

Course descriptions

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COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-204/15		Course title: Applied Nuclear Physics			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 3 / 1 per level/semester: 42 / 14 Form of the course: on-site learning					
Number of credits: 5					
Recommended semester: 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: 32					
A	B	C	D	E	FX
50,0	25,0	9,38	6,25	6,25	3,13
Lecturers: doc. RNDr. Karol Holý, CSc., RNDr. Radoslav Böhm, PhD.					
Last change: 02.06.2015					
Approved by:					

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KJFB/2-FJF-957/15	Course title: Applied Nuclear Physics
Number of credits: 2	
Educational level: II.	
State exam syllabus:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-238/00		Course title: Biological Effects of Ionizing Radiation			
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: The temporal course of radiation effects. Cellular and subcellular radiobiology. Theories and models for cell survival. Radiation effects of particles with high linear energy transfer (LET, Bragg peak, dependence RBE on LET, direct and indirect action, fractionation of exposure). Late effects of radiation on tissue (stochastic and nonstochastic effects). Radiation biology of normal and neoplastic tissue systems.					
Recommended literature: Alpen E.L.: Radiation Biophysics, Academic Press, San Diego, 1998 Nias A.H.W.: An introduction to radiobiology, Wiley, Chichester, 2000 Alberts B., Bray D., Lewis J., Raff M., Roberts K., Watson J.D.: Molecular Biology of the Cell, Garland Publ., NY 1994					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 10					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: RNDr. Radoslav Böhm, PhD.					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJFB/2-FJF-230/15		Course title: Computer Networks			
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:					
Antirequisites: FMFI.KJFB/2-FJF-230/00					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 1					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: prof. RNDr. Stanislav Tokár, DrSc., RNDr. Tibor Ženiš, PhD.					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJFB/2-FJF-236/00		Course title: Detection Methods in High Energy 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: 3.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Detectors for high energy physics. Magnetic spectrometers. Detectors used in colliders. Gas tracking detectors: proportional, drift and streamer chambers. Vertex detectors. Semiconductor and scintillating detectors. Gas coordinat detectors. Metods for particle identification. Measurements of ionization losses in the gas. Čerenkov detectors a hodoscopes. RIČH detectors. Transition radiation detectors. Callorimeters: electromagnetic and hadron.					
Recommended literature: S.Usačev a kol. Experimentálna jadrová fyzika, SNTL, Bratislava, 1982 I.Úlehla, M.Suk, Z.Trka: Atomy, jadra, častice, Academie, Praha, 1990 B.Sitár, G.I.Merzon, V.A.Chechin, Yu.A.Budagov: Ionization measurements in high Energy physics. Springer Verlag, Berlin, Heidelberg, 1993 C.Grupen: Particle detectors. London, 1996.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 42					
A	B	C	D	E	FX
69,05	21,43	4,76	4,76	0,0	0,0
Lecturers: Mgr. Michal Mereš, PhD.					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-910/00		Course title: Diploma Thesis (1)			
Educational activities: Type of activities: independent work Number of hours: per week: 3 per level/semester: 42 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 2.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Student works according to instructions given by his/her diploma supervisor.					
Recommended literature: Recommended by diploma supervisor.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 78					
A	B	C	D	E	FX
89,74	5,13	5,13	0,0	0,0	0,0
Lecturers: prof. RNDr. Jozef Masarik, DrSc.					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-911/00		Course title: Diploma Thesis (2)			
Educational activities: Type of activities: independent work Number of hours: per week: 5 per level/semester: 70 Form of the course: on-site learning					
Number of credits: 5					
Recommended semester: 3.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Student works according to instructions given by his/her diploma supervisor.					
Recommended literature: Recommended by diploma supervisor.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 76					
A	B	C	D	E	FX
89,47	5,26	5,26	0,0	0,0	0,0
Lecturers: prof. RNDr. Jozef Masarik, DrSc.					
Last change: 02.06.2015					
Approved by:					

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KJFB/2-FJF-991/16	Course title: Diploma Thesis Defense
Number of credits: 16	
Educational level: II.	
State exam syllabus:	
Last change:	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-920/00		Course title: Diploma Thesis Seminar (1)			
Educational activities: Type of activities: seminar Number of hours: per week: 1 per level/semester: 14 Form of the course: on-site learning					
Number of credits: 1					
Recommended semester: 2.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The first public presentation of the diploma thesis, formulation of the aims of the diploma thesis and the chosen way of realisation. Concluding analysis of the seminar talk. Methodical advancement at the preparation of the structure and duration of the given seminar thesis, the use of references and possible ways to obtain needed informations.					
Recommended literature: According to the given diploma thesis.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 78					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: prof. RNDr. Jozef Masarik, DrSc.					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-921/00		Course title: Diploma Thesis Seminar (2)			
Educational activities: Type of activities: seminar Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 3.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Common principles how to write a scientific particle, particularly a diploma thesis. Graifcal arrangement, segmentation, correct use of references etc. Seminar talk in a given time-frame, the use of different techniques at presentation. Concluding evaluation of the presented talk.					
Recommended literature: According to the given diploma thesis.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 78					
A	B	C	D	E	FX
98,72	0,0	0,0	0,0	1,28	0,0
Lecturers: prof. RNDr. Jozef Masarik, DrSc.					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJFB/2-FJF-922/00		Course title: Diploma Thesis Seminar (3)			
Educational activities: Type of activities: seminar Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 4.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: To prepare the diploma thesis in the form, which is commonly used for this type of scientific publications. Analyses of the diploma thesis presentation, recommendations for eventual corrections, modifications and structure of the text, figure and table insertion and conformity with the text etc. Common principles and recommendations to present the diploma thesis at the session of the examination committee in 15 – 20 min time limit.					
Recommended literature: The given diploma thesis.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 77					
A	B	C	D	E	FX
98,7	0,0	0,0	0,0	1,3	0,0
Lecturers: prof. RNDr. Jozef Masarik, DrSc.					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJFB/2-FJF-103/15		Course title: Elementary Particle 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: 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: 31					
A	B	C	D	E	FX
67,74	19,35	6,45	6,45	0,0	0,0
Lecturers: prof. RNDr. Jozef Masarik, DrSc., Mgr. Pavol Bartoš, PhD.					
Last change: 02.06.2015					
Approved by:					

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: 193					
A	B	C	D	E	FX
65,28	13,99	7,25	2,07	1,55	9,84
Lecturers: PhDr. Elena Klátiková, Mgr. Aneta Barnes					
Last change: 02.06.2015					
Approved by:					

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: 118					
A	B	C	D	E	FX
73,73	15,25	4,24	0,85	0,0	5,93
Lecturers: PhDr. Elena Klátiková, Mgr. Aneta Barnes					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-114/15		Course title: Experimental Methods in Nuclear Physics (1)			
Educational activities: Type of activities: lecture Number of hours: per week: 4 per level/semester: 56 Form of the course: on-site learning					
Number of credits: 6					
Recommended semester: 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: 35					
A	B	C	D	E	FX
22,86	22,86	25,71	14,29	14,29	0,0
Lecturers: doc. RNDr. Ivan Sýkora, PhD.					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-105/00		Course title: Experimental Methods in Nuclear Physics (2)			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 2.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Specifics of the nuclear physics measurements, the base structure of the measuring equipment, the detector response function, energy resolution (limits, Fano factor), time characteristics (pile-up, the spectrum distortion). Magnetic methods of spectrometry, using magnetic field to separation of particle beam, the magnetic field focustion, the classification of the spectrometers. Ionization methods of charge particles spectrometry, ionization chamber with grid, principles of using the proportional counters, semiconductors detectors in the spectrometry, detectors with compensation and HPGe detectors. Scintillation spectrometry methods, treating of instrumental spectra, peak efficiency, multiple detectors gamma-ray spectrometry. The high resolution spectrometer electronic circuits scheme. The liquid scintillation spectrometry applications (3H a 14C analysis). Applications scintillations methods in radionuclide diagnostics (gammagraphic methods and PET, principles of imaging using the thin scintillator)					
Recommended literature: Usačev S., a kol.: Experimentálna jadrová fyzika, ALFA Bratislava, 1982 Abramov A. I.: Osnovy experimentalnykh metodov jadernoj fiziky, Atmizdat Moskva 1980 W.R. Leo, Techniques for nuclear and particle physics, Springer Verlag, Berlin, 1996 K. Debertin and R.G. Helmer: Gamma-and X-ray spectrometry with semiconductor detctors, North-Holland, Amsterdam, 1988					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 78					
A	B	C	D	E	FX
33,33	21,79	21,79	16,67	3,85	2,56
Lecturers: RNDr. Miroslav Pikna, PhD.					

Last change: 02.06.2015
Approved by:

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KJFB/2-FJF-956/15	Course title: Experimental Methods in Nuclear and Subnuclear Physics
Number of credits: 2	
Educational level: II.	
State exam syllabus:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-136/00		Course title: Feynman Diagrams			
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: 2.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Particle scattering on potential in quantum mechanics, relativistic equations and their propagators, scattering of electron and positon on potential field, intercatons of electrons, muons and photons, second approach to Feynman diagram – quntum field theory.					
Recommended literature: J. Pišút, Introduction to Feynam diagrams, Study texts UK Bratislava, (1984) (in Slovak) J.D. Bjorken, S.D. Drell, Relativistic quantum mechanics, McGraw-Hill, New York, (1976)					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 32					
A	B	C	D	E	FX
87,5	12,5	0,0	0,0	0,0	0,0
Lecturers: prof. RNDr. Jozef Masarik, DrSc., prof. Ing. Ivan Hubáč, DrSc.					
Last change: 02.06.2015					
Approved by:					

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: 421					
A	B	C	D	E	FX
45,13	20,43	19,48	9,03	1,9	4,04
Lecturers: Mgr. Ľubomíra Kožehubová					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.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: 259					
A	B	C	D	E	FX
38,22	25,87	20,08	10,42	2,7	2,7
Lecturers: Mgr. Ľubomíra Kožehubová					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.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: 101					
A	B	C	D	E	FX
37,62	28,71	21,78	6,93	0,99	3,96
Lecturers: Mgr. Ľubomíra Kožehubová					
Last change: 02.06.2015					
Approved by:					

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: 71					
A	B	C	D	E	FX
39,44	33,8	18,31	2,82	1,41	4,23
Lecturers: Mgr. Ľubomíra Kožehubová					
Last change: 02.06.2015					
Approved by:					

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: 717					
A	B	C	D	E	FX
35,43	27,62	19,8	9,21	2,79	5,16
Lecturers: Mgr. Alexandra Maďarová, Mgr. Marián Mancovič					
Last change: 02.06.2015					
Approved by:					

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: 468					
A	B	C	D	E	FX
35,47	20,51	20,73	13,46	3,42	6,41
Lecturers: Mgr. Alexandra Maďarová					
Last change: 02.06.2015					
Approved by:					

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: 158					
A	B	C	D	E	FX
39,24	26,58	21,52	6,96	2,53	3,16
Lecturers: Mgr. Alexandra Maďarová					
Last change: 02.06.2015					
Approved by:					

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: 85					
A	B	C	D	E	FX
40,0	25,88	12,94	11,76	3,53	5,88
Lecturers: Mgr. Alexandra Maďarová					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-222/15		Course title: High Energy 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: 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: 32					
A	B	C	D	E	FX
28,13	25,0	21,88	12,5	9,38	3,13
Lecturers: prof. RNDr. Stanislav Tokár, DrSc., Mgr. Pavol Bartoš, PhD.					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KJFB/2-FJF-142/15	Course title: Methods in Nuclear Structure Studies
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: 2.	
Educational level: II.	
Prerequisites:	
Course requirements: Evaluation during the semester: midterm tests, homeworks Final evaluation: written test and oral exam Scale for final grades: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 40/60	
Learning outcomes: The student gains an understanding of the structure of atomic nuclei and possibilities for its study. Acquired knowledge allows the student to estimate and evaluate the nuclear structure properties from the experimental data obtained in the decay-spectroscopy measurements.	
Class syllabus: Spherical and deformed shell model. Influence of the nuclear structure on the radioactive decay. Excited states and the deexcitation of atomic nuclei, acquiring the nuclear data from the conversion-electron and gamma spectroscopy. Isomeric states in spherical and deformed nuclei. Multi-quasiparticle K isomeric states. Collective excitations. In-beam spectroscopy. Detection of nuclear fission fragments. Decay spectroscopy and separation of reaction products. Radioactive-ion beam. Laser spectroscopy. Data analysis, statistical analysis and evaluation of basic properties for atomic nuclei from experimental data.	
Recommended literature: Introductory nuclear physics / Kenneth S. Krane. Hoboken : Wiley, 1988 Introductory nuclear physics / P. E. Hodgson, E. Gadioli, E. Gadioli Erba. Oxford : Oxford University Press, 1997 Nuclear structure from a simple perspective / R. F. Casten. Oxford : Oxford University Press, 2000	
Languages necessary to complete the course:	
Notes:	

Past grade distribution					
Total number of evaluated students: 25					
A	B	C	D	E	FX
68,0	8,0	8,0	4,0	12,0	0,0
Lecturers: doc. Mgr. Stanislav Antalic, PhD.					
Last change: 19.02.2020					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-125/00		Course title: Modelling Experimental Set-Ups			
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: 2.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Basic terms of the probability theory and mathematical statistics. Important distributions. General scheme of Monte Carlo methods. Sampling of distribution functions. Specific methods for sampling of irregular distributions. Stochastic processes. Imitation of physical process. Structure of transport equation for hadronic and elektromagnetic cascade. Solution of transport equation using Monte Carlo. Basic scheme of GEANT package. Definition of materials, medii, geometry of experiment. Volume, subvolume and their positioning. Detector response. Storing of information in data structure. Simulated physical processes and their control. Passage of particle through volume, detector and set. GEANT data struktures. Graphics. Interactive GEANT.					
Recommended literature: A. Rényi, Teorie pravdepodobnosti, ACADEMIA, Praha 1972 J. Spanier, E.M. Gebard, Monte Carlo principles and Neutron transport Problems, Edison Wesley Pub. Comp., Massachusets 1969. S.M. Jermakov, Metod Monte Carlo i smezhnyje voprosy, Nauka Moskva 1975 R. Brun et al., GEANT-CERN Program Library D506					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 28					
A	B	C	D	E	FX
85,71	7,14	7,14	0,0	0,0	0,0
Lecturers: prof. RNDr. Stanislav Tokár, DrSc.					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-249/16		Course title: Modelling of Radiation Interaction with Matter			
Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 4.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 1					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: prof. RNDr. Stanislav Tokár, DrSc., RNDr. Tibor Ženiš, PhD., Mgr. Róbert Breier, PhD.					
Last change: 12.04.2016					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-244/16		Course title: Neutrino Physics and Weak Interactions in Nuclei			
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: 1					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: prof. RNDr. Fedor Šimkovic, CSc., Mgr. Dušan Štefánik, PhD.					
Last change: 20.05.2016					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-221/15		Course title: Neutron Physics and Reactor Systems			
Educational activities: Type of activities: lecture Number of hours: per week: 3 per level/semester: 42 Form of the course: on-site learning					
Number of credits: 4					
Recommended semester: 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: 23					
A	B	C	D	E	FX
69,57	13,04	13,04	0,0	0,0	4,35
Lecturers: doc. RNDr. Karol Holý, CSc., RNDr. Miroslav Jeřkovský, PhD.					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJFB/2-FJF-122/00		Course title: Nuclear Electronics			
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: The lecture deals: with basic information about methods using in linear circuits analyses, about circuits with semiconductors elements (- transistors, operational amplifiers, fast pulse amplifiers, linear amplifier with low noise level), about others circuits useful in pulse high digitization techniques and in coincidence timing measurement (- Pulse shapers and amplitude discriminators, Methods to generate fast-time pick-off signal from input pulse, coincidence and anticoincidence circuits and automation of data processing).					
Recommended literature: D.Kollár: Elektronika a automatizácia I. Textbook MFF UK 1990. D.Kollár: Elektronika a automatizácia II. Textbook MFF UK 1990. A. P. Citovič: Jadernaja elektronika, Energoatomizdat, Moskva 1984. U. Tietze, Ch. Schenk: Halbleiter-schaltungstechnik, MIR, Moskva 1982. J. Šeda, J. Sabol, J. Kubánek: Jaderná elektronika, SNTL, Praha 1977. Comments to the lectures on web URL -- http://www.dnp.fmph.uniba.sk/~kollar/navodnik.htm .					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 81					
A	B	C	D	E	FX
35,8	32,1	19,75	6,17	2,47	3,7
Lecturers: RNDr. Tibor Ženiš, PhD.					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-133/15		Course title: Nuclear Energetics			
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: FMFL.KJFB/2-FJF-221/15 - Neutron Physics and Reactor Systems					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 7					
A	B	C	D	E	FX
85,71	0,0	14,29	0,0	0,0	0,0
Lecturers: RNDr. Alexander Šivo, PhD., Ing. Jakub Kaizer, PhD.					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-138/00		Course title: Nuclear Geophysics and Astrophysics			
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: 2.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Basics theory of nucleosynthesis, primordial, antropogenic and cosmogenic nuclides. Principles of nuclear radiometric methods, dating, erosion study, catastrophic events and their investigation by nuclear methods. Position of the Earth in the Solar system. Isotpos and their applications in Solar system formation chronometry.Space, chemical elemnts in it and their abundances in various objects of Solar system.					
Recommended literature: W.S. Broecker, How to built a habitable planet, Eldigia press, Pallisades, (1988) D. Lal and B. Peters, Handbuch der Physik, Springer-Verlag, (1967)					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 36					
A	B	C	D	E	FX
66,67	25,0	2,78	5,56	0,0	0,0
Lecturers: prof. RNDr. Jozef Masarik, DrSc.					
Last change: 02.06.2015					
Approved by:					

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KJFB/2-FJF-958/15	Course title: Nuclear Physics
Number of credits: 2	
Educational level: II.	
State exam syllabus:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJFB/2-FJF-202/00		Course title: Nuclear Reactions			
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: 2.					
Educational level: II.					
Prerequisites:					
Course requirements: Evaluation during the semester: midterm tests, homeworks Final evaluation: written test and oral exam Scale for final grades: A 90%, B 80%, C 70%, D 60%, E 50%					
Learning outcomes: The student gains an understanding of nuclear reactions and their properties. Acquired knowledge allows the student to estimate and evaluate the production yield of nuclear reaction and their kinematic properties. The student will be also able to estimate and suggest a suitable experimental base to solve various questions in the field of nuclear physics.					
Class syllabus: General principles of nuclear reactions (NRs), reaction kinematics, the role of orbital momentum, rotational potential, types of NRs, reaction cross-section, elastic and inelastic scattering, neutron-induced NRs, nucleon transfer reactions, deep inelastic reactions, optical model, reactions of gamma quanta, compound nucleus reactions, heavy-ion reactions, fission reactions, applications of NRs, thermonuclear reactions, synthesis of superheavy nuclei, nuclear reactions at relativistic energies.					
Recommended literature: Introduction to nuclear reactions / Carlos A. Bertulani, Pawel Danielewicz. Bristol : Institute of Physics Publishing, 2004 Introductory nuclear physics / Kenneth S. Krane. Hoboken : Wiley, 1988 Introductory nuclear physics / P. E. Hodgson, E. Gadioli, E. Gadioli Erba. Oxford : Oxford University Press, 1997					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 82					
A	B	C	D	E	FX
51,22	21,95	17,07	6,1	3,66	0,0

Lecturers: doc. Mgr. Stanislav Antalic, PhD.
Last change: 19.02.2020
Approved by:

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KJFB/2-FJF-955/15	Course title: Nuclear and Subnuclear Physics
Number of credits: 2	
Educational level: II.	
State exam syllabus:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJFB/2-FJF-107/00		Course title: Nucleus Theory			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 2.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: History and success of nuclear physics, basic characteristics of nucleus (mass, dimension, spin, magnetic and electric moments, quadrupole moments, nuclear deformation), models of strong interacting particles (drop model, nuclear matter, nuclear stars), models of independent particles (Fermi model), nuclear shell model (harmonic oscillator potential, Woods-Saxon potential, spin-orbit interaction), generalized models (single particle states in non-sphericals – Nilsson model, roational bands, vibrational states, resonances), optical model, Pauli exclusion principle and isospin, Nucleon-nucleon interaction, phase analysis of scattering angles, two-particle wave function, deuteron, nuclear Hamiltonian, microscopical models (Hartree and Hartree-Fock methods), nuclear interactions (alpha, beta and gamma nuclear transitions).					
Recommended literature: T. Mayer-Kuckuk: Fyzika atómového jadra, SNTL, Praha, 1979, J.M.Eisenberg, W.Greiner: Nuclear Theory					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 79					
A	B	C	D	E	FX
54,43	30,38	11,39	1,27	2,53	0,0
Lecturers: prof. RNDr. Fedor Šimkovic, CSc., Mgr. Dušan Štefánik, PhD.					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJFB/2-FJF-124/00		Course title: Numerical Methods in Nuclear 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: 2.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Approximation by rational fuctions, approximation by trigionometric functions, solution of linear algebric equations, solution of nonlinear equations, interpolation and extrapolation, numerical integration, special functions (gamma, beta factorials), random numbers, minimization and maximization of functions. Error propagation. Fourier transformation. Ordinary and partial differential equations.					
Recommended literature: P.L. DeVries, A first course in computational physics, John Wiley, Miami (1984) S.S.M. Wong, Compuational methods in physics and engineering, Prentice Hall, Englewwod Cliffs, (1992) K. Langanke, J.A. Maruhn, S.E. Koonin, Computational nuclear physics 1,2, Springer/Verlag, New York, (1993)					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 47					
A	B	C	D	E	FX
95,74	4,26	0,0	0,0	0,0	0,0
Lecturers: RNDr. Ing. Milan Melicherčík, PhD.					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJFB/2-FJF-132/00		Course title: Particle Accelerators			
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: What for we need accelerators. Linear electrostatic accelerators. Linear resonance accelerators. Cyclic accelerators: cyclotron, fazotron, microtron, betatron, synchrotron, synchrofazotron. Strong focustion. Description of particle trajectories in the accelerator, stability condition. Extracted beams. Colliding beams. Accelerating and acumulating facilities. Colliders. Beam cooling techniques. Aplication of acceleators in different fields of science, medicine and industry.					
Recommended literature: S.Usačev a kol. Experimentálna jadrová fyzika, SNTL, Bratislava, 1982 I.Úlehla, M.Suk, Z.Trka: Atomy, jadra, častice, Academie, Praha, 1990					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 83					
A	B	C	D	E	FX
54,22	30,12	14,46	0,0	0,0	1,2
Lecturers: Mgr. Michal Mereš, PhD.					
Last change: 02.06.2015					
Approved by:					

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: 1594					
A	B	C	D	E	FX
98,56	0,56	0,06	0,0	0,0	0,82
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:					

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: 1458					
A	B	C	D	E	FX
98,97	0,41	0,07	0,07	0,0	0,48
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:					

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: 1219					
A	B	C	D	E	FX
99,02	0,41	0,0	0,0	0,0	0,57
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:					

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: 1056					
A	B	C	D	E	FX
99,05	0,38	0,09	0,0	0,09	0,38
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:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJFB/2-FJF-115/15		Course title: Physics of the Atomic Nucleus			
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: Evaluation during the semester: midterm tests, homeworks Final evaluation: written test and oral exam Scale for final grades: A 90%, B 80%, C 70%, D 60%, E 50%					
Learning outcomes: The student gains the understanding of the physics of atomic nuclei, their basic theoretical description and properties of radioactive decays. Acquired knowledge allows the student to estimate and evaluate the basic properties of atomic nuclei and extract the information from the data obtained in the experiments.					
Class syllabus: Summary of basic nuclear models and nuclear potential. Spherical and deformed shell model. Deformation of the nucleus and its collective excitation. Radioactive decay (Q value, selection rules, hindrance factors). The excited state of nuclei, gamma transition, internal conversion. The nuclear fission process (fission barrier, spontaneous and induced fission). Nuclear isomers. Detection of emitted particles.					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 35					
A	B	C	D	E	FX
74,29	5,71	11,43	0,0	8,57	0,0
Lecturers: doc. Mgr. Stanislav Antalic, PhD.					
Last change: 19.02.2020					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJFB/2-FJF-106/00		Course title: Practical Exercises in Nuclear Physics and Electronics			
Educational activities: Type of activities: laboratory practicals Number of hours: per week: 4 per level/semester: 56 Form of the course: on-site learning					
Number of credits: 4					
Recommended semester: 1.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Practical exercises consist of: - the Laboratory work in Nuclear Physics (- Determine energy deposited in alfa, beta, gama and neutron detectors, Practically to familiarize with method of radioactivity measurement) - the Laboratory work in Nuclear Electronics (- Nuclear detector signal pulse shaping, Pulse application of amplifier in the timing and energy measurement, ADC - digitization of pulse high techniques, Timing measurement with coincidence sytem)					
Recommended literature: Manual to practical exercises on web URL - http://www.dnp.fmph.uniba.sk/~kollar/navodnik.htm . Florek.:Praktikum z jadrovej fyziky a elektroniky. Textbook MFF UK 1982. D.Kollár: Praktikum z elektroniky a automatizácie. Textbook MFF UK 1991.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 82					
A	B	C	D	E	FX
74,39	24,39	1,22	0,0	0,0	0,0
Lecturers: Mgr. Ivan Kontuľ, PhD., Mgr. Róbert Breier, PhD., Mgr. Jakub Zeman, PhD.					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-250/17		Course title: Practicum of Data Analysis in Particle 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: 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: 0					
A	B	C	D	E	FX
0,0	0,0	0,0	0,0	0,0	0,0
Lecturers: Mgr. Róbert Astaloš, PhD., Mgr. Pavol Bartoš, PhD.					
Last change: 10.05.2017					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJFB/2-FJF-245/00		Course title: Praktical in Monitoring of Radioactivity in the Environment			
Educational activities: Type of activities: laboratory practicals Number of hours: per week: 5 per level/semester: 70 Form of the course: on-site learning					
Number of credits: 5					
Recommended semester: 4.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Determination of integral alfa and beta activity. Determination of 232-Th, 226-Ra and 40–K in natural samples using semiconductor gamma spectrometry. Measurement of 3-H using liquid scintillation spectrometry. Measurement of 14-C using gaseous proportional detector. Determination of 226-Ra in water using emanometric method. Determination of radon concentration in water and soil air. Alfa spectrometric determination of 218-Po and 214-Po in air. Applications of XRF method for control of pollutants in the environment.					
Recommended literature: Actual scientific publications. Slovak technical norms for radioactivity measurement. Š.Šáro: Detekcia a spektrometria žiarenia alfa a beta. Alfa Bratislava,1983.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 7					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: doc. RNDr. Karol Holý, CSc., doc. RNDr. Ivan Sýkora, PhD., RNDr. Monika Müllerová, PhD.					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-121/00		Course title: Processing of Nuclear Physics Data			
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: Describing the data, theoretical distributions, errors, estimations – likelihood function, basic estimators, maximum likelihood, the method of moments, least squares method, χ^2 distribution, proof of the χ^2 distribution. Probability and confidence – basic terms, mathematical probability, Bayesian statistics, confidence level, binomial confidence intervals, Poisson confidence intervals. Taking decisions – hypothesis testing (significance, power, Neyman Pearson test), interpreting experiments, the null hypothesis, binomial probabilities, goodness of fit, χ^2 test, the run test, the Kolmogorov test. Two sample problem, matched and correlated samples. Ranking methods – nonparametric methods, Mann-Whitney test, matched pairs, Wilcoxon's matched pairs signed rank test, measures of agreement – Spearman's correlation coefficient, concordance. Usage of computers for data processing and software features.					
Recommended literature: J. Hanousek, P. Charamza: Moderní metody zpracování dat, Educa'99, Praha, 1992 R. Barlow: Statistics, (Manchester Physics Series), J. Wiley&Sons, Chichester, 1999 L.Lyons: Statistics for nuclear and particle physicist, Cambridge University Press, 1992					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 73					
A	B	C	D	E	FX
57,53	20,55	9,59	10,96	1,37	0,0
Lecturers: doc. RNDr. Ivan Sýkora, PhD.					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-128/16		Course title: Quantum Theory for Nuclear Physicists			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 3 / 1 per level/semester: 42 / 14 Form of the course: on-site learning					
Number of credits: 5					
Recommended semester: 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
69,23	19,23	7,69	3,85	0,0	0,0
Lecturers: prof. RNDr. Fedor Šimkovic, CSc., Mgr. Dušan Štefánik, PhD.					
Last change: 20.05.2016					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJFB/2-FJF-126/00		Course title: Radiation Environmental 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: 2.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Sources of radioactivity in biosphere. Distribution and transport of radionuclides in environment. Indoor and outdoor radon, its measurement and hazards. Techniques for measurement of radioactive pollutants. Study of environmental processes by the use of radionuclides. Environmental laws, radiation protection legislation, radiation dose limits.					
Recommended literature: Š. Šáro, J. Tolgyesy: Rádioaktivita prostredia, Alfa, Bratislava, 1985. W. W. Nazaroff, A. V. Nero: Radon and its decay products in Indoor Air. Wiley, New York,1988. M. Eisenbud, T. Gesell: Environmental Radioactivity. Academic Press, San Diego,1997.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 54					
A	B	C	D	E	FX
70,37	9,26	14,81	1,85	1,85	1,85
Lecturers: doc. RNDr. Karol Holý, CSc.					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-141/15		Course title: Rare Nuclear Processes			
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: 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: 3					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: doc. RNDr. Jaroslav Staníček, PhD.					
Last change: 02.06.2015					
Approved by:					

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: 685					
A	B	C	D	E	FX
58,98	16,35	10,51	4,53	1,9	7,74
Lecturers: PhDr. Elena Klátiková					
Last change: 02.06.2015					
Approved by:					

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: 414					
A	B	C	D	E	FX
65,94	15,22	8,7	3,86	0,97	5,31
Lecturers: PhDr. Elena Klátiková					
Last change: 02.06.2015					
Approved by:					

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: 197					
A	B	C	D	E	FX
70,05	17,77	8,63	2,54	0,0	1,02
Lecturers: PhDr. Elena Klátiková					
Last change: 02.06.2015					
Approved by:					

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: 142					
A	B	C	D	E	FX
75,35	13,38	7,04	2,82	0,7	0,7
Lecturers: PhDr. Elena Klátiková					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJFB/2-FJF-232/00		Course title: Selected Chapters in Gamma Spectroscopy			
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: Creation and formig of signals in semiconductor detectors, principles of operation and types of semiconductor detectors, characteristic of semiconductor detectors, the signal transmission, electronics for pulse signal processing, perturbing influence of heavy current distribution, cryogenic detectors – types, principles of operation, physical applications.					
Recommended literature: W.R. Leo, Techniques for nuclear and particle physics, Springer Verlag, Berlin, 1996 J. V. Melikov, Experimentalnaja tehnika v jadernoj fizike, MGU, Moskva, 1973 K. Klainknecht, Detectors for particle radiation, Cambridge University Press, 1998 J. Šeda, J. Sabol, J. Kubálek, Jaderná elektronika, SNTL, Praha, 1977 N. E. Booth, B. Cabrera, E. Fiorini, Low temperature particle detectors, Ann. Rev. Nucl. Part. Sci. ,46, 1996					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 18					
A	B	C	D	E	FX
55,56	38,89	5,56	0,0	0,0	0,0
Lecturers: doc. RNDr. Ivan Sýkora, PhD.					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJFB/2-FJF-203/00		Course title: Seminar in Nuclear and Subnuclear Physics			
Educational activities: Type of activities: seminar Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 4.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Presentation of modern trends in nuclear and sub-nuclear physics, new achievements in the field of interest. Presentation of the scientific programs of large international nuclear institutes as CENR Geneva, JINR Dubna, GSI Darmstadt, DESY Hamburg, Fermilab, etc.					
Recommended literature: WEB sites of nuclear physics institutes, Journals: Physics Today, CERN Courier, Progress in Physics, Scintific American, Nuclear Physics News, Europhysics News, Nuclear Physics News International and others.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 76					
A	B	C	D	E	FX
98,68	0,0	1,32	0,0	0,0	0,0
Lecturers: prof. RNDr. Jozef Masarik, DrSc.					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-109/00		Course title: Special Practical in Nuclear Physics (1)			
Educational activities: Type of activities: laboratory practicals Number of hours: per week: 4 per level/semester: 56 Form of the course: on-site learning					
Number of credits: 4					
Recommended semester: 2.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Half-time decay measurement of the long life isotopes, determining the concentration of some isotopes in the enviroment, (, (, (radiation spectrometry by ionization chamber, semiconductor and scintilation detectors, fission fragment spectrometry, measurement of the nucleus radius, neutron activation analysis, detection of neutrons and determination of the neutron flux.					
Recommended literature: M. Florek a kol. Practical from nuclear physics and electronic, UK edition center, 1990					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 75					
A	B	C	D	E	FX
65,33	26,67	8,0	0,0	0,0	0,0
Lecturers: RNDr. Imrich Szarka, CSc.					
Last change: 02.06.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-209/00		Course title: Special Practical in Nuclear Physics (2)			
Educational activities: Type of activities: laboratory practicals Number of hours: per week: 5 per level/semester: 70 Form of the course: on-site learning					
Number of credits: 5					
Recommended semester: 3.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Determining of relative intensities of gamma rays using the scintillation detector. Usage of the liquid scintillation spectrometry for the alpha and beta spectra analysis. Principles of application of directional scintillation detector. Characteristics of Ge(Li) and HPGe detectors, methods of evaluation of the peak efficiency of HPGe detector, multicomponent spectra analysis. Coincidence methods of gamma-ray spectrometry. The analysis of the ¹⁵² Eu decay scheme.					
Recommended literature: S. Usačev a kol.: Experimentálna jadrová fyzika, ALFA-SNTL, Bratislava 1982 Š.Šáro : Detekcia a spektrometria žiarenia alfa a beta. Alfa, Bratislava, 1983 G.F. Knoll: Radiation Detection and Measurement, John Wiley & Sons, 2000 W.R. Leo: Techniques for Nuclear and Particle Physics Experiments, Springer Verlag, 1994					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 78					
A	B	C	D	E	FX
92,31	5,13	1,28	0,0	0,0	1,28
Lecturers: doc. RNDr. Jaroslav Staníček, PhD., doc. RNDr. Ivan Sýkora, PhD.					
Last change: 02.06.2015					
Approved by:					

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: 68					
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:					

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: 35					
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:					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJFB/2-FJF-143/16		Course title: Standard Model from Experimentalist Point of View			
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: 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: 14					
A	B	C	D	E	FX
28,57	50,0	7,14	7,14	0,0	7,14
Lecturers: Mgr. Róbert Astaloš, PhD., Mgr. Pavol Bartoš, PhD., prof. RNDr. Stanislav Tokár, DrSc.					
Last change: 26.05.2016					
Approved by:					

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KJFB/2-FJF-959/15	Course title: Sub-nuclear Physics
Number of credits: 2	
Educational level: II.	
State exam syllabus:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJFB/2-FJF-231/00		Course title: Theory of Many-Nucleon 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: Nucleon-nucleon interaction (one-boson exchange potential), phase analysis of NN interaction, G-matrices (Bethe-Goldstone equation), Slater determinant, second quantization, Hartree-Fock theory, description of excited states of nucleus, Tamm-Dancoff approximation, nuclear ground state correlations, random phase approximation (RPA), RPA equation, sum rules, proton-proton, neutron-neutron and proton-neutron pairing interactions, Hartree-Fock Bogoliubov transformation, Barden-Cooper-Schrieffer (BCS) equation, quasiparticle RPA, giant resonances (Gamow-Teller, isobaric analogue states), many-body Green functions of beta transitions, many-body studies within schematic models (Lipkin model, SO(5) model), Monte-Carlo shell model S-matrix and its expansion, mean field theory, Brueckner G-matrices, Walecka model.					
Recommended literature: G.E. Brown: Many-body problems P.Ring P. Schuck: The nuclear many-body problem J. Eisenberg, B. Greiner: Nuclear Theory D.A. Kirzhnits: Field Theoretical Methods in Many-Body Systems J.D. Walecka: Quantum Theory of Many-particle systems					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 2					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: prof. RNDr. Fedor Šimkovic, CSc., Mgr. Dušan Štefánik, PhD.					
Last change: 02.06.2015					

Approved by: