

Course descriptions

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COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KEF/2-FTL-204/15		Course title: Diagnostic Methods in Solid State Physics			
Educational activities: Type of activities: lecture Number of hours: per week: 4 per level/semester: 56 Form of the course: on-site learning					
Number of credits: 6					
Recommended semester: 3.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 27					
A	B	C	D	E	FX
66,67	25,93	3,7	3,7	0,0	0,0
Lecturers: prof. RNDr. Andrej Plecenik, DrSc., doc. RNDr. Miroslav Zahoran, CSc., doc. Ing. Maroš Gregor, PhD., doc. RNDr. Tomáš Plecenik, PhD., doc. RNDr. Tomáš Roch, Dr., Mgr. Leonid Satrapinskyy, PhD.					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KEF/2-FTL-920/15		Course title: Diploma Thesis Seminar			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 4.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 14					
A	B	C	D	E	FX
71,43	7,14	14,29	7,14	0,0	0,0
Lecturers: prof. RNDr. Peter Kúš, DrSc.					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KEF/2-FTL-991/15	Course title: Diploma Thesis and its Defense
Number of credits: 25	
Educational level: II.	
State exam syllabus:	
Last change:	
Approved by: prof. RNDr. Peter Kúš, DrSc.	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KEF/2-FTL-108/15	Course title: Electric and Optical Properties of Solid Materials
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 4 / 2 per level/semester: 56 / 28 Form of the course: on-site learning	
Number of credits: 8	
Recommended semester: 2.	
Educational level: II.	
Prerequisites:	
Recommended prerequisites: 2-FOL-117 Introduction to solid state physics	
Course requirements: homeworks + oral exam A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 55/45	
Learning outcomes: The students will understand the impact of defects and interaction effects on electronic properties of solids. They will know basic techniques for band structure determination. They will learn the second quantization method and basics of linear response theory. They will understand what kind of information on solids can be gained by optical methods.	
Class syllabus: Band structure of silicon. Semiclassical dynamics of electrons. Hall effect and cyclotron resonance. de Haas-van Alphen effect. Quantum Hall effect. Influence of disorder on electronic states. Anderson localization in one-dimensional wires. Many-body problem and the Hartree-Fock approximation. Second quantization. Coulomb gas of electrons. The Wigner, Mott, and Hubbard metal-insulator transition. Electron-phonon coupling. Dielectric function. Clausius-Mossotti formula and polarization catastrophe. Linear response theory. Interband transitions, excitons. Luminescence and the Franck-Condon effect. Scattering of light. Photoemission.	
Recommended literature: Condensed matter physics : Corrected printing / Michael P. Marder. New York : John Wiley, 2000	
Languages necessary to complete the course: english	
Notes:	

Past grade distribution					
Total number of evaluated students: 23					
A	B	C	D	E	FX
52,17	13,04	8,7	4,35	21,74	0,0
Lecturers: doc. RNDr. Richard Hlubina, DrSc.					
Last change: 18.10.2016					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KEF/2-FTL-115/15		Course title: Electronic Components and Circuits			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 4 / 2 per level/semester: 56 / 28 Form of the course: on-site learning					
Number of credits: 8					
Recommended semester: 2.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 24					
A	B	C	D	E	FX
50,0	37,5	12,5	0,0	0,0	0,0
Lecturers: doc. RNDr. František Kundracik, CSc., doc. RNDr. Michal Mahel', CSc., prof. RNDr. Andrej Plecenik, DrSc.					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJP/1-MXX-233/13		Course title: English Conversation Course (1)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 1., 3.					
Educational level: I., II.					
Prerequisites:					
Course requirements: Scale of assessment (preliminary/final): 100/0					
Learning outcomes:					
Class syllabus: The content of the course is general English. The language level is B2/C1 (Upper-Intermediate/Lower Advanced).					
Recommended literature: Selection of materials from Inside Out Upper-Intermediate, Cutting Edge Upper-Intermediate, New English File Upper-Intermediate, British and American newspapers and journals Recordings: authentic and semi-authentic (source: BBC, CNN, coursebook recordings)					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 144					
A	B	C	D	E	FX
59,72	18,06	9,03	2,08	1,39	9,72
Lecturers: PhDr. Elena Klátiková					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJP/1-MXX-234/13		Course title: English Conversation Course (2)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 2., 4.					
Educational level: I., II.					
Prerequisites:					
Course requirements: Scale of assessment (preliminary/final): 100/0					
Learning outcomes:					
Class syllabus: The course is a follow-up to the Conversation Course in English (1). The content of the course is general English. The language level is B2/C1 (Upper-Intermediate/Lower Advanced).					
Recommended literature: Selection of materials from Inside Out Upper-Intermediate, Cutting Edge Upper-Intermediate, New English File Upper-Intermediate, British and American newspapers and journals Recordings: authentic and semi-authentic (source: BBC, CNN, coursebook recordings)					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 78					
A	B	C	D	E	FX
64,1	20,51	6,41	1,28	0,0	7,69
Lecturers: PhDr. Elena Klátiková					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJP/1-MXX-141/00		Course title: French Language (1)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 1.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: French language is taught at two levels: beginner and intermediate. Students opt for one of them depending on whether they wish to obtain the fundamentals of the language or wish to maintain and/or improve previous knowledge of French.					
Recommended literature: Pravda, Pravdová: Učebnica francúzštiny pre samoukov a kurzy, SPN Bratislava 1999, ISBN 80-08-00431-2					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 387					
A	B	C	D	E	FX
41,09	21,96	21,19	9,82	2,07	3,88
Lecturers: Mgr. Ľubomíra Kožehubová					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJP/1-MXX-142/00		Course title: French Language (2)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 2.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The subject continues the program of French language (1) and provides courses of essential and intermediate French language.					
Recommended literature: Pravda, Pravdová: Učebnica francúzštiny pre samoukov a kurzy, SPN Bratislava 1999, ISBN 80-08-00431-2 Blažena Srncová: Učebnica francúzštiny pre študentov Matematicko-fyzikálnej fakulty , UK 1983 Kolektív Lingea, s.r.o.: Slovensko-francúzsky hovorník, Bratislava 2008					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 247					
A	B	C	D	E	FX
36,03	26,72	21,05	10,93	2,83	2,43
Lecturers: Mgr. Ľubomíra Kožehubová					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJP/1-MXX-241/00		Course title: French Language (3)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 3.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The subject provides a course of intermediate French language, covering not only general, but also technical language.					
Recommended literature: Pravda, Pravdová: Učebnica francúzštiny pre samoukov a kurzy, SPN Bratislava 1999, ISBN 80-08-00431-2 Blažena Srncová: Učebnica francúzštiny pre študentov Matematicko-fyzikálnej fakulty , UK 1983 Kolektív Lingea, s.r.o.: Slovensko-francúzsky hovorník, Bratislava 2008					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 97					
A	B	C	D	E	FX
36,08	28,87	22,68	7,22	1,03	4,12
Lecturers: Mgr. Ľubomíra Kožehubová					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJP/1-MXX-242/00		Course title: French Language (4)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 4.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The subject provides a course of intermediate French covering not only general, but also technical French language.					
Recommended literature: Pravda, Pravdová: Učebnica francúzštiny pre samoukov a kurzy, SPN Bratislava 1999, ISBN 80-08-00431-2 Blažena Srncová: Učebnica francúzštiny pre študentov Matematicko-fyzikálnej fakulty , UK 1983 Kolektív Lingea, s.r.o.: Slovensko-francúzsky hovorník, Bratislava 2008 Zarha Lahmidi: Sciences-techniques.com, ISBN 209-0331186-0, CLE international, 2005					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 68					
A	B	C	D	E	FX
36,76	35,29	19,12	2,94	1,47	4,41
Lecturers: Mgr. Ľubomíra Kožehubová					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJP/1-MXX-151/00		Course title: German Language (1)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 1.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: German language is taught at three levels: beginner, intermediate and advanced. Students opt for one of them depending on whether they need to learn the fundamentals or maintain and/or improve their previous knowledge.					
Recommended literature: Vilášek, P.: Nemčina pre študentov FMFI, Na webovej stránke autora v elektronickej podobe.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 666					
A	B	C	D	E	FX
32,28	29,13	21,17	9,91	2,85	4,65
Lecturers: Mgr. Alexandra Maďarová, Mgr. Marián Mancovič					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJP/1-MXX-152/00		Course title: German Language (2)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 2.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The course continues the program of German language (1). German language is taught at three levels: beginner, intermediate, advanced.					
Recommended literature: Vilášek, P.: Nemčina pre študentov FMFI, Na webovej stránke autora v elektronickej podobe.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 423					
A	B	C	D	E	FX
30,5	21,99	22,93	14,66	3,78	6,15
Lecturers: Mgr. Alexandra Maďarová, Mgr. Marián Mancovič					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJP/1-MXX-251/00		Course title: German Language (3)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 3.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The subject continues the program of German language (2). It provides a course of intermediate and advanced German language.					
Recommended literature: Vilášek, P.: Nemčina pre študentov FMFI, Na webovej stránke autora v elektronickej podobe. Aus moderner Technik und Naturwissenschaft, 1999, Max Hueber Verlag, D-85737, ISBN 3-19-001629-1					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 150					
A	B	C	D	E	FX
38,0	28,0	22,0	6,67	2,67	2,67
Lecturers: Mgr. Alexandra Maďarová, Mgr. Marián Mancovič					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJP/1-MXX-252/00		Course title: German Language (4)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 4.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The subject continues the program of German language (3). It provides a course of intermediate and advanced German language.					
Recommended literature: Vilášek, P.: Nemčina pre študentov FMFI, Na webovej stránke autora v elektronickej podobe. Vilma Václavíková: Nemčina pre študentov MFF UK, Vysokoškolský učebný text pre potrebu študentov KJP, č. 9793/1982 C VIII/2, 1983					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 78					
A	B	C	D	E	FX
35,9	28,21	14,1	12,82	3,85	5,13
Lecturers: Mgr. Alexandra Maďarová, Mgr. Marián Mancovič					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KEF/2-FTL-117/15		Course title: Laboratory Practice in Electronics and Solid State Physics			
Educational activities: Type of activities: laboratory practicals Number of hours: per week: 3 per level/semester: 42 Form of the course: on-site learning					
Number of credits: 4					
Recommended semester: 2.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 23					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: doc. RNDr. František Kundracik, CSc., RNDr. Ján Greguš, PhD., doc. RNDr. Michal Mahel', CSc.					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KEF/2-FTL-203/15		Course title: Magnetic Properties of Solid Substances and Superconductivity			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 4 / 2 per level/semester: 56 / 28 Form of the course: on-site learning					
Number of credits: 8					
Recommended semester: 3.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 17					
A	B	C	D	E	FX
76,47	0,0	5,88	5,88	11,76	0,0
Lecturers: doc. RNDr. Michal Mahel', CSc.					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KEF/2-FTL-205/15		Course title: Many-body Physics			
Educational activities: Type of activities: lecture Number of hours: per week: 4 per level/semester: 56 Form of the course: on-site learning					
Number of credits: 6					
Recommended semester: 3.					
Educational level: II.					
Prerequisites: FMFI.KEF/2-FTL-108/15 - Electric and Optical Properties of Solid Materials					
Recommended prerequisites: 2-FTL-107 Structure and mechanical properties of solids 2-FTL-108 Electronic and optical properties of solids					
Course requirements: oral exam: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 0/100					
Learning outcomes: The students will have a deeper understanding of the notions vacuum and elementary excitation. They will understand how spontaneous symmetry breaking and its defects determine physical properties of condensed matter.					
Class syllabus: Spontaneous symmetry breaking, generalized rigidity, Goldstone modes, topological defects. Quantum magnetism. Superfluidity: basic experimental facts, properties of condensate, Bogoliubov theory. Superconductivity: basic experimental facts, effective model, BCS theory.					
Recommended literature: Statistical mechanics : Entropy, order parameters, and complexity / James P. Sethna. Oxford : Oxford University Press, 2006 Condensed matter physics : Corrected printing / Michael P. Marder. New York : John Wiley, 2000					
Languages necessary to complete the course: english					
Notes:					
Past grade distribution Total number of evaluated students: 10					
A	B	C	D	E	FX
50,0	20,0	20,0	0,0	10,0	0,0
Lecturers: doc. RNDr. Richard Hlubina, DrSc.					

Last change: 18.10.2016
Approved by: prof. RNDr. Peter Kúš, DrSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KEF/2-FTL-114/00		Course title: Measuring Techniques in Solid State Physics			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 1.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Measurement methods of electrical and magnetic properties of materials (probe methods, phase sensitive methods, method of Van der Pauw). Measurements of Hall phenomena, relaxation times of charge carriers by electric and optics methods. Measuremnts of nanovolt electrical signals. Measument of basic physical per-unit values (pressure, temperature, lenght, mass,...)					
Recommended literature: J.Brož a kol., Základy fisikálních měření I A,B a II A,B, Státní pedagogické nakladatelství, Praha (1974). R.Morrison, Grounding and Schilding Techniques, 4th. Ed.John Wiley & Sons, New York (1998) ISBN 0-471-24518-6					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 39					
A	B	C	D	E	FX
56,41	23,08	17,95	2,56	0,0	0,0
Lecturers: doc. RNDr. Tomáš Plecenik, PhD.					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFLKEF/2-FTL-224/15		Course title: Mesoscopic Physics and Quantum Electronics			
Educational activities: Type of activities: lecture Number of hours: per week: 4 per level/semester: 56 Form of the course: on-site learning					
Number of credits: 6					
Recommended semester: 3.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 11					
A	B	C	D	E	FX
54,55	27,27	18,18	0,0	0,0	0,0
Lecturers: doc. RNDr. Martin Moško, DrSc.					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KEF/2-FEL-203/00		Course title: Microprocessor Systems			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 3.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Central processing unit (internal structure, registers, ALU). Instructions (format, variety, arguments). Communication with peripheral devices, interfaces, drivers. Programming (machine code, assembler). Command overview with respect to different applications. Side effects, program debugging. Typical machine code structures.					
Recommended literature: Frištacký a kol. Logické systémy, Alfa 1986, http://www.sandpile.org/ The world's leading source for pure technical x86 processor information http://www.brookscole.com/ The analytical Engine Online					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 71					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: doc. RNDr. František Kundracik, CSc.					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KTV/2-MXX-110/00		Course title: Physical Education and Sport (1)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 1.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Practicing of the students' game skills in collective sports: basketball, volleyball, football, floorball and hockey. Mastering of the basic technique of a particular sport discipline in other sports. In paddling, basic training on still and slightly flowing water. Development of coordination skills, improvement of articular mobility and cardiovascular system.					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 1433					
A	B	C	D	E	FX
99,16	0,56	0,0	0,0	0,0	0,28
Lecturers: PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Ondrej Podkonický, Mgr. Jana Leginusová, Mgr. Tomáš Kuchár, PhD., PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KTV/2-MXX-120/00		Course title: Physical Education and Sport (2)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 2.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Practicing of offensive and defensive game combinations and playing with modified rules in collective sports such as basketball, volleyball, football, floorball, hockey. Command of elements of higher difficulty in locomotion skills (swimming - crawl stroke, breast stroke, butterfly stroke, trampoline jumping and aerobics – practicing of areobics compositions, bodybuilding – development of the main muscle groups, paddling on running water. Testing of the level of physical fitness and coordination skills.					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 1331					
A	B	C	D	E	FX
99,77	0,08	0,0	0,08	0,0	0,08
Lecturers: Mgr. Martin Dovičák, PhD., Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Branislav Nedbálek, PaedDr. Mikuláš Ortutay, Mgr. Ondrej Podkonický, Mgr. Júlia Raábová, PhD.					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KTV/2-MXX-210/00		Course title: Physical Education and Sport (3)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 3.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: To improve offensive and defensive game combinations in collective sports. Practicing of tactical and technical elements in individual sports. Compensatory exercises to correct wrong body posture. Stretching. Competition rules in sport disciplines.					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 1081					
A	B	C	D	E	FX
99,44	0,37	0,0	0,0	0,0	0,19
Lecturers: PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Ondrej Podkonický, Mgr. Jana Leginusová, Mgr. Tomáš Kuchár, PhD., PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KTV/2-MXX-220/00		Course title: Physical Education and Sport (4)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 4.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Sport training for Faculty Championships in a selected sport with modified rules. Selection of sport-talented students into teams of the Faculty Sport League, University League of Bratislava Faculties, and participation in sport events of the Faculty and University.					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 957					
A	B	C	D	E	FX
99,37	0,42	0,0	0,0	0,1	0,1
Lecturers: PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Ondrej Podkonický, Mgr. Jana Leginusová, Mgr. Tomáš Kuchár, PhD., PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Branislav Nedbálek, Mgr. Júlia Raábová, PhD.					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KTF/2-FTF-113/00		Course title: Quantum Field Theory			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 4 / 2 per level/semester: 56 / 28 Form of the course: on-site learning					
Number of credits: 8					
Recommended semester: 1.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: 1. introduction 2. Free field 3. Interacting fields 4. Funktional methods					
Recommended literature: M.Mojžiš, Quantum Field Theory (elektronické štúdijné materiály) M.E.Peskin and D.V.Schroeder: An Introduction to Quantum Field Theory					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 89					
A	B	C	D	E	FX
66,29	19,1	8,99	0,0	5,62	0,0
Lecturers: doc. RNDr. Martin Mojžiš, PhD.					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJP/1-MXX-161/00		Course title: Russian Language (1)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 1.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The subject provides a course in Russian language for beginners.					
Recommended literature: The textbook has not been published. It is at students' disposal in an electronic format.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 654					
A	B	C	D	E	FX
60,4	15,9	10,09	4,74	1,83	7,03
Lecturers: PhDr. Elena Klátiková					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJP/1-MXX-162/00		Course title: Russian Language (2)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 2.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The subject continues the program of Russian language (1) and provides a course of Russian for beginners.					
Recommended literature: The textbook has not been published. It is at students' disposal in an electronic format.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 399					
A	B	C	D	E	FX
65,66	15,79	9,02	4,01	1,0	4,51
Lecturers: PhDr. Elena Klátiková					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJP/1-MXX-261/00		Course title: Russian Language (3)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 3.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The course "Russian for Intermediate Students" is a follow-up to "Russian for Beginners". The subject of the course is general Russian in the range appropriate to the given level.					
Recommended literature: The textbook has not been published. It is at students' disposal in an electronic format.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 196					
A	B	C	D	E	FX
70,41	17,35	8,67	2,55	0,0	1,02
Lecturers: PhDr. Elena Klátiková					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJP/1-MXX-262/00		Course title: Russian Language (4)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 4.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The course "Russian for Intermediate Students" is a follow-up to "Russian for Beginners". The subject of the course is general Russian in the range appropriate to the given level.					
Recommended literature: The textbook has not been published. It is at students' disposal in an electronic format.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 138					
A	B	C	D	E	FX
75,36	13,04	7,25	2,9	0,72	0,72
Lecturers: PhDr. Elena Klátiková					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KTF/2-FTF-114/00		Course title: Selected Parts of Advanced Statistical Physics			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 4 / 2 per level/semester: 56 / 28 Form of the course: on-site learning					
Number of credits: 8					
Recommended semester: 2.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Mathematical statistics, elements of information theory, general formalism of quantum statistical physics, numerical methods, variation principles, phase transitions, spin models, kinetic equations, transport phenomena, theory of fluctuations, random processes.					
Recommended literature: F.Reif:Fundamentals of statistical and thermal physics F.Čulík, M.Noga: Úvod do štatistickej fyziky a termodynamiky					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 86					
A	B	C	D	E	FX
65,12	30,23	0,0	1,16	3,49	0,0
Lecturers: doc. RNDr. Vladimír Černý, CSc.					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KEF/2-FTL-109/15		Course title: Selected Technologies in Solid-state Physics			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 1 per level/semester: 28 / 14 Form of the course: on-site learning					
Number of credits: 4					
Recommended semester: 1.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 16					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: doc. Ing. Marián Mikula, PhD., Mgr. Branislav Grančič, PhD., Mgr. Leonid Satrapinsky, PhD.					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KEF/2-FTL-121/15		Course title: Semester Project (1)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 1.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 9					
A	B	C	D	E	FX
77,78	11,11	0,0	0,0	0,0	11,11
Lecturers: prof. RNDr. Peter Kúš, DrSc.					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KEF/2-FTL-122/15		Course title: Semester Project (2)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 2.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 10					
A	B	C	D	E	FX
90,0	0,0	10,0	0,0	0,0	0,0
Lecturers: prof. RNDr. Peter Kúš, DrSc.					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KEF/2-FTL-221/15		Course title: Semester Project (3)			
Educational activities: Type of activities: practicals Number of hours: per week: 4 per level/semester: 56 Form of the course: on-site learning					
Number of credits: 5					
Recommended semester: 3.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 9					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: prof. RNDr. Peter Kúš, DrSc.					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KEF/2-FTL-954/15	Course title: Solid State Physics
Number of credits: 4	
Educational level: II.	
State exam syllabus:	
Last change: 06.06.2017	
Approved by: prof. RNDr. Peter Kúš, DrSc.	

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KTV/2-MXX-115/17		Course title: Sports in Natur (1)			
Educational activities: Type of activities: Number of hours: per week: per level/semester: Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 1.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 30					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: Mgr. Branislav Nedbálek					
Last change:					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KTV/2-MXX-116/18		Course title: Sports in Natur (2)			
Educational activities: Type of activities: Number of hours: per week: per level/semester: Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 2.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 9					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: Mgr. Branislav Nedbálek					
Last change:					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KEF/2-FTL-107/15		Course title: Structure and Mechanical Properties of Solids			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 4 / 2 per level/semester: 56 / 28 Form of the course: on-site learning					
Number of credits: 8					
Recommended semester: 1.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 27					
A	B	C	D	E	FX
66,67	11,11	11,11	7,41	3,7	0,0
Lecturers: prof. Ing. Roman Martoňák, DrSc., Mgr. Ondrej Tóth					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KEF/2-FTL-110/15		Course title: Use of Computer Simulations in Condensed-matter Physics			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 3 / 3 per level/semester: 42 / 42 Form of the course: on-site learning					
Number of credits: 8					
Recommended semester: 1.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 12					
A	B	C	D	E	FX
66,67	16,67	8,33	8,33	0,0	0,0
Lecturers: prof. RNDr. Peter Markoš, DrSc., doc. Mgr. Jozef Kristek, PhD., prof. Ing. Roman Martoňák, DrSc.					
Last change: 12.09.2016					
Approved by: prof. RNDr. Peter Kúš, DrSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KEF/2-FFP-109/15		Course title: Vacuum Physics and Technique			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 1 per level/semester: 28 / 14 Form of the course: on-site learning					
Number of credits: 4					
Recommended semester: 1.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 26					
A	B	C	D	E	FX
88,46	11,54	0,0	0,0	0,0	0,0
Lecturers: prof. Dr. Štefan Matejčík, DrSc., Mgr. Michal Stano, PhD.					
Last change: 02.06.2015					
Approved by: prof. RNDr. Peter Kúš, DrSc.					