: 23.02.2017	
Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ KRP1/15	**Course name:** Cryptographic protocols

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: 4

Recommended semester/trimester of the course: 3., 5.

Course level: I., II.

Prerequisities:

Conditions for course completion:
written test

Learning outcomes:
to acquire knowledge on design and verifying of cryptographic protocols

Brief outline of the course:
Authentication and key establishment using shared and public key cryptography,
key agreement protocols, conference key agreement, zero-knowledge protocols.

Recommended literature:
1. Colin Boyd, Anish Mathuria: Protocols for Authentication and Key Establishment, Springer, 2003
2. Douglas R. Stinson: Cryptography: Theory and Practice, Third Edition, Chapman & Hall/CRC, 2006
3. Bruce Schneier: Applied Cryptography, Second Edition,
John Wiley & Sons Inc., 1996
4. Peter Ryan, Steve Schneider: Modeling and Analysis of Security Protocols, Addison-Wesley, 2001

Course language:

Course assessment
Total number of assessed students: 6

A	B	C	D	E	FX
16.67	0.0	16.67	33.33	16.67	16.67

Provides: doc. RNDr. Stanislav Krajči, PhD., doc. RNDr. Jozef Jirásek, PhD., RNDr. Rastislav Krivoš-Belluš, PhD.

Date of last modification: 07.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ KRS/15	**Course name:** Cryptographic systems and their applications
Course type, scope and the method: **Course type:** Lecture / Practice **Recommended course-load (hours):** **Per week:** 3 / 2 **Per study period:** 42 / 28 **Course method:** present	
Number of credits: 6	
Recommended semester/trimester of the course: 3., 5.	
Course level: I., II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	

Course assessment

Total number of assessed students: 103

A	B	C	D	E	FX
13.59	8.74	10.68	12.62	34.95	19.42

Provides: doc. RNDr. Stanislav Krajči, PhD., RNDr. Rastislav Krivoš-Belluš, PhD.
Date of last modification: 09.02.2017
Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ LEK1/99	**Course name:** Physical Principles of Medicine Technique

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

Number of credits: 3

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 34

A	B	C	D	E	FX
85.29	11.76	2.94	0.0	0.0	0.0

Provides: doc. RNDr. Karol Flachbart, DrSc.

Date of last modification: 24.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚTVŠ/ LKSp/13	**Course name:** Summer Course-Rafting of TISA River
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: 2	
Recommended semester/trimester of the course:	
Course level: I., II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Course assessment Total number of assessed students: 126	

abs	n
45.24	54.76

Provides: Mgr. Peter Bakalár, PhD.	
Date of last modification: 23.02.2017	
Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.	

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: 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:

Course assessment
Total number of assessed students: 241

A	B	C	D	E	FX
21.58	10.79	13.69	23.65	28.22	2.07

Provides: RNDr. Ondrej Krídlo, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ MAIN/15	**Course name:** Interdisciplinary applications of informatics
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 4	
Recommended semester/trimester of the course:	
Course level: I.	
Prerequisities: (ÚINF/ANO/15 or ÚINF/AFJ1a/15) and (ÚINF/ASU1/15 or ÚFV/POF1b/99 or ÚFV/UPF1/12) and (ÚINF/UNS1/15 or ÚINF/UNV1/15 or ÚFV/NOT1b/03)	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	

Course assessment
Total number of assessed students: 4

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

Provides:
Date of last modification: 01.03.2017
Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ MIN1/15	**Course name:** Informatics for medicine

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., 5.

Course level: I., II.

Prerequisities:

Conditions for course completion:
Oral and written exam

Learning outcomes:
To present an application of computer science in medicine domain with emphasis on the specific conditions for so-called safety-relevant domain.

Brief outline of the course:
Software development go medicine domain (radiotherapy and ultrasound). Syngo platform, MS .NET, C#, C++. Development based on so-called "V" development model. An overview of used software tools:
RationalRose, RequisitePro, UITA, Caliber, ClearCase. Quality and process management and SW company mangement according to CMMI methodology.

Recommended literature:
http://www.syngo.com
http://www.siemens.com

Course language:

Course assessment
Total number of assessed students: 74

A	B	C	D	E	FX
74.32	25.68	0.0	0.0	0.0	0.0

Provides: doc. RNDr. Gabriela Andrejková, CSc.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ MIN2/15	**Course name:** Informatics for medicine

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

Number of credits: 3

Recommended semester/trimester of the course: 6.

Course level: I., II.

Prerequisities: ÚINF/MIN1/15

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 3

A	B	C	D	E	FX
33.33	0.0	33.33	0.0	33.33	0.0

Provides: doc. RNDr. Gabriela Andrejková, CSc.

Date of last modification: 07.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/MIS/15	**Course name:** Management of information systems

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: 4., 6.

Course level: I.

Prerequisities: ÚINF/DBS1a/15 or ÚINF/DBdi/15

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 11

A	B	C	D	E	FX
18.18	63.64	18.18	0.0	0.0	0.0

Provides: doc. RNDr. Gabriel Semanišin, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ MPJ1/15	**Course name:** Modern programming languages

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: 6.

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:
Mastering the basics of standard and experimental programming models and techniques.

Brief outline of the course:
Object oriented programming, Generic programming – parametric polymorphism. Vector programming – operator overloading, indexer. Event programming (event handling) – delegates. Attribute programming. Parallel and multithread programming – processes, threadpool. Functional and declarative programming – lambda expressions, LINQ. Graphics primitives.

Recommended literature:
1. Andrew Troelsen, Pro C# 5.0 and the .NET 4.5 Platform, 2012, APRESS
2. Joseph Albahari, Ben Albahari, C# 5.0 in a Nutshell: The Definitive Reference, 2012, O'REILLY
3. Daniel Solis, Illustrated C# 2012, 2012, APRESS

Course language:

Course assessment
Total number of assessed students: 118

A	B	C	D	E	FX
16.1	18.64	24.58	22.88	17.8	0.0

Provides: doc. RNDr. Csaba Török, CSc.

Date of last modification: 07.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ MSU/07	**Course name:** Statistical Methods of Data Analysis

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: I.

Prerequisities:

Conditions for course completion:
Exam

Learning outcomes:
Introduction to probability theory and mathematical statistics.

Brief outline of the course:
General introduction to theory of probability, random processes and mathematical statistics.

Recommended literature:
1) L. Lyons, Statistics for Nuclear and Particle Physics, CUP, 1989.
2) L. Lyons, A Practical Guide to Data Analysis for Physical Science Students, CUP, 1991.
3) J.R. Taylor, An Introduction to Error Analysis: The Study of Uncertainties in Physical Measurements, University Science Books, 1997.

Course language:

Course assessment
Total number of assessed students: 55

A	B	C	D	E	FX
16.36	10.91	7.27	7.27	58.18	0.0

Provides: doc. RNDr. Jozef Urbán, CSc., RNDr. Adela Kravčáková, PhD.

Date of last modification: 20.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/MTL/15	**Course name:** MATLAB and neurocognition

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 0 / 2 **Per study period:** 0 / 28
Course method: present

Number of credits: 2

Recommended semester/trimester of the course: 3., 5.

Course level: I.

Prerequisities:

Conditions for course completion:
quizes, final exam

Learning outcomes:
Intro to programming in MATLAB with focus on its usage in Neural and Cognitive Science.

Brief outline of the course:
Intro to MATLAB: navigation and interaction, variables, vectors, matrices, operators, scripts, functions, toolboxes. Scripts for human-computer interaction in behavioraln experiments. Generation of visual and auditory stimuli. Analysis and visualization of behavioral, neurophyshiological and neuroimaging (fMRI, EEG, MEG) data. Cognitive and neural modeling in MATLAB.

Recommended literature:
1. Wallisch et al. MATLAB for Neuroscientists: An Introduction to Scientific Computing in MATLAB. Academic Press 2008.
2. Duda, Hart, Stork: Pattern Classification, 2nd Edition, Wiley 2000 Stork, Yom-Tow: Computer Manual in MATLAB to accompany Pattern Classification, 2nd Edition, Wiley, 2004
3. Lewandowsky: Computational Modeling in Cognition. Sage, 2011
4. Levine: Introduction to Neural and Cognitive Modeling, Psychology Press, 2000 Dayan and Abbott: Theoretical Neuroscience: Computational and Mathematical Modeling of Neural Systems. MIT Press 2005.

Course language:
Slovak or English

Course assessment
Total number of assessed students: 7

A	B	C	D	E	FX
28.57	14.29	14.29	42.86	0.0	0.0

Provides: doc. Ing. Norbert Kopčo, PhD., Ing. Beáta Tomoriová, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ MZIa/10	**Course name:** Mathematical foundations of informatics I

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

Number of credits: 6

Recommended semester/trimester of the course: 1.

Course level: I.

Prerequisities:

Conditions for course completion:
Two tests and completion of individual homework.
Based on semestral evaluation and examination test.

Learning outcomes:
To obtain basic knowledge in arithmetic, linear algebra, abstract algebra and calculus, to learn proof methods and to use the obtained knowledge in problem solving.

Brief outline of the course:
Integers, divisibility, congruences, congruence classes. Fields and groups. Systems of linear equations, matrices, matrix operations, determinants. Functions and their properties, continuity, limit, derivative. Analysis of functions.

Recommended literature:
Huťka, Benko, Ďurikovič: Matematika, Alfa, Bratislava 1991
D. Studenovská, T. Madaras, S. Mockovčiak: Zbierka úloh z matematiky pre nematematické odbory, UPJŠ 2006
D. Studenovská, T. Madaras: Matematika pre nematematické odbory, UPJŠ 2006
J. Ivan: Matematika 1, Alfa, Bratislava 1989
T. Katriňák a kol.: Algebra a teoretická aritmetika, Alfa, Bratislava 1986

Course language:
Slovak

Course assessment
Total number of assessed students: 181

A	B	C	D	E	FX
0.55	8.29	8.84	14.36	44.2	23.76

Provides: doc. RNDr. Tomáš Madaras, PhD., Mgr. Juraj Hudák

Date of last modification: 22.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/MZIb/10	**Course name:** Mathematical foundations of informatics II

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

Number of credits: 6

Recommended semester/trimester of the course: 2.

Course level: I.

Prerequisities: ÚMV/MZIa/10

Conditions for course completion:
Based on results of two tests and individual homeworks.
Based on semestral evaluation and examination test.

Learning outcomes:
To extend the obtained knowledge in mathematics by topics in integral calculus, differential equations and infinite series.

Brief outline of the course:
Indefinite and definite integral and their applications. Differential equations. Series, convergence criteria. Series of functions, Taylor expansion. Periodic functions, trigonometric series, Fourier expansion.

Recommended literature:
Huťka, Benko, Ďurikovič: Matematika, Alfa, Bratislava 1991
D. Studenovská, T. Madaras, S. Mockovčiak: Zbierka úloh z matematiky pre nematematické odbory, UPJŠ 2006
D. Studenovská, T. Madaras: Matematika pre nematematické odbory, UPJŠ 2006
J. Ivan: Matematika 2, Alfa, Bratislava 1989
T. Katriňák a kol.: Algebra a teoretická aritmetika, Alfa, Bratislava 1986

Course language:
Slovak

Course assessment
Total number of assessed students: 85

A	B	C	D	E	FX
1.18	8.24	10.59	17.65	52.94	9.41

Provides: doc. RNDr. Tomáš Madaras, PhD., Mgr. Juraj Hudák

Date of last modification: 22.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KGER/NJKG/07	**Course name:** Communicative Grammar in German Language

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:

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 47

A	B	C	D	E	FX
53.19	12.77	10.64	4.26	10.64	8.51

Provides: PaedDr. Ingrid Puchalová, PhD.

Date of last modification: 20.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ NOT1a/03	**Course name:** Nontraditional Optimization Techniques I

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

Number of credits: 5

Recommended semester/trimester of the course: 3., 5.

Course level: I., II.

Prerequisities:

Conditions for course completion:
Monitoring progress in solving applied projects.
examination (50%), quality of the project (50%)
examination

Learning outcomes:
To familiarize students with biologically and physically inspired optimization, simulation and prediction techniques. To expand students' creativity and programming skills by applying heuristic techniques in solving applied problems.

Brief outline of the course:
Fundamentals of optimization theory. Basic optimization problems. Basic types of objective functions. Classification of optimization techniques. Gradient-based optimization techniques. Evolutionary algorithms. Genetic algorithms. Genetic algorithms as Markov processes. Statistical Mechanics Approximations of Genetic Algorithms. Monte Carlo simulation and simulated annealing. Swarm optimization. Cellular Automata and their applications in simulations of complex systems. Fractals. Agent-based models. Evolutionary games. Evolution of cooperation. Fundamentals of Neural Networks. Application of singular value decomposition to solve least squares problems.

Recommended literature:
Hartmann, A. K., Rieger, H., Optimization Algorithms in Physics, Wiley, 2002
Reeves, C. R., Rowe, J. E., Genetic Algorithms: Principles and perspectives, Kluwer, 2003
Mitchell, M., Complexity. A Guided Tour, Oxford University Press, 2009
Solé, R. V., Phase Transitions, Princeton University Press, 2011
Ilachinski, A., Cellular Automata. A Discrete universe, World Scientific, 2002
Haykin, S., Neural Networks. A Comprehensive Foundation, Prentice-Hall, 1999

Course language:

Course assessment
Total number of assessed students: 66

A	B	C	D	E	FX
66.67	18.18	7.58	3.03	4.55	0.0

Provides: RNDr. Branislav Brutovský, CSc.
Date of last modification: 24.02.2017
Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ NOT1b/03	**Course name:** Nontraditional Optimization Techniques II

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

Number of credits: 5

Recommended semester/trimester of the course: 4., 6.

Course level: I., II.

Prerequisities:

Conditions for course completion:
Presentation of the project in written form. Oral exam and discussion of the presented project.

Learning outcomes:
By using examples from the biology to learn applications of optimization techniques on study and interpretation of complex systems. Introduction to new paradigms in the area of systems biology.

Brief outline of the course:
Complex systems, emergent behavior. Evolutionary theory and memetics. Application of optimization techniques on complex systems. Application of methods /genetic algorithms, simulated annealing, taboo search/ on selected problems of biomolecular simulations. Molecular dynamics, protein folding. Population dynamics, metabolic networks and complexity in bioinformatics.

Recommended literature:
The actual scientific papers.

Course language:

Course assessment
Total number of assessed students: 39

A	B	C	D	E	FX
87.18	5.13	5.13	2.56	0.0	0.0

Provides: doc. RNDr. Jozef Uličný, CSc.

Date of last modification: 24.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ NUM/10	**Course name:** Numerical Methods

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: I.

Prerequisities:

Conditions for course completion:
Continuous evaluation is based on students' activity in the classroom and work on assignments.
Evaluation

Learning outcomes:
To acquaint students with basic numerical methods of calculus and algebra, which are necessary for the subsequent course of computational physics.

Brief outline of the course:
Computational solutions of physical problems and computational errors. Approximation and interpolation of functions. Fast Fourier transform. Linear systems of equations - direct and itterative methods. Nonlinear systems of equations. Conditions of convergence and assesment of error. Numerical derrivatives and quadrature. Matrix operations, determinants and inverse matrices. Eigenvalues and eigenvectors - partial and complete problem.

Recommended literature:
1. C. Pozrikidis: Numerical Computation in Science and Engineering, Oxford University Press, 1998.
2. R.W. Hamming: Numerical Methods for Scientists and Engineers, Dover, 1973.
3. A.L. Garcia: Numerical Methods for Physics, Prentice-Hall, 1994.

Course language:

Course assessment
Total number of assessed students: 86

A	B	C	D	E	FX
15.12	17.44	22.09	25.58	13.95	5.81

Provides: doc. RNDr. Milan Žukovič, PhD.

Date of last modification: 21.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

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

abs	n
100.0	0.0

Provides: Mgr. Alexander Szabari, PhD.
Date of last modification: 07.02.2017
Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/OPSP/16	**Course name:** ABAP and Object and Dialogue Programming

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: 3

Recommended semester/trimester of the course: 4., 6.

Course level: I., N

Prerequisities: ÚINF/RASP/14 or ÚINF/RASP/16

Conditions for course completion:

Learning outcomes:

Brief outline of the course:
Screen, function codes, local and global classes, inheritance, polymorphism.

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 13

A	B	C	D	E	FX
61.54	7.69	0.0	7.69	0.0	23.08

Provides: Mgr. Karol Seman

Date of last modification: 23.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ ORSP/16	**Course name:** Oracle Database Administration
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: 3	
Recommended semester/trimester of the course:	
Course level: I., N	
Prerequisities: ÚINF/ASSP/14 or ÚINF/ASSP/16	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course: Database Overview: database architecture, connecting to the database, using database administration tools, administrating Oracle instances. Space management: administrating "Table Spaces", Performing reorganization of tables, housekeeping and troubleshooting. Backup, Restore and Recovery.	
Recommended literature:	
Course language:	
Course assessment Total number of assessed students: 35	

abs	n
94.29	5.71

Provides:
Date of last modification: 23.02.2017
Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ OSS/15	**Course name:** Seminar to operation systems

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: I.

Prerequisities: ÚINF/PAZ1a/15

Conditions for course completion:
Develop two final projects: PowerShell script (Windows) or Shellscript (Linux)

Learning outcomes:
To work with shells of Windowsu and GNU/Linux. Scripting in both platforms.

Brief outline of the course:
Block "Windows Shell Scripting"

PowerShell scripting environment and basic concepts.
Cmdlet as a fundamental unit and its usage.
Cmdlet parameters and documentation. Standard input and output. Pipes. Combining cmdlets via pipelines.
Data model, classes and objects. Object properties. Relation between PowerShell object model and .NET platform.
Developing complex scripts in the PowerShell ISE environment. Fundamentals of procedural programming in PowerShell.
Function and filters. Providers: WMI, registers. Developing custom cmdlets in C#.
Block „Linux Shell Scripting“

Linux Shell Scripting: Bash and fundamental concepts.
Standard input and output. Pipes and I/O redirection.
Common filters for standard I/O.
Basic programming constructs: conditions and loops. Exit codes as a basic for procedural elements
Shell Expansions: arithmetic environment, subshells, variables.
Accessing information structures and Linux filesystem.
Creating complex and secure scripts -- best practices.

Recommended literature:
[1] Bruce Payette, Windows PowerShell in Action, Second Edition, ISBN 9781935182139, Manning 2011
[2] Richard Siddaway, PowerShell in Practice, ISBN: 9781935182009, Manning 2010
[3] Shell Command Language. In: The Open Group Base Specification Issue 6. [online] Available online <http://pubs.opengroup.org/onlinepubs/009695399/utilities/xcu_chap02.html>

[4] Steve Parker, Shell Scripting: Expert Recipes for Linux, Bash and more, ISBN: 978-1-1181-6633-8, Wrox 2011

Course language:
English

Course assessment
Total number of assessed students: 43

A	B	C	D	E	FX
74.42	25.58	0.0	0.0	0.0	0.0

Provides: RNDr. Róbert Novotný, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ OSY1/15	**Course name:** Operating systems

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 0 **Per study period:** 28 / 0
Course method: present

Number of credits: 3

Recommended semester/trimester of the course: 3.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 194

A	B	C	D	E	FX
27.32	12.89	17.53	18.56	17.01	6.7

Provides: doc. Ing. Štefánia Gallová, CSc., RNDr. PhDr. Peter Pisarčík

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ PAI1/13	**Course name:** Legal aspects of 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: 2., 4.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 24

A	B	C	D	E	FX
12.5	25.0	16.67	12.5	16.67	16.67

Provides: RNDr. JUDr. Pavol Sokol, PhD.

Date of last modification: 07.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/PAZ1a/15

Course name: Programming, algorithms, and complexity

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

Number of credits: 8

Recommended semester/trimester of the course: 1.

Course level: I., II.

Prerequisities:

Conditions for course completion:
Get a prescribed minimum number of points for activities of continuous assessment and for solving tasks during final practical test.

Learning outcomes:

Brief outline of the course:
First part of the course (with turtle graphics): New Eclipse project, interactive communication with objects, simple turtle graphics, making user methods, local variables, variable types, arithmetic and logical expressions, random numbers, conditions, loops for and while, debugging, references, chars, Strings, arrays, instance variables, mouse events, simple array algorithms.
Second part of the course (without turtle graphics): Exceptions, using try-catch-finally block, files and directories, conversion from string variables, encapsulation, constructors with parameters, constructors hierarchy, getters and setters, interfaces, inheritance and polymorphism, abstract classes and methods, packages, visibility modifiers, sorting using Arrays.sort() and interfaces Comparable and Comparator, Java Collections Framework: autoboxing, interface List, ArrayList, LinkedList, interface Set and class HashSet, methods equals() and hashCode(), for-each loop, interface Map and class HashMap, custom Exceptions, rethrowing exceptions, exceptions' inheritance, Runtime exceptions, Errors, static variables and methods.

Recommended literature:
1. ECKEL, B.: Thinking in Java, Pearson, 2006, ISBN: 978-01-318-7248-6
2. PECINOVSKÝ, R.: OOP - Naučte se myslet a programovat objektově, Computer Press, a.s., Brno, 2010, ISBN: 978-80-251-2126-9
3. SIERRA, K., BATES, B. Head First Java, O'Reilly Media; 2nd edition, 2005, ISBN: 978-05-960-0920-5

Course language:
Slovak language, english language is required only to read Java API documentation.

Course assessment
Total number of assessed students: 560

A	B	C	D	E	FX
18.04	7.5	11.43	15.54	13.39	34.11

Provides: RNDr. František Galčík, PhD., RNDr. Zuzana Bednárová, PhD., RNDr. Juraj Šebej, PhD.
Date of last modification: 06.02.2017
Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ PAZ1b/15	**Course name:** Programming, algorithms, and complexity

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

Number of credits: 7

Recommended semester/trimester of the course: 2.

Course level: I., II.

Prerequisities: ÚINF/PAZ1a/15

Conditions for course completion:
Get a given minimum number of points for activities of continuous assessment and for solving tasks during final practical test. The final practical test focuses on application of known algorithms and techniques of efficient algorithm design.

Learning outcomes:

Brief outline of the course:
Recursion and its applications, fractals. Binary search and simple sorting algorithm with quadratic time complexity. Time and space complexity of algorithms, analysis of time complexity, O-notation. Basic data structures and their applications: linked list, stack, and queue. Hierarchical data and their representation, trees, tree traversals, binary search trees. Arithmetic expressions, evaluation of an arithmetic expression. Efficient sorting algorithm: QuickSort, MergeSort, and HeapSort. Backtrack. Techniques "divide and conquer" and dynamic programming as methods for design of efficient algorithms. Basic graph algorithms for unweighted graphs (Breadth-first search, Depth-first search, graph connectivity, graph components, graph bridges, topological sort) and for weighted graphs (shortest paths: Bellman-Ford algorithm, Dijkstra algorithm, Floyd-Warshallov algorithm; minimum spanning tree: Prim algorithm, Kruskal algorithm). String algorithms. Greedy algorithms.

Recommended literature:
WRÓBLEWSKI, P.: Algoritmy, datové struktury a programovací techniky. Computer Press, Brno, 2004
CORMEN, T.H., LEISERSON, Ch.E., RIVEST, R.L, STEIN, C. Introduction to Algorithms. The MIT Press, 2009.
KLEINBERG, J., TARDOS, E.: Algorithm Design, Cornell University, Addison Wesley, New York, 2006.

Course language:
Slovak language, literature is available in english and czech language.

Course assessment
Total number of assessed students: 1105

A	B	C	D	E	FX
12.31	6.61	9.41	20.27	22.99	28.42

Provides: RNDr. František Galčík, PhD., PaedDr. Ján Guniš, PhD., RNDr. Zuzana Bednárová, PhD.

Date of last modification: 06.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/PAZ1c/17	**Course name:** Programming, algorithms, and complexity

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

Number of credits: 5

Recommended semester/trimester of the course: 3.

Course level: I.

Prerequisities: ÚINF/PAZ1a/15 or ÚINF/ePAZ1a/15

Conditions for course completion:
Active attendance at seminars, creation of two team projects.

Learning outcomes:
Gain skills to design and implement complex application with three-layer architecture and well-known design patterns.

Brief outline of the course:
1. Class identification. Use-cases. Method and instance variable identification. Unit testing in JUnit.
2. Designing CRUD application. Entity identification and design. Entity identity. GUI with Swing. Two-layered architecture, and layers interaction.
3. Interfaces of DAO objects. Maven as dependency manager. Database persistent layer.Connecting database with Spring JDBC Template.
4. Class relationships with static association. Pros and cons in hardwired associations. Implementing Factory design pattern as an abstraction of hardwired association. Enum. Implementation of business logic layer. Three-layered architecture.
5. MVC design pattern. Models and view in Swing. Model examples: static, dynamic, refreshing model.
6. Safe password storage. Associations between classes. Cardinalities: 1:1, 1:M, 1:N. Design and realization in the code.
7. Design of complex data model, ResultSetExtractor, modal windows in Swing.
8. Logging with default tools and with `slf4j` library. Logging best practices. Generic classes, annotations, lambda expressions.
9. Spring Boot and REST services. Json format.
10. Angular 2 - Installation, TypeScript, DOM model, components and their properties, events listeners in components.
11. Angular 2 - components interaction, forms, input validation.
12. Angular 2 - services, Promise, injection, communication with REST server via HTTP.

Recommended literature:
1. SIERRA, K., BATES, B.: Head First Java (2nd Edition), 2005
2. ECKEL, B.: Thinking in Java (4th Edition), 2006
3. Angular Docs, typescript. Dostupné na internete: https://angular.io/docs/ts/latest/

Course language:
Slovak or English.

Course assessment
Total number of assessed students: 302

A	B	C	D	E	FX
34.11	19.54	16.23	14.24	11.26	4.64

Provides: RNDr. Peter Gurský, PhD.

Date of last modification: 06.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ PBS/15	**Course name:** Pro-seminar to bachelor thesis
Course type, scope and the method: **Course type:** Practice **Recommended course-load (hours):** **Per week:** 1 **Per study period:** 14 **Course method:** present	
Number of credits: 1	
Recommended semester/trimester of the course: 4.	
Course level: I.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Course assessment Total number of assessed students: 259	

abs	n
93.05	6.95

Provides: RNDr. Ľubomír Antoni, PhD.	
Date of last modification: 07.02.2017	
Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ PDS1/15	**Course name:** Parallel and distributed systems

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

Number of credits: 4

Recommended semester/trimester of the course: 6.

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:
to introduce the fundamentals of parallel and distributed programming

Brief outline of the course:
current parallel and distributed architectures, basic issues in parallel and distributed applications development, data structures and programming methodologies

Recommended literature:
1. Kenneth A. Berman and Jerome L. Paul: Algorithms: Sequential, Parallel, and Distributed, Thomson, 2005, ISBN 0-534-42057-5
2. Gregory R. Andrews: Foundations of Multithreaded, Parallel, and Distributed Programming, Addison-Wesley, 2000, ISBN 0-201-35752-6
3. Joseph JáJá: An Introduction to Parallel Algorithms, Addison-Wesley, 1992, ISBN 0-201-54856-9
4. Gerard Tel: Introduction to Distributed Algorithms, Cambridge University Press, 1994, ISBN 0-521-47069-2

Course language:

Course assessment
Total number of assessed students: 133

A	B	C	D	E	FX
23.31	16.54	15.04	18.05	15.79	11.28

Provides: doc. RNDr. Jozef Jirásek, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: CJP/ PFAJ4/07	**Course name:** English Language of Natural Science

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

Number of credits: 2

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities:

Conditions for course completion:
Active participation in class and completed homework assignments. Students are allowed to miss 2 classes at the most.
Continuous assessment: 2 credit tests (presumably in weeks 6 and 13) and academic presentation in English.
In order to be admitted to the final exam, a student has to score at least 65 % as a sum of both credit tests and academic presentation.
The exam test results represent 50% of the final grade for the course, continuous assessment results represent the other 50% of the final grade.
The final grade for the course will be calculated as follows:
A 93-100, B 86-92, C 79-85, D 72-78, E 65-71, FX 64 and less.

Learning outcomes:
Enhancement of students' language skills (speaking, writing, reading and listening comprehension) in English for specific purposes and development of students' language competence (familiarization with selected phonological, lexical and syntactic phenomena), improvement of students' pragmatic competence (familiarization with selected language functions) and improvement of presentation skills at B2 level (CEFR) with focus on terminology of English for natural science.

Brief outline of the course:
ANGLICKÝ JAZYK PRE GEOGRAFOV:
Veda a výskum. Odbor geografia.
Planéta Zem. Naša slnečná sústava. Litosféra, hydrosféra, atmosféra, biosféra.
Zem - dynamická planéta. Tektonické platne. Sopečná činnosť.
Zemetrasenia.
Svetové oceány. Morské prúdy. Tsunami.
Veľký koralový útes.
Atmosféra - zloženie atmosféry.
Kontinenty. Európa - krajiny, národnosti.
ANGLICKÝ JAZYK PRE EKOLÓGOV:
Veda a výskum. Odbor ekológia.
Životné prostredie. Znečistenie a dôsledky.

Sopečná činnosť, zemetrasenia.
Great Pacific Garbage Patch.
Globálne otepľovanie a dôsledky. Ľadovce.
Počasie a klíma. Búrky, hurikány, tsunami.
Život na Zemi. Ohrozené rastlinné a živočíšne druhy.
ANGLICKÝ JAZYK PRE BIOLÓGOV:
veda a výskum, odbor biológia.
morfológia rastlín, koreň.
stonka, list.
rozmnožovanie rastlín, kvet.
biológia človeka - telesné sústavy.
slovná zásoba z oblasti botanickej a zoologickej nomenklatúry.
ANGLICKÝ JAZYK PRE MATEMATIKOV:
Veda a výskum, odbor matematika.
čísla a tvary v matematike.
Elementárna algebra.
Elementárna geometria.
Výpočty v matematike.
Pytagoras, Pytagorova veta.
Grafy a diagramy.
Štatistika.
ANGLICKÝ JAZYK PRE FYZIKOV
Veda a výskum, odbor fyzika.
Atómy a molekuly.
Hmota a jej premeny.
Elektrina, jej využitie.
Zvuka, jeho prenos.
Svetlo.
Solárny systém.
Matematické operácie.
ANGLICKÝ JAZYK PRE CHEMIKOV:
Veda a výskum, odbor chémia:
História, alchímia.
Nomenklatúra.
Laboratórium a jeho vybavenie.
Periodická tabuľka.
Hmota a jej premeny.
Organická chémia.
Anorganická chémia.
ANGLICKÝ JAZYK PRE INFORMATIKOV:
Veda a výskum, informatika.
Život s počítačom.
Typický PC.
Zdravie a bezpečnosť, ergonomika.
Programovanie.
Emailovanie.
Cybercrime.
Trendy budúcnosti.

Recommended literature:
study materials provided by the course instructor

Royds-Irmak, D.E. Beginning Scientific English. Nelson, 1975.
Velebná, B. English for Chemists. ffweb.ff.upjs.sk/vyuka//
Redman, S.: English Vocabulary in Use, Pre-intermetdiate, Intermediate. Cambridge University Press, 2003.
Powel, M.: Dynamic Presentations. CUP, 2010.
Armer, T.: Cambridge English for Scientists. CUP, 2011.
Wharton J.: Academic Encounters. The Natural World. CUP, 2009.
Murphy, R.: English Grammar in Use. Cambridge University Press, 1994.
Redman, S.: English Vocabulary in Use, Pre-intermetdiate, Intermediate. Cambridge University Press, 2003.
P. Fitzgerald : English for ICT studies. Garnet Publishing, 2011.
http://www.bbc.co.uk/worldservice/learningenglish

Course language:

Course assessment
Total number of assessed students: 2304

A	B	C	D	E	FX
32.55	26.26	18.06	11.46	9.24	2.43

Provides: PaedDr. Gabriela Bednáriková, Mgr. Gabriel Lukáč, PhD., PhDr. Helena Petruňová, CSc.

Date of last modification: 21.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: CJP/ PFAJAKA/07	**Course name:** Academic English

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

Number of credits: 2

Recommended semester/trimester of the course:

Course level: I., II., N

Prerequisities:

Conditions for course completion:
Active classroom participation, 2 absences tolerated (4x45 min.) tolerated. 2 tests (5th/6th week and 12th/13th week), no retake. Minipresentation on chosen topic. Final evaluation- average assessment of tests and presentation. Grading scale: A 93-100%, B 86-92%, C 79-85%, D 72-78%, E 65-71%, FX 64% and less

Learning outcomes:

Brief outline of the course:

Recommended literature:
Seal B.: Academic Encounters, CUP, 2002
T. Armer :Cambridge English for Scientists, CUP 2011
M. McCarthy M., O´Dell F. - Academic Vocabulary in Use, CUP 2008
Zemach, D.E, Rumisek, L.A: Academic Writing, Macmillan 2005
Olsen, A. : Active Vocabulary, Pearson, 2013
www.bbclearningenglish.com
Cambridge Academic Content Dictionary, CUP, 2009

Course language:
English language, level B2 according to CEFR.

Course assessment
Total number of assessed students: 334

A	B	C	D	E	FX
29.94	23.65	16.17	11.08	7.49	11.68

Provides: PaedDr. Gabriela Bednáriková

Date of last modification: 21.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: CJP/ PFAJGA/07	**Course name:** Communicative Grammar in English

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

Number of credits: 2

Recommended semester/trimester of the course:

Course level: I., II., N

Prerequisities:

Conditions for course completion:
Active classroom participation (max. 2x90 min. absences tolerated). 2 test (5th/6th and 12/13th week), no retake. Final evaluation- average assessment of tests. Grading scale: A 93-100%, B 86-92%, C 79-85%, D 72-78%, E 65-71%, FX 64% and less.

Learning outcomes:

Brief outline of the course:

Recommended literature:
Misztal M.: Thematic Vocabulary, Fragment, 1998
McCarthy, O'Dell: English Vocabulary in Use, 1994
Alexander L.G.: Longman English Grammar, Longman, 1988
Jones I. - Communicative Grammar Practice, CUP, 1992
Vince M.: Macmillan Grammar in Context, Macmillan, 2008
www.bbclearningenglish.com
Gráf T., Peters S.: Time to practise, Polyglot, 2007

Course language:

Course assessment
Total number of assessed students: 389

A	B	C	D	E	FX
39.33	18.25	16.97	9.0	6.17	10.28

Provides: PaedDr. Gabriela Bednáriková, Mgr. Barbara Mitríková

Date of last modification: 21.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: CJP/ PFAJKKA/07	**Course name:** Communicative Competence in English

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

Number of credits: 2

Recommended semester/trimester of the course:

Course level: I., II., N

Prerequisities:

Conditions for course completion:
Active participation in class and completed homework assignments. Students are allowed to miss two classes at the most.
2 credit tests (presumably in weeks 6/7 and 12/13) and short academic presentations in English on selected topics.
Final grade will be calculated as follows: A 93-100 %, B 86-92%, C 79-85%, D 72-78%, E 65-71%, FX 64 % and less.

Learning outcomes:
Uplatnenie a aktívne používanie svojich teoretických vedomostí v praktických komunikačných situáciách. Zdokonalenie jazykových vedomostí a zručností študenta, rečovej, pragmatickej a vecnej kompetencie, predovšetkým zlepšujú komunikáciu, schopnosťprijímať a formulovať výpovede, efektívne vyjadrovať svoje myšlienky ako aj orientovať sa v obsahovom pláne výpovede. Precvičovanie rečových intencií kontaktných (napr. pozdravy, oslovenia, pozvanie, oslovenie), informatívnych (napr. získavanie a podávanie informácií, vyjadrenie priestorových a časových vzťahov), regulačných (napr. prosba, poďakovanie, zákaz, pochvala, súhlas, nesúhlas) a hodnotiacich (napr. vyjadrenie vlastného názoru, stanoviska, želania, emócií). Výsledkom budovania praktickej jazykovej kompetencie majú byť vedomosti a zručnosti zodpovedajúce požiadavkám a kritériám dokumentu Spoločný európsky referenčný rámec pre vyučovanie jazykov.

Brief outline of the course:
Rodina, jej formy a problémy
Vyjadrovanie pocitov a dojmov
Dom, bývanie a budúcnosť
Formy a dialekty v anglickom jazyku
Život v meste a na vidieku
Kolokácie a idiomy, zaužívané slovné spojenia
Prázdniny a sviatky vo svete
Životné prostredie a ekológia
Výnimky zo slovosledu
Frázové slovesá a ich použitie
Charakteristiky neformálneho diškurzu

Recommended literature:

www.bbclearningenglish.com
McCarthy M., O'Dell F.: English Vocabulary in Use, Upper-Intermediate. CUP, 1994.
Misztal M.: Thematic Vocabulary. SPN, 1998.
Fictumova J., Ceccarelli J., Long T.: Angličtina, konverzace pro pokročilé. Barrister and Principal, 2008.
Peters S., Gráf T.: Time to practise. Polyglot, 2007.
Jones L.: Communicative Grammar Practice. CUP, 1985.
Alexander L.G.: Longman English Grammar. Longman, 1988.

Course language:

English language, B2 level according to CEFR

Course assessment

Total number of assessed students: 211

A	B	C	D	E	FX
36.02	21.33	20.38	10.9	7.58	3.79

Provides: Mgr. Barbara Mitríková

Date of last modification: 21.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ PMO1/15	**Course name:** Proces modelling

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

Number of credits: 5

Recommended semester/trimester of the course: 4., 6.

Course level: I.

Prerequisities: ÚINF/SWI1a/15

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 21

A	B	C	D	E	FX
14.29	38.1	28.57	14.29	0.0	4.76

Provides: doc. RNDr. Gabriel Semanišin, PhD.

Date of last modification: 07.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ POF1a/99	**Course name:** Computational Physics I

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

Number of credits: 4

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities: ÚFV/NUM/10

Conditions for course completion:
Continuous evaluation is based on students' activity in the classroom and work on assignments. Examination and assignments submitted electronically with the attached computer code.

Learning outcomes:
To teach students to use computer as a tool of modeling of physical reality.

Brief outline of the course:
Introduction to dynamical systems. Numerical solution of ordinary differential equations (ODE) with initial value. Boundary value problems for ODE. Discrete schemes for partial differential equations (PDE). Numerical solution of PDE. Finite difference methods, consistency, convergence, stability. Eliptic and parabolic PDE. Introduction to Monte Carlo (MC) method and applicactions in statistical physics. MC simulations of lattice spin systems and stochastic processes.

Recommended literature:
1. C. Pozrikidis: Num. Comp. in Science and Engineering, Oxford Univ. Press, 1998.
2. A.L. Garcia: Numerical Methods for Physics, Prentice-Hall, 1994.
3. D. P. Landau, K. Binder: A Guide to Monte Carlo Simulations in Statistical Physics, Cambridge Univ. Press, 2000.
4. B. A. Berg: Introduction to Markov Chain Monte Carlo Simulations and Their Statistical Analysis, http://www.worldscibooks.com/etextbook/5904/5904_intro.pdf
5. W. Janke: Lectures on Ising model, http://www.physik.uni-leipzig.de/~janke/Ising_Lectures_Lviv.html

Course language:

Course assessment
Total number of assessed students: 94

A	B	C	D	E	FX	N	P
35.11	19.15	8.51	14.89	13.83	3.19	0.0	5.32

Provides: doc. RNDr. Milan Žukovič, PhD.

Date of last modification: 21.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ POF1b/99	**Course name:** Computational Physics II

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

Number of credits: 4

Recommended semester/trimester of the course: 5.

Course level: I., II.

Prerequisities:

Conditions for course completion:
Continuous evaluation is based on students' activity in the classroom and work on assignments. Examination and assignments submitted electronically with the attached computer code.

Learning outcomes:
To teach students to create simulation projects to help to solve physical problems.

Brief outline of the course:
Advanced methods of Monte Carlo (MC) simulations of lattice spin systems. Local and cluster perturbation algorithms. Errors and histogram analysis of MC data. Reweighting by simple and histogram methods. Universality and finite-size scaling. Determination of order of phase transitions and calculation of critical exponents. Basics of quantum MC simulations. MC simulations of stochastic processes. Diffusion equation. Stochastic processes in financial analysis. Basics of molecular dynamics method.

Recommended literature:
1. D.P. Landau, K. Binder: A Guide to Monte Carlo Simulations in Statistical Physics, Cambridge University Press, 2000.
2. B.A. Berg: Introduction to Markov Chain Monte Carlo Simulations and Their Statistical Analysis, http://www.worldscibooks.com/etextbook/5904/5904_intro.pdf
3. W. Janke: Lectures on Ising model, http://www.physik.uni-leipzig.de/~janke/Ising_Lectures_Lviv.html

Course language:

Course assessment
Total number of assessed students: 47

A	B	C	D	E	FX
55.32	19.15	14.89	8.51	2.13	0.0

Provides: doc. RNDr. Milan Žukovič, PhD.

Date of last modification: 21.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/POS2/15	**Course name:** User environments of operating systems

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: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:
(1) Introduction to the user interface of operating systems.
(2) Working with the command line.
(3) Work with files.
(4) Text editors and word processing.
(5) File systems.
(6) Setting of permissions.
(7) Management of processes.
(8) Introduction to scripting.
(9) Packaging systems.
(10) The basic network settings, introduction to firewall settings.
(11) Introduction to the security settings.

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 58

A	B	C	D	E	FX
37.93	10.34	25.86	10.34	12.07	3.45

Provides: RNDr. JUDr. Pavol Sokol, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/PPLO/15	**Course name:** Principles of Computers, Logic Circuits

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

Number of credits: 2

Recommended semester/trimester of the course: 3.

Course level: I.

Prerequisities:

Conditions for course completion:
written exam, presence at the laboratory practice

Learning outcomes:
Student will obtain knowledge about principles of functioning, analysis and synthesis of logical electronic circuits, as a basic unit of computing technology. Student will use his theoretical knowledge to design and to construct of electronic circuits and he/she will learn how to interpret measured results.

Brief outline of the course:
1. Combinatorial logical circuits (definitions, laws of logical algebra, electronic models of operations of Boolean algebra, NAND, digital multiplexor and demultiplexor, detector of errors for BDC code, arithmetic addition of two one bit binary operands). 2. Digital memory circuits (bistable circuit as basic memory unit, synchronous and asynchronous switching circuits). 3. Sequentional logical circuits (sequentional behavior, structure and stability of sequentional logical circuits, basic sequentional functions and their realization, arithmetic unit of digital computer)

Recommended literature:
Petrovič P.: Elektronika I – Vybrané obvody číslicovej techniky. Skriptum PF, Edičné stredisko UPJŠ, Košice 2003. 2. vydanie: Vydavateľstvo UPJŠ, Košice, 2006.

Course language:

Course assessment
Total number of assessed students: 50

A	B	C	D	E	FX
36.0	46.0	16.0	2.0	0.0	0.0

Provides: Mgr. Vladimír Komanický, Ph.D.

Date of last modification: 24.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ PRG1/15	**Course name:** Programming

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

Number of credits: 6

Recommended semester/trimester of the course: 3., 5.

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 37

A	B	C	D	E	FX
27.03	16.22	16.22	10.81	18.92	10.81

Provides: PaedDr. Ján Guniš, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/PRIS/15	**Course name:** Software and information system

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

Number of credits: 4

Recommended semester/trimester of the course:

Course level: I.

Prerequisities: ÚINF/ASU1/15 and ÚINF/TVP1/15 and ÚINF/PMO1/15 and ÚINF/SWI1b/15

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 14

A	B	C	D	E	FX
28.57	21.43	42.86	0.0	7.14	0.0

Provides:

Date of last modification: 23.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ PRM1/15	**Course name:** Project management

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.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 51

A	B	C	D	E	FX
27.45	27.45	25.49	3.92	9.8	5.88

Provides: Mgr. Alexander Szabari, PhD., doc. RNDr. Gabriel Semanišin, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/PRO1a/15	**Course name:** Project 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: 4

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 71

A	B	C	D	E	FX
71.83	4.23	11.27	11.27	0.0	1.41

Provides: Mgr. Alexander Szabari, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/PRO1b/15	**Course name:** Project II.

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: 4

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 43

A	B	C	D	E	FX
60.47	11.63	11.63	4.65	4.65	6.98

Provides: Mgr. Alexander Szabari, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ PRP2/15	**Course name:** Principles of computers

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: 2.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 147

A	B	C	D	E	FX
34.69	17.01	17.69	14.29	15.65	0.68

Provides: doc. Ing. Štefánia Gallová, CSc., RNDr. Juraj Šebej, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ PRS/15	**Course name:** Programming of robotic kits

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: 4.

Course level: I.

Prerequisities:

Conditions for course completion:
Assessment of individual work on computers for a number of sub-assignments - robotic mini-project.
Creating and presenting a programmed robotic model including documentation.

Learning outcomes:
1. To acquire an overview of robotic sets and robotic programming environments.
2. To acquire skills in constructing and programming robots in selected robotic programming environments.

Brief outline of the course:
Robotic set (Lego Mindstorms) - components, engines, sensors, basics of constructing of the mechanical parts of the model. Programming robotic models in languages NXT-G and NXC - branching statements, loops, blocks, events, parallel processes that work with sensors, datalogging, communication between several NXT bricks. Creating mini-project (eg, traffic lights, parking, dance creations, guitar, smart thermometer, measuring distance). Robotic competition, ideas for demanding projects. Creation and presentation of the final project - a programmed robot model (eg, navigate a maze, sports, paramedic) including documentation.

Recommended literature:
1. BUMGARDNER, J. (2007) The Origins of Mindstorms. Wired, 2007. http://www.wired.com/geekdad/2007/03/the_origins_of_/
2. Carnegie Mellon. Robotics Academy. http://www.education.rec.ri.cmu.edu/
3. KABÁTOVÁ, M. a kol. (2010) Ďalšie vzdelávanie učiteľov základných škôl a stredných škôl v predmete informatika: Didaktika robotických stavebníc. Bratislava : ŠPÚ, 2010. ISBN 978-80-8118-070-5
4. JAKEŠ, T. (2014) LEGO MINDSTORMS NXT - Robotické vzdělávání, ZČU v Plzni, 2014. https://lego.zcu.cz/web/

Course language:

Course assessment
Total number of assessed students: 41

A	B	C	D	E	FX
43.9	26.83	14.63	2.44	0.0	12.2
Provides: doc. RNDr. Ľubomír Šnajder, PhD., PaedDr. Ján Guniš, PhD., RNDr. Zuzana Bednárová, PhD.					
Date of last modification: 07.02.2017					
Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ PSIN/15	**Course name:** Computer network Internet

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: 5

Recommended semester/trimester of the course: 2.

Course level: I.

Prerequisities: ÚINF/PAZ1a/15 or ÚINF/ePAZ1a/15

Conditions for course completion:
Activity at excercises, home work, test.
verbal exam, final test

Learning outcomes:
To understand ISO OSI reference model for network communication, to analyze communication channels parameters, to understand different access methods, to be familiar with the function of center network devices (hub, switch, router), to understand IP protocol, IP addresses and the transfer of internet packets, to understand reliable data transfer of the TCP protocol, to be able to use Sockets, to know basic application protocols and use them in own applications.

Brief outline of the course:
1. Introduction to computer networks, internet connection types, delay and loss in packet-switched networks, ISO OSI reference model and TCP/IP protocols family.
2. Application layer: Web and HTTP, protocol FTP ,e-mail and SMTP, POP3, IMAP,
3. Application layer: domain names and DNS, Peer-to-peer applications. Security in computer networks.
4. Transport layer: services, multiplexing and demultiplexing, protocol UDP, reliable data transfer
5. Transport layer: connection oriented transport protocol TCP, flow and congestion control.
6. Network Layer: Internet protocol IPv4, virtual circuit and datagram networks, packet fragmentation, routing table, application protocol DHCP
7. Network Layer: network address translation NAT, ICMP protocol, internet protocol IPv6
8. Network Layer: routing algorithms and protocols, broadcast and multicast routing
9. Link layer: error detection, multiple access methods CSMA/CD and CSMA/CA, Ethernet, frames, protocols ARP and RARP, link layer addressing
10. Link Layer and wireless and mobile networks: hub, switch, virtual LAN, 802.11 Wireless LAN, Bluetooth 802.15, WiMAX 802.16, Mobile IP, mobility in GSM
11. Physical Layer: Communication channels parameters, digital and analog encoding.

Recommended literature:
1. J. F. Kurose, Keith W. Ross: Computer Networking: A Top-Down Approach, 5. edícia, 2010
2. A. S. Tanenbaum: Computer Networks, Prentice Hall, 2002
3. W. Stallings: Local and Metropolitan Area Networks, Prentice Hall, 2000
4. E. Comer, R.E. Droms: Computer Networks and Internets, Prentice Hall, 2003

5. W. R. Stevens: TCP/IP Illustrated, Vol.1: The Protocols, Addison-Wesley, 1994

Course language:

Course assessment
Total number of assessed students: 705

A	B	C	D	E	FX
9.79	5.11	11.21	15.89	38.16	19.86

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

Date of last modification: 06.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ PSW1/06	**Course name:** Programming of web-pages

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

Number of credits: 2

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities:

Conditions for course completion:
Evaluation of partial assignments.
The secure dynamic web applications using JavaScript, PHP, MySQL.

Learning outcomes:
Acquire overview about modern technologies to make dynamic web pages. Be able to make web pages with cascading styles according to W3C standards. Use technologies on server side (PHP) and on client side (JavaScript). Understand relational databases (MySQL). Understand web applications security risks and know how to eliminate them.

Brief outline of the course:
Principle of making web pages. HTML language, W3C standards. Optimization of work, cascading styles. Tools for creating the web. Programming in JavaScript. Simple scripts for dynamic web pages. Programming on server side, script language PHP. Application based on PHP. Work with MySQL database. Conjunction of used technologies. Selected problems resolvable by technologies on server side and on client side.

Recommended literature:
GILMORE, W. Jason. Beginning PHP and MySQL: from novice to professional. 4th ed. New York: Apress, 2010. ISBN 978-143-0231-141.
KOSEK, Jiří. PHP - tvorba interaktivních internetových aplikací: podrobný průvodce. Vyd. 1. Praha: Grada, 1999, 490 s. Průvodce (Grada). ISBN 80-716-9373-1.
SUEHRING, Steve a Janet VALADE. PHP, MySQL, JavaScript. Vyd. 1. Brno: Computer Press, 2006, xxiv, 692 pages. --For dummies. ISBN 978-1-118-21370-4.
HUSEBY, Sverre H. Zranitelný kód. Brno: Computer Press, 2006, 207 s. ISBN 80-251-1180-6.
THE OWASP FOUNDATION. OWASP [online]. 2014 [cit. 2014-02-26]. Dostupné z: https://www.owasp.org/index.php/Main_Page

Course language:
slovak

Course assessment
Total number of assessed students: 200

A	B	C	D	E	FX
9.5	8.5	9.5	9.0	22.5	41.0
Provides: doc. RNDr. Ľubomír Šnajder, PhD., PaedDr. Ján Guniš, PhD.					
Date of last modification: 07.02.2017					
Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/PTS/15	**Course name:** Computer and telecommunication networks

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: 5

Recommended semester/trimester of the course: 3.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 6

A	B	C	D	E	FX
16.67	0.0	0.0	33.33	33.33	16.67

Provides: doc. RNDr. Jozef Jirásek, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ RASP/16	**Course name:** Creation of Reports in ABAP

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: 3

Recommended semester/trimester of the course:

Course level: I., N

Prerequisities: ÚINF/ABSP/14 or ÚINF/ABSP/16

Conditions for course completion:

Learning outcomes:

Brief outline of the course:
Reading database tables, selection screens, events, declarations and branching of programs, working with internal tables, function modules: upload, download and module creation, code structure, forms and includes.

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 15

A	B	C	D	E	FX
46.67	6.67	0.0	0.0	33.33	13.33

Provides: Mgr. Karol Seman

Date of last modification: 23.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

<table>
<tr><td colspan="6">University: P. J. Šafárik University in Košice</td></tr>
<tr><td colspan="6">Faculty: Faculty of Science</td></tr>
<tr><td>Course ID: ÚINF/ SKB1/15</td><td colspan="5">Course name: Network and communication security</td></tr>
<tr><td colspan="6">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</td></tr>
<tr><td colspan="6">Number of credits: 5</td></tr>
<tr><td colspan="6">Recommended semester/trimester of the course: 4.</td></tr>
<tr><td colspan="6">Course level: I.</td></tr>
<tr><td colspan="6">Prerequisities: ÚINF/PSIN/15</td></tr>
<tr><td colspan="6">Conditions for course completion:</td></tr>
<tr><td colspan="6">Learning outcomes:</td></tr>
<tr><td colspan="6">Brief outline of the course:</td></tr>
<tr><td colspan="6">Recommended literature:</td></tr>
<tr><td colspan="6">Course language:</td></tr>
<tr><td colspan="6">Course assessment
Total number of assessed students: 4</td></tr>
<tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>FX</td></tr>
<tr><td>0.0</td><td>0.0</td><td>0.0</td><td>25.0</td><td>50.0</td><td>25.0</td></tr>
<tr><td colspan="6">Provides: doc. RNDr. Gabriel Semanišin, PhD., doc. RNDr. Jozef Jirásek, PhD.</td></tr>
<tr><td colspan="6">Date of last modification: 09.02.2017</td></tr>
<tr><td colspan="6">Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.</td></tr>
</table>

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ SLO1a/15	**Course name:** Symbolic logic

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: 4.

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:
To understand basic notions of sentence and predicate logic - sentence, sentence scheme, provability, satisfiability, term, formula.

Brief outline of the course:
Predicate logic – logic language, syntax and semantics, term, formula. Axioms, proof, provability. Interpretation, truth, model. Correctness of the predicate logic.

Recommended literature:
GOLDSTERN M., JUDAH H.: The Incompleteness Phenomenon, A New Course in Mathematical Logic, A K Peters, Wellesley, Massachusetts, 1995
http://cs.ics.upjs.sk/~krajci/skola/vyucba/ucebneTexty/logika/logika.pdf

Course language:

Course assessment
Total number of assessed students: 378

A	B	C	D	E	FX
21.96	10.32	12.96	12.17	28.84	13.76

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

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ SOP1/15	**Course name:** Administration and security of computer networks

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: 6.

Course level: I.

Prerequisities: ÚINF/SKB1/15

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 0

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

Provides: doc. RNDr. Jozef Jirásek, PhD., RNDr. Rastislav Krivoš-Belluš, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/SPG1/15	**Course name:** Seminar on computer graphics

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: 4., 6.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:
Seminar is connecte to the lecture UGR Introduction to computer graphics. In seminar form students presents actual theoretical and implementation problems. Main goal in interest is oriented to quick algorithms of computer graphics, geometric modelling and realistic drawing of scenes.
Knowledge from the lecture UGR and good programmers experience are supposed.

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 37

A	B	C	D	E	FX
72.97	13.51	8.11	2.7	0.0	2.7

Provides: RNDr. Rastislav Krivoš-Belluš, PhD., doc. RNDr. Jozef Jirásek, PhD.

Date of last modification: 07.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ SPS1/15	**Course name:** Seminar in network programming

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: 5.

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:
To render current technologies of programing in network distributed environment.

Brief outline of the course:
Basics of programming the client-server applications, iterative and concurrent servers, Remote Procedure Calls. Server-side programming, CGI, PHP, basics of Perl and Python. Script languages, ASP, JSP, Component Object Model, Corba, database connection's interfaces. Document Object Model, XML, XSL, dynamic extensions of HTML.
Advanced level of programming is expected.

Recommended literature:
Internet sources and specifications.

Course language:

Course assessment
Total number of assessed students: 68

A	B	C	D	E	FX
63.24	19.12	14.71	1.47	1.47	0.0

Provides: RNDr. Rastislav Krivoš-Belluš, PhD.

Date of last modification: 07.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

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: 6.	
Course level: I., II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	

Course assessment

Total number of assessed students: 138

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

Provides:
Date of last modification: 07.02.2017
Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ SWI1a/15	**Course name:** Software engineering

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

Number of credits: 2

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities: ÚINF/DBS1a/15 or ÚINF/DBdi/15

Conditions for course completion:

Learning outcomes:
To provide information concerning the principal activities related to the development of software products.

Brief outline of the course:
System, subsystem, software system. Software processes. Introduction to project management. Requirements gathering. Software modelilng. Software architectures. Software development methodologies. Verification and validation. Resource management.

Recommended literature:
1. BERKUN, S. The Art Of Project Management. O Reilly, 2005.
2. BJORNER, D. Software engineering 1,2,3. Springer-Verlag Berlin, 2006.
3. SOMMERVILLE, I. Software Engineering. Addison-Wesley, 2007.

Course language:

Course assessment
Total number of assessed students: 260

A	B	C	D	E	FX
16.15	18.08	20.0	20.77	23.85	1.15

Provides: doc. RNDr. Gabriel Semanišin, PhD., Mgr. Alexander Szabari, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ SWI1b/15	**Course name:** Software engineering

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: 5.

Course level: I.

Prerequisities: ÚINF/SWI1a/15

Conditions for course completion:

Learning outcomes:
To learn principles and to developed fundamental skills concerning software modelling, development and implementation.

Brief outline of the course:
Software modelling in UML - the syntax and the semantics of UML diagrams. Foundation of Model Driven Architecture. Selected aspects of project management. Selected legal aspects of SW engineering. Pattern design.

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 205

A	B	C	D	E	FX
43.41	16.1	14.15	9.76	15.61	0.98

Provides: Mgr. Alexander Szabari, PhD., doc. RNDr. Gabriel Semanišin, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/SXM1/15	**Course name:** Structure formats and representation of data

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: I.

Prerequisities:

Conditions for course completion:
Evaluation of partial assignments within larger project.
Evaluation of multiple assignments corresponding to learning blocks.

Learning outcomes:
Become acknowledged with theoretical concepts and methodologies with structured and semistructured data. Acquire programming skills with implementations of these concepts.

Brief outline of the course:
Representation of semi-structured data in XML, valid and well-formed XML document. XML parsers: DOM, SAX, StAX. Java API of XML parsers. Schemas for XML documents: DTD, XML Schema. Addressing in XML: XPath. Transformations of XML documents: XSLT. Other formats for semistructured data: JSON, YAML. API for data binding in Java: Jackson (JSON), SnakeYAML (YAML), JAXB (XML).

Recommended literature:
1. Eliotte "Rusty" Harold. XML Bible, Gold Edition. Wiley, 2001. ISBN 978-0764548192.
2. Grigoris Antoniou, Frank Van Harmelen. A Semantic Web Primer, Second Edition. MIT Press, 2008. ISBN 978-0262012423.
3. Michaek Kay. XSLT 2.0 Programmer's Reference, 3rd Edition. Wrox, 2004. ISBN: 978-076456909.

Course language:

Course assessment
Total number of assessed students: 37

A	B	C	D	E	FX
29.73	24.32	8.11	18.92	18.92	0.0

Provides: RNDr. František Galčík, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ TVP1/15	**Course name:** Testing and verification of programs

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: 6.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:
Verification of programs.
Introduction to a proving of program correctness. McCarthy function 91, a proof of a developed program correctness, basic definitions of partial and total program correctness. Mathematical background for a proving of program correctness. Predicate calculus, a repetition of a basic knowledge. Syntax, semantics, valid well-formed formulas, natural deduction, the resolution method.
Floyd method for a proving of program correctness. Flowchart programs, a proof of a partial correctness, a proof of a program termination.
Hoare method for a proving of program correctness. Programming language J0, axioms and the verification rules of Hoare axiomatic system, a partial and total correctness of programs, a program termination. Examples of proofs the partial and total correctness of programs.
****
Testing of programs.
SELENIUM IDE plugin to Firefox. Installation of the plugin. The sequence of steps by the first test. Automated start of prepared test. Possibilities of test corrections.
The class DefaultSelenium and its methods by test writing. Survey of the best methods in the class DefaultSelenium. Implementation of methods for tests writing.
Selenium server. Installation Selenium Sever. Communication with selenium server.
Loading tests. Causes of using loading tests. Jmeter as a one of possible loading tests.
Test Case. Input data for a program testing prepared according to a flowchart program.
SOnar. Survey of written code, mapping of duplicated procedures, misused procedures. Survey Junit Tests.

Recommended literature:
1. Frade, M. J., and Pinto, J. S.: Verification Conditions for Source-level Imperative Programs. Techn. Report DI-CCTC-08-01, 2008, Computer Science and Technology Center, Braga – Portugal
2. Manna, Z. and Pnueli, A.: Temporal Verification of Reactive Systems: Progress. Draft, 1996

3. Almeida, J, B., Frade, M. J., Pinto, J. S. and Melo de Sousa, S.: Rigorous Software Development: An Introduction to Program Verification, Springer Verlag, 2011.
4. Manna, Z.: Mathematical Theory of Computation, McGraw-Hill, 1974, Slovak translation: SNTL, Praha, 1981.

Course language:

Course assessment
Total number of assessed students: 25

A	B	C	D	E	FX
24.0	32.0	12.0	12.0	20.0	0.0

Provides: doc. RNDr. Gabriela Andrejková, CSc., Mgr. Alexander Szabari, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚTVŠ/ TVa/11	**Course name:** Sports Activities I.

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

Number of credits: 2

Recommended semester/trimester of the course: 1.

Course level: I., I.II., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 10457

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
88.25	0.0	0.0	0.0	0.0	0.02	7.81	3.92

Provides: Mgr. Peter Bakalár, PhD., Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, Mgr. Zuzana Küchelová, PhD., PaedDr. Jana Potočníková, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Aurel Zelko, PhD., Mgr. Marcel Čurgali, doc. PhDr. Ivan Šulc, CSc.

Date of last modification: 23.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚTVŠ/ TVb/11	**Course name:** Sports Activities II.

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

Number of credits: 2

Recommended semester/trimester of the course: 2.

Course level: I., I.II., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 9779

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
85.09	0.61	0.02	0.0	0.0	0.02	10.36	3.9

Provides: Mgr. Peter Bakalár, PhD., Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, Mgr. Zuzana Küchelová, PhD., PaedDr. Jana Potočníková, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Aurel Zelko, PhD., Mgr. Marcel Čurgali, doc. PhDr. Ivan Šulc, CSc.

Date of last modification: 23.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚTVŠ/ TVc/11	**Course name:** Sports Activities III.

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

Number of credits: 2

Recommended semester/trimester of the course: 3.

Course level: I., I.II., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 6188

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
89.66	0.03	0.0	0.0	0.0	0.0	4.36	5.95

Provides: PaedDr. Jana Potočníková, PhD., Mgr. Marcel Čurgali, Mgr. Peter Bakalár, PhD., Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Aurel Zelko, PhD., doc. PhDr. Ivan Šulc, CSc.

Date of last modification: 23.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚTVŠ/ TVd/11	**Course name:** Sports Activities IV.

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

Number of credits: 2

Recommended semester/trimester of the course: 4.

Course level: I., I.II., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 4644

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
85.66	0.32	0.04	0.0	0.0	0.0	6.61	7.36

Provides: Mgr. Marcel Čurgali, Mgr. Peter Bakalár, PhD., Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, Mgr. Zuzana Küchelová, PhD., PaedDr. Jana Potočníková, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Aurel Zelko, PhD., doc. PhDr. Ivan Šulc, CSc.

Date of last modification: 23.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ TYS1/15	**Course name:** Typographical systems

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

Number of credits: 2

Recommended semester/trimester of the course: 4., 6.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:
To provide the basic information on principles for typesetting of documents containing mathematical formulas in Plain TeX, AMS-TeX, and LaTeX.

Brief outline of the course:
Typesetting of a plain text, special text symbols, using of text fonts. TeX macros. Enumerations in text and footnote command. Parameter setting determining the appearance of the pages. Typesetting of mathematical formulas in text and displays, aligning formulas. Definitions of TeX macros. Making tables and pictures. Definitions, theorems, and proofs in a mathematical document. Contents, bibliography, sections in a document.

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 241

A	B	C	D	E	FX
46.89	18.67	19.92	6.64	7.05	0.83

Provides: doc. RNDr. Stanislav Krajči, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

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 / 2 **Per study period:** 28 / 28
Course method: present

Number of credits: 5

Recommended semester/trimester of the course: 3., 5.

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:

Course assessment
Total number of assessed students: 273

A	B	C	D	E	FX
14.65	8.79	13.55	23.08	30.77	9.16

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

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ UIB1/17	**Course name:** Introduction to information security

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 0 **Per study period:** 28 / 0
Course method: present

Number of credits: 3

Recommended semester/trimester of the course: 1., 3., 5.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 20

A	B	C	D	E	FX
55.0	25.0	10.0	0.0	5.0	5.0

Provides: RNDr. JUDr. Pavol Sokol, PhD.

Date of last modification: 11.03.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ UIN1/15	**Course name:** Introduction to study 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: 1.	
Course level: I.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	

Course assessment

Total number of assessed students: 189

A	B	C	D	E	FX
32.8	14.29	19.58	12.17	4.76	16.4

Provides: doc. RNDr. Stanislav Krajči, PhD., RNDr. Ondrej Krídlo, PhD.
Date of last modification: 09.02.2017
Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ UKA1/15	**Course name:** Introduction to cognitive algorithms

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

Number of credits: 4

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:
Overview of central nervous system and algorithms to describe it.

Brief outline of the course:
Overview of the cognitive processes in the human brain and of computational algorithms used to describe these processes.

Recommended literature:
1. Kopčo N (2011) Výpočtová neuroveda (Úvod do modelovania neurofyziologických a behaviorálnych dát), Vydavateľ: Technická univerzita v Košiciach.
2. Hertz J, Krogh A and Palmer RG: Introduction to the theory of neural computation. Addison-Wesley 1991
3. Dayan P and LF Abbott: Theoretical Neuroscience - Computational and Mathematical Modeling of Neural Systems. MIT Press, 2001

Course language:
english or slovak

Course assessment
Total number of assessed students: 0

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

Provides: doc. Ing. Norbert Kopčo, PhD., Ing. Beáta Tomoriová, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

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 / 2 **Per study period:** 28 / 28
Course method: present

Number of credits: 5

Recommended semester/trimester of the course: 3., 5.

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:

Course assessment
Total number of assessed students: 393

A	B	C	D	E	FX
9.92	16.03	23.66	20.87	24.68	4.83

Provides: doc. RNDr. Gabriela Andrejková, CSc., RNDr. Ľubomír Antoni, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ UNV1/15	**Course name:** Introduction to neurosciences

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., 5.

Course level: I.

Prerequisities:

Conditions for course completion:
Examination

Learning outcomes:
Introduction to anatomy and physiology of human brain, to cognitive processes corresponding to different mental functions, and to computational tools used in neuroscience.

Brief outline of the course:
Description of neural centers of basic cortical functions (visual, auditory, sensory and motor cortex, learning and memory). Basic physiological, psychological, psychophysical and computational methods used in neuroscience with focus on the application of computational tools for electrophysiological brain activity recording and imaging (e.g., magnetic resonance). Computational applications of neuroscience research.

Recommended literature:
1. Gazzaniga M. (ed.): The New Cognitive Neurosciences. 2nd ed. MIT Press. 1999
2. Dayan P and LF Abbott: Theoretical Neuroscience - Computational and Mathematical Modeling of Neural Systems. MIT Press, 2001
3. Stillings et al.: Cognitive Science: An Introduction, 2nd ed., MIT Press, 1995

Course language:
Slovak or English

Course assessment
Total number of assessed students: 19

A	B	C	D	E	FX
15.79	15.79	21.05	31.58	15.79	0.0

Provides: doc. Ing. Norbert Kopčo, PhD., Ing. Beáta Tomoriová, PhD.

Date of last modification: 07.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ UPF1/12	**Course name:** Introduction to Computational Physics

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: I.

Prerequisities:

Conditions for course completion:
Elaboration of microreferat on given topics.
Exam and discussion of the implementation of the given project.

Learning outcomes:
The aim of the lecture is to provide students with the physical background of the computational processes in conventional computers, as well as to provide less conventional possibilities to implement computational processes using deeper knowledge of physical processes.

Brief outline of the course:
Physical processes utilised in contemporary computers. Computational processes / thermodynamics point of view. Physical limits of current computer technologies (Moore, Amdahl laws
. Computer modeling and physical reality. Computational complexity and paralelism. Distributed computing. Alternative methods of computation (analogue , optical processors, DNA computing, quantum computing).

Recommended literature:
Actual literature provided by lecturer.

Course language:

Course assessment
Total number of assessed students: 26

A	B	C	D	E	FX
84.62	11.54	0.0	0.0	3.85	0.0

Provides: doc. RNDr. Jozef Uličný, CSc.

Date of last modification: 24.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ UPR1/15	**Course name:** Introduction to law for informatics

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: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 7

A	B	C	D	E	FX
0.0	28.57	0.0	28.57	42.86	0.0

Provides: RNDr. JUDr. Pavol Sokol, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: Dek. PF UPJŠ/USPV/13	**Course name:** Introduction to Study of Sciences
Course type, scope and the method: **Course type:** Lecture / Practice **Recommended course-load (hours):** **Per week: Per study period:** 12s / 3d **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course: 1.	
Course level: I.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Course assessment Total number of assessed students: 1136	

abs	n
91.37	8.63

Provides: doc. RNDr. Gabriel Semanišin, PhD.
Date of last modification: 13.02.2017
Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/VKBa/15	**Course name:** Selected topics in security of computer networks

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

Number of credits: 2

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 9

A	B	C	D	E	FX
66.67	22.22	11.11	0.0	0.0	0.0

Provides: doc. RNDr. Jozef Jirásek, PhD., RNDr. JUDr. Pavol Sokol, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ VKBb/15	**Course name:** Selected topics in security of computer networks

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

Number of credits: 2

Recommended semester/trimester of the course: 6.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 4

A	B	C	D	E	FX
75.0	0.0	0.0	0.0	0.0	25.0

Provides: doc. RNDr. Jozef Jirásek, PhD., RNDr. JUDr. Pavol Sokol, PhD.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ VMA1/15	**Course name:** Development of mobile applications
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: 6.	
Course level: I.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	

Course assessment

Total number of assessed students: 56

A	B	C	D	E	FX
51.79	5.36	8.93	7.14	1.79	25.0

Provides: RNDr. Róbert Novotný, PhD., RNDr. Miroslav Opiela
Date of last modification: 09.02.2017
Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/WBdi/15

Course name: Web and a development of user environment

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 0 / 3 **Per study period:** 0 / 42
Course method: present

Number of credits: 3

Recommended semester/trimester of the course: 1.

Course level: I.

Prerequisities:

Conditions for course completion:
Solving partial assignments and active participation in discussions in a virtual classroom.

Learning outcomes:
Create accessible and usable Web Sites, used the standards (X) HTML and CSS.
Apply the rules for the page layout.
Maintain website and use the basic procedures for their promotion.

Brief outline of the course:
Web Development using (X) HTML and CSS. Tools for web development. Standards of accessibility and usability of the web sites. Cycle of development web site and its promotion.

Recommended literature:
Basic sources for distance courses will be published in LMS Moodle.
TITTEL, Ed a Jeff NOBLE. HTML, XHTML & CSS. 7th ed. Hoboken, NJ: Wiley, c2011, xx, 392 p. --For dummies. ISBN 04-709-1659-1.
KRUG, Steve. Nenuťte uživatele přemýšlet!: praktický průvodce testováním a opravou chyb použitelnost webu. Vyd. 1. Brno: Computer Press, 2010, 165 s. ISBN 978-80-251-2923-4.
Slovensko. Výnos Ministerstva financií Slovenskej republiky z 9. júna 2010 o štandardoch pre informačné systémy verejnej správy. In: 312/2010. 2010. Dostupné z: http://informatizacia.sk/ext_dok-vynos_a_prilohy_2010-312/7431c

Course language:
slovak

Course assessment
Total number of assessed students: 94

A	B	C	D	E	FX
13.83	9.57	9.57	19.15	24.47	23.4

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

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ ZBSIM/13	**Course name:** Basics of Molecular Simulation

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

Number of credits: 4

Recommended semester/trimester of the course: 4., 6.

Course level: I.

Prerequisities:

Conditions for course completion:
Written test and elaboration of referate.
Exam.

Learning outcomes:
Introducttion to the principles of computational simulations of biomolecular objects from point of view of komplex IT application in practice.

Brief outline of the course:
Essential structural characteristics of biomolecules. Foldamers - the definition and its importance. Computational predictions of folding as optimization problem. Propagators - algorithms for the time evolution and their use in molecular dynamics. Monte Carlo methods - algorithms and paralelisation. Computational challenges of biomolecular simulations - description of chemical reactions, free energy evaluation, protein folding. Simulations of rare events. Computational complexity, less traditional optimization techniques and heuristics.

Recommended literature:
- Schlick, Tamar. Molecular Modeling and Simulation. 1st ed. Springer, 2002.
- Allen, M. P., and D. J. Tildesley. Computer Simulation of Liquids. Oxford University Press, USA, 1989.

Course language:

Course assessment
Total number of assessed students: 2

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

Provides: doc. RNDr. Jozef Uličný, CSc.

Date of last modification: 24.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ZIV1/16	**Course name:** Internet of Things

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 0 / 2 **Per study period:** 0 / 28
Course method: present

Number of credits: 2

Recommended semester/trimester of the course: 4., 6.

Course level: I.

Prerequisities: ÚINF/PAZ1a/15 and ÚINF/JAC1/15

Conditions for course completion:

Learning outcomes:

Brief outline of the course:
The course focuses on basic concepts and current trends in the area of Internet of Things (IoT). We emphasize its interdisciplinary and relationship to other traditional areas of computer science. The course includes an introduction to programming of IoT devices (sensors, low-level protocols, development platforms, single-board computers, etc.), an overview of communication and network technologies (Bluetooth LE, WiFi, LoRa, etc.), demonstrations of application and data protocols (MQTT, CoAP, AMQP, Websocket, ...), patterns and use-cases of design and implementation of IoT solutions.

Recommended literature:

Course language:

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: RNDr. František Galčík, PhD., RNDr. Miroslav Opiela

Date of last modification: 09.03.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ ZTC1/15	**Course name:** Basic methods in chaos theory

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

Number of credits: 4

Recommended semester/trimester of the course: 6.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 6

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

Provides: doc. Ing. Štefánia Gallová, CSc.

Date of last modification: 09.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ ZTSP/16	**Course name:** Essentials of the SAP Technology

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 0 / 2 **Per study period:** 0 / 28
Course method: present

Number of credits: 2

Recommended semester/trimester of the course: 3., 5.

Course level: I., N

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:
Defining mySAP Technology (Products, Innovations provided by SAP), Navigation (Logon, Screen Design, Calling Functions), System Kernel (Client/Server Architecture, Structure of an SAP system, Processing in SAP), Communication and Integration Technologies (Remote Function Calls, Internet Technologies).

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 85

abs	n
97.65	2.35

Provides: Ing. Slávka Šimková, PhD.

Date of last modification: 23.02.2017

Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚTVŠ/ ÚTVŠ/CM/13	**Course name:** Seaside Aerobic Exercise
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: 2	
Recommended semester/trimester of the course:	
Course level: I., II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Course assessment Total number of assessed students: 15	

abs	n
26.67	73.33

Provides: Mgr. Alena Buková, PhD., Mgr. Agata Horbacz, PhD.
Date of last modification: 23.02.2017
Approved: Guaranteedoc. RNDr. Gabriel Semanišin, PhD.