

Course descriptions

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COURSE DESCRIPTION

University: Comenius University in Bratislava							
Faculty: Faculty of Mathematics, Physics and Informatics							
Course ID: FMFL.KJP/3-MXX-101/15				Course title: Course of English for PhD Studies (1)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning, distance learning							
Number of credits: 5							
Recommended semester: 1.							
Educational level: III.							
Prerequisites:							
Course requirements:							
Learning outcomes:							
Class syllabus:							
Recommended literature:							
Languages necessary to complete the course:							
Notes:							
Past grade distribution Total number of evaluated students: 118							
A	ABS	B	C	D	E	FX	NEABS
71,19	24,58	0,85	0,0	0,0	3,39	0,0	0,0
Lecturers: PhDr. Alena Zemanová							
Last change: 22.02.2019							
Approved by:							

COURSE DESCRIPTION

University: Comenius University in Bratislava							
Faculty: Faculty of Mathematics, Physics and Informatics							
Course ID: FMFL.KJP/3-MXX-102/15				Course title: Course of English for PhD Studies (1)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning, distance learning							
Number of credits: 5							
Recommended semester: 2.							
Educational level: III.							
Prerequisites: FMFL.KJP/3-MXX-101/15 - Course of English for PhD Studies (1)							
Course requirements:							
Learning outcomes:							
Class syllabus:							
Recommended literature:							
Languages necessary to complete the course:							
Notes:							
Past grade distribution Total number of evaluated students: 119							
A	ABS	B	C	D	E	FX	NEABS
73,95	19,33	0,0	0,0	0,0	0,0	0,0	6,72
Lecturers: PhDr. Alena Zemanová							
Last change: 22.02.2019							
Approved by:							

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KEF/3-FKL-950/15	Course title: Dissertation Examination
Number of credits: 20	
Recommended semester: 3., 4..	
Educational level: III.	
State exam syllabus:	
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.KEF/3-FKL-990/15	Course title: Dissertation Thesis Defense
Number of credits: 30	
Recommended semester: 7., 8..	
Educational level: III.	
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.KEF/3-FKL-003/15	Course title: Electrons in Disordered and Mesoscopic Systems
Educational activities: Type of activities: lecture / seminar Number of hours: per week: 2 / 2 per level/semester: 28 / 28 Form of the course: on-site learning	
Number of credits: 10	
Recommended semester: 2.	
Educational level: III.	
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	
ABS	NEABS
0,0	0,0
Lecturers: doc. RNDr. Martin Moško, 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.KEF/3-FKL-401/10	Course title: Foreign Periodical Cited in Current Contents
Educational activities: Type of activities: Number of hours: per week: per level/semester: Form of the course: on-site learning	
Number of credits: 35	
Recommended semester:	
Educational level: III.	
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	
ABS	NEABS
100,0	0,0
Lecturers:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KEF/3-FKL-402/10	Course title: Home Journal Cited in Current Contents
Educational activities: Type of activities: Number of hours: per week: per level/semester: Form of the course: on-site learning	
Number of credits: 30	
Recommended semester:	
Educational level: III.	
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	
ABS	NEABS
0,0	0,0
Lecturers:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KEF/3-FKL-102/15	Course title: Individual Study of Resources (1)
Educational activities: Type of activities: independent work Number of hours: per week: 10 per level/semester: 140 Form of the course: on-site learning	
Number of credits: 10	
Recommended semester: 1.	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	
Past grade distribution Total number of evaluated students: 4	
ABS	NEABS
100,0	0,0
Lecturers:	
Last change:	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KEF/3-FKL-103/15	Course title: Individual Study of Resources (2)
Educational activities: Type of activities: independent work Number of hours: per week: 10 per level/semester: 140 Form of the course: on-site learning	
Number of credits: 10	
Recommended semester: 2.	
Educational level: III.	
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	
ABS	NEABS
0,0	0,0
Lecturers:	
Last change:	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KEF/3-FKL-005/15	Course title: Modern Trends in Condensed Matter Physics and Acoustics
Educational activities: Type of activities: lecture / seminar Number of hours: per week: 2 / 2 per level/semester: 28 / 28 Form of the course: on-site learning	
Number of credits: 10	
Recommended semester: 3.	
Educational level: III.	
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	
ABS	NEABS
0,0	0,0
Lecturers: prof. RNDr. Peter Kúš, DrSc., prof. RNDr. Andrej Plecenik, 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.KEF/3-FKL-701/10	Course title: Obtaining a University Grant
Educational activities: Type of activities: Number of hours: per week: per level/semester: Form of the course: on-site learning	
Number of credits: 20	
Recommended semester:	
Educational level: III.	
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	
ABS	NEABS
100,0	0,0
Lecturers:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava							
Faculty: Faculty of Mathematics, Physics and Informatics							
Course ID: FMFL.KEF/3-FKL-007/15				Course title: Quantum Simulations in Condensed Matter			
Educational activities: Type of activities: lecture / seminar Number of hours: per week: 2 / 2 per level/semester: 28 / 28 Form of the course: on-site learning, distance learning							
Number of credits: 10							
Recommended semester: 2.							
Educational level: III.							
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	ABS	B	C	D	E	FX	NEABS
87,5	0,0	6,25	6,25	0,0	0,0	0,0	0,0
Lecturers: prof. Ing. Roman Martoňák, DrSc.							
Last change: 02.06.2015							
Approved by:							

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFLKEF/3-FKL-702/10	Course title: Quotation Registered in SCI or SCOPUS
Educational activities: Type of activities: Number of hours: per week: per level/semester: Form of the course: on-site learning	
Number of credits: 4	
Recommended semester:	
Educational level: III.	
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	
ABS	NEABS
0,0	0,0
Lecturers:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KEF/3-FKL-302/10	Course title: Research Work
Educational activities: Type of activities: Number of hours: per week: per level/semester: Form of the course: on-site learning	
Number of credits: 10	
Recommended semester: 3.	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	
Past grade distribution Total number of evaluated students: 2	
ABS	NEABS
100,0	0,0
Lecturers:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFLKEF/3-FKL-303/10	Course title: Research Work
Educational activities: Type of activities: Number of hours: per week: per level/semester: Form of the course: on-site learning	
Number of credits: 20	
Recommended semester: 4.	
Educational level: III.	
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	
ABS	NEABS
0,0	0,0
Lecturers:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KEF/3-FKL-304/10	Course title: Research Work
Educational activities: Type of activities: Number of hours: per week: per level/semester: Form of the course: on-site learning	
Number of credits: 25	
Recommended semester: 5.	
Educational level: III.	
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	
ABS	NEABS
100,0	0,0
Lecturers:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFLKEF/3-FKL-305/10	Course title: Research Work
Educational activities: Type of activities: Number of hours: per week: per level/semester: Form of the course: on-site learning	
Number of credits: 25	
Recommended semester: 6.	
Educational level: III.	
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	
ABS	NEABS
0,0	0,0
Lecturers:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KEF/3-FKL-306/10	Course title: Research Work
Educational activities: Type of activities: Number of hours: per week: per level/semester: Form of the course: on-site learning	
Number of credits: 25	
Recommended semester: 7.	
Educational level: III.	
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	
ABS	NEABS
100,0	0,0
Lecturers:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KEF/3-FKL-403/10	Course title: Reviewed Foreign Papers Volume
Educational activities: Type of activities: Number of hours: per week: per level/semester: Form of the course: on-site learning	
Number of credits: 25	
Recommended semester:	
Educational level: III.	
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	
ABS	NEABS
0,0	0,0
Lecturers:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KEF/3-FKL-404/10	Course title: Reviewed Home Papers Volume
Educational activities: Type of activities: Number of hours: per week: per level/semester: Form of the course: on-site learning	
Number of credits: 20	
Recommended semester:	
Educational level: III.	
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	
ABS	NEABS
0,0	0,0
Lecturers:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KEF/3-FKL-801/10	Course title: Teaching Activities
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: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	
Past grade distribution Total number of evaluated students: 2	
ABS	NEABS
100,0	0,0
Lecturers:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFLKEF/3-FKL-802/10	Course title: Teaching Activities
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: III.	
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	
ABS	NEABS
0,0	0,0
Lecturers:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KEF/3-FKL-803/10	Course title: Teaching Activities
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: 3.	
Educational level: III.	
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	
ABS	NEABS
100,0	0,0
Lecturers:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFLKEF/3-FKL-804/10	Course title: Teaching Activities
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: 4.	
Educational level: III.	
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	
ABS	NEABS
0,0	0,0
Lecturers:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KEF/3-FKL-805/10	Course title: Teaching Activities
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: 5.	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	
Past grade distribution Total number of evaluated students: 2	
ABS	NEABS
100,0	0,0
Lecturers:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KEF/3-FKL-806/10	Course title: Teaching Activities
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: 6.	
Educational level: III.	
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	
ABS	NEABS
0,0	0,0
Lecturers:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KEF/3-FKL-807/10	Course title: Teaching Activities
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: 7.	
Educational level: III.	
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	
ABS	NEABS
0,0	0,0
Lecturers:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFLKEF/3-FKL-808/10	Course title: Teaching Activities
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: 8.	
Educational level: III.	
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	
ABS	NEABS
0,0	0,0
Lecturers:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KEF/3-FKL-006/15	Course title: Theory of Condensed Matter
Educational activities: Type of activities: lecture / seminar Number of hours: per week: 2 / 2 per level/semester: 28 / 28 Form of the course: on-site learning, distance learning	
Number of credits: 10	
Recommended semester: 1.	
Educational level: III.	
Prerequisites:	
Recommended prerequisites: 2-FTL-107 Structure and mechanical properties of solids AND 2-FTL-108 Electronic and optical properties of solids AND 2-FTL-205 Many body 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 become fluent in the language of the quantum field theory and its applications to condensed matter physics.	
Class syllabus: Linear response theory. Green's functions: relation to observables, formal properties. Perturbation theory and Feynman diagrams. Adiabatic continuity and renormalization group. Non-perturbative methods: variational methods and effective Hamiltonians. Formal results will be illustrated by examples from quantum magnetism, superconductivity, correlated electrons, and/or coupled electron-phonon problems, upon agreement with the students.	
Recommended literature: Condensed matter physics : Corrected printing / Michael P. Marder. New York : John Wiley, 2000 Principles of condensed matter physics / P. M. Chaikin, T. C. Lubensky. Cambridge : Cambridge University Press, 1995	
Languages necessary to complete the course: english	
Notes:	

Past grade distribution							
Total number of evaluated students: 26							
A	ABS	B	C	D	E	FX	NEABS
84,62	15,38	0,0	0,0	0,0	0,0	0,0	0,0
Lecturers: doc. RNDr. Richard Hlubina, DrSc.							
Last change: 18.10.2016							
Approved by:							