Course descriptions

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COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-419/15	Advanced Numerical Methods

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 1 / 1 **per level/semester:** 14 / 14
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 2.

Educational level: II.

Prerequisites: FMFI.KAFZM/2-FFZa-108/15 - Numerical Methods

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 2

A	B	C	D	E	FX
50,0	50,0	0,0	0,0	0,0	0,0

Lecturers: doc. Mgr. Jozef Kristek, PhD.

Last change:

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-420/15	Advanced Seismometry

Educational activities:
Type of activities: lecture
Number of hours:
per week: 1 **per level/semester:** 14
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3.

Educational level: II.

Prerequisites:

Course requirements:

Learning outcomes:
gained more advanced knowledge of seismological applications

Class syllabus:
Seismic stations, networks, arrays, seismic monitoring, Geophysical observatories, seismic networks, array seismology, 3-component arrays, Practice at national network and CTBTO.

Recommended literature:
Earth Science / Edward J. Tarbuck, Frederick K. Lutgens. Columbus : Merill Publishing Company, 1988
Bormann, P. (ed.) (2012): New Manual of Seismological Observatory Practice (NMSOP-2), IASPEI, GFZ German Research Centre for Geosciences, Potsdam (ed.) 2012; http://nmsop.gfz-potsdam.de;
DOI: 10.2312/GFZ.NMSOP-2

Languages necessary to complete the course:
English

Notes:

Past grade distribution
Total number of evaluated students: 4

A	B	C	D	E	FX
25,0	25,0	25,0	25,0	0,0	0,0

Lecturers: Dr. Petr Kolínsky

Last change: 04.09.2015

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-422/15	Anisotropy

Educational activities:
Type of activities: lecture
Number of hours:
per week: 1 **per level/semester:** 14
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3.

Educational level: II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 9

A	B	C	D	E	FX
33,33	44,44	11,11	0,0	11,11	0,0

Lecturers: Univ.-Prof. Dr. Götz Bokelmann, Dott. ric. Irene Bianchi

Last change:

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-123/15	Continuum Mechanics and Rheology

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 1 **per level/semester:** 28 / 14
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 1.

Educational level: II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 7

A	B	C	D	E	FX
14,29	14,29	0,0	14,29	28,57	28,57

Lecturers: prof. RNDr. Peter Moczo, DrSc.

Last change: 04.09.2015

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-102/15	Digital Filtering in Geophysics

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: 6

A	B	C	D	E	FX
33,33	33,33	16,67	0,0	16,67	0,0

Lecturers: doc. Mgr. Jozef Kristek, PhD., RNDr. Róbert Kysel, PhD., Mgr. Martin Gális, PhD., RNDr. Adriena Ondrášková, PhD.

Last change: 04.09.2015

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-244/15	Electromagnetic Sounding

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: 3

A	B	C	D	E	FX
0,0	66,67	33,33	0,0	0,0	0,0

Lecturers: doc. RNDr. Sebastián Ševčík, CSc., RNDr. Adriena Ondrášková, PhD.

Last change: 04.09.2015

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-233/13	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:	**Course title:**
FMFI.KJP/1-MXX-234/13	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:	**Course title:**
FMFI.KAFZM/2-FFZa-423/15	Excursion

Educational activities:
Type of activities: excursion
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:
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
Students get to know the professional context around their field of study.

Class syllabus:
Excursion to institutions, companies, field experiments in the domain of physics of the Earth, upon availability.

Recommended literature:
Earth Science / Edward J. Tarbuck, Frederick K. Lutgens. Columbus : Merill Publishing Company, 1988

Languages necessary to complete the course:
English

Notes:

Past grade distribution
Total number of evaluated students: 5

A	B	C	D	E	FX
80,0	20,0	0,0	0,0	0,0	0,0

Lecturers: Univ.-Prof. Dr. Götz Bokelmann, Dott. ric. Irene Bianchi, Dr. Jean-Baptiste Tary, Dr. Petr Kolínsky

Last change: 04.09.2015

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-425/15	Forensic Seismology

Educational activities:
Type of activities: lecture
Number of hours:
per week: 1 **per level/semester:** 14
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4.

Educational level: II.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 0/100

Learning outcomes:
Students get to know the application of seismology for forensic purposes.

Class syllabus:
Acoustic and seismological data as evidence for human activity, examples, detection thresholds of networks and arrays, seismic noise, advanced application of array techniques, nuclear verification, the Comprehensive Test Ban Treaty Organisation (CTBTO) in Vienna, IMS, IDC, OSI.

Recommended literature:
Elastic wave propagation and generation in seismology / Jose Pujol. Cambridge : Cambridge University Press, 2003
Koper, K. D., T. C. Wallace, S. R. Taylor, and H. E. Hartse, 2001, Forensic seismology and the sinking of the Kursk, EOS Trans., AGU, 82, pp. 37, 45-46.
Dahlman, O.: Detect and deter: can countries verify the nuclear test ban. Springer 2011.
Kristekova M., Moczo P., Labak P., Cipciar A., Fojtikova L., Madaras J., Kristek J. 2008. Time-Frequency Analysis of Explosions in the Ammunition Factory in Novaky, Slovakia. Bull. Seism. Soc. Am. 98, 2507–2516.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 5

A	B	C	D	E	FX
40,0	40,0	0,0	0,0	20,0	0,0

Lecturers: Univ.-Prof. Dr. Götz Bokelmann

Last change: 04.09.2015

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAMŠ/2-FFZa-243/15	Fractals and Chaos in Geophysics

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: 1.

Educational level: II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:
English

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: doc. RNDr. Peter Guba, PhD.

Last change: 04.09.2015

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-141/00	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:	**Course title:**
FMFI.KJP/1-MXX-142/00	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:	**Course title:**
FMFI.KJP/1-MXX-241/00	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:	**Course title:**
FMFI.KJP/1-MXX-242/00	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:	**Course title:**
FMFI.KAMŠ/2-FFZa-203/15	Geodynamics

Educational activities:
Type of activities: course
Number of hours:
per week: 3 **per level/semester:** 42
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 1.

Educational level: II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 7

A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0

Lecturers: doc. RNDr. Ján Boďa, CSc.

Last change: 04.09.2015

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-426/15	Geology for Physicists

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:
Scale of assessment (preliminary/final): 50/50

Learning outcomes:
Students get to know the basics of geology.

Class syllabus:
Minerals, rock types, magmatism, sedimentation, metamorphism, elements of petrology, principles of structural geology, stress and strain, faulting, ductile processes, folding, regional examples, geological evolution, geological time scale, orogenesis, erosion processes.

Recommended literature:

Languages necessary to complete the course:
English

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: Univ.-Prof. Dr. Götz Bokelmann, Kurt Decker, Dott. ric. Irene Bianchi, Dr. Jean-Baptiste Tary

Last change: 04.09.2015

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-421/15	Geophysical Measurements

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: 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: 6

A	B	C	D	E	FX
16,67	16,67	0,0	33,33	16,67	16,67

Lecturers: Univ.-Prof. Dr. Götz Bokelmann, ao. Univ.-Prof. Dr. Bruno Meurers, Dipl. Ing. Maria-Theresia Apoloner, BSc., Dr. Petr Kolínsky

Last change:

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-151/00	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:	**Course title:**
FMFI.KJP/1-MXX-152/00	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:	**Course title:**
FMFI.KJP/1-MXX-251/00	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:	**Course title:**
FMFI.KJP/1-MXX-252/00	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:	**Course title:**
FMFI.KAFZM/2-FFZa-427/15	Gravity Field

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: 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: 5

A	B	C	D	E	FX
20,0	20,0	20,0	20,0	20,0	0,0

Lecturers: ao. Univ.-Prof. Dr. Bruno Meurers

Last change:

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAMŠ/2-FFZa-152/15	Hydrodynamics

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: 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: 1

A	B	C	D	E	FX
0,0	100,0	0,0	0,0	0,0	0,0

Lecturers: doc. RNDr. Peter Guba, PhD.

Last change:

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAFZM/2-FFZa-429/15	**Course title:** Induced Seismicity
Educational activities: **Type of activities:** lecture **Number of hours:** **per week:** 1 **per level/semester:** 14 **Form of the course:** on-site learning	
Number of credits: 2	
Recommended semester: 4.	
Educational level: II.	
Prerequisites:	
Course requirements: Scale of assessment (preliminary/final): 0/100	
Learning outcomes: Gained basic knowledge regarding man-made changes in the topmost crust of the Earth and their possible effects.	
Class syllabus: Fundamentals of Rock Mechanics with special reference to geological fault zones, their properties and effects on the mine workings or dams, principles of rock mechanics in deep mining, assessment of seismic events in the mining industry, reservoir - induced seismicity, mining-induced seismicity. Exercises with direct application of contents of the lecture. Examples deal with e.g. how to estimate the size of earthquakes and stability questions.	
Recommended literature: Jak se studují zemětřesení : základy seismiky / Alois Zátopek. Praha : Jednota československých matematiků a fyziků, 1949 Fairhurst, C - editor (1990): Rockbursts and Seismicity in Mines. Balkema, ISBN 90-6191-145-1. Gay, N C & Wainwright, E H - editors (1984): Rockbursts and Seismicity in Mines. Balkema, ISBN 0-620-06708X. Jaeger, J C., Cook, N.G.W., (1969, Fundamentals of Rock Mechanics. Chapman & Hall, ISBN 0-412-22010-5, Knoll, P - editor (1992): Induced Seismicity. Balkema.	
Languages necessary to complete the course: English	
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: Univ.-Doz. Dr. Wolfgang Lenhardt					
Last change: 04.09.2015					
Approved by:					

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAFZM/2-FFZa-430/15	**Course title:** Inverse Problems
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: 1.	
Educational level: II.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	

Past grade distribution
Total number of evaluated students: 9

A	B	C	D	E	FX
33,33	33,33	11,11	22,22	0,0	0,0

Lecturers: Univ.-Prof. Dr. Götz Bokelmann, Dr. Gwenael Mercier
Last change:
Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-111/15	Magnetic Field of the Earth

Educational activities:
Type of activities: course
Number of hours:
per week: 3 **per level/semester:** 42
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 2.

Educational level: II.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 20/80

Learning outcomes:
Students obtain basic knowledge about the properties of the geomagnetic field, its dynamic behaviour and its physical mechanism and about its origin.

Class syllabus:
Poisson and Laplace equations and their solutions. Legendre polynomials. Analytical expression of the magnetic field of the Earth. Spherical harmonic analysis. Separation of the main (internal) and external field. International geomagnetic reference field (IGRF). Magnetic moment of the Earth. Variations of the geomagnetic field and processes in the ionosphere and magnetosphere. Secular variations of the geomagnetic field. Reversals of the geomagnetic field. Electromagnetic induction in the Earth's body. Electromagnetic response of the Earth and the electric conductivity of the Earth's mantle. Principles of the geomagnetic field generation. Conductivity of the ionosphere.

Recommended literature:
Campbell, Wallace H. Introduction to Geomagnetic Fields, Cambridge Univ. Press, 2003.
Parkinson, W.D.: Introduction to Geomagnetism, Elsevier, 1982

Languages necessary to complete the course:
English

Notes:

Past grade distribution
Total number of evaluated students: 6

A	B	C	D	E	FX
33,33	16,67	50,0	0,0	0,0	0,0

Lecturers: RNDr. Adriena Ondrášková, PhD., doc. RNDr. Sebastián Ševčík, CSc.

Last change: 04.10.2016

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-140/15	Magnetohydrodynamics

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: 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: 1

A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0

Lecturers: doc. RNDr. Sebastián Ševčík, CSc.

Last change: 04.09.2015

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-922/15	Master Seminar

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: 2

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: 8

A	B	C	D	E	FX
75,0	12,5	12,5	0,0	0,0	0,0

Lecturers: prof. RNDr. Peter Moczo, DrSc., Univ.-Prof. Dr. Götz Bokelmann

Last change:

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-913/15	Master Thesis

Educational activities:
Type of activities: independent work
Number of hours:
per week: 28 **per level/semester:** 392
Form of the course: on-site learning

Number of credits: 28

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: 6

A	B	C	D	E	FX
83,33	0,0	0,0	0,0	16,67	0,0

Lecturers: prof. RNDr. Peter Moczo, DrSc., Dott. ric. Irene Bianchi, Univ.-Prof. Dr. Götz Bokelmann

Last change:

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-432/15	Mineral Physics and Mineral Transformations

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: 5

Recommended semester: 4.

Educational level: II.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 0/100

Learning outcomes:
Have learned basics of mineral physics and mineral transformations.

Class syllabus:
Mineral physics, structural variations, stability criteria, transformation of solids under changing physical conditions, mineral phase transformations, relation between properties of solids and atomic mechanisms, mineral phases relevant for the Earth`s interior, geophysical properties and their relation with thermomechanical and transport properties, tensorial decryption of properties, anisotropy.

Recommended literature:
Physical geology / L. Don Leet, Sheldon Judson. Englewood Cliffs : Prentice-Hall, [1971]

Languages necessary to complete the course:
English

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: Univ.-Prof. Dr. Ronald Miletich-Pawliczek

Last change: 04.09.2015

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAFZM/2-FFZa-440/15	**Course title:** Nuclear Geophysics
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: 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: 2

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: 04.09.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-108/15	Numerical Methods

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 1 / 1 **per level/semester:** 14 / 14
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 1.

Educational level: II.

Prerequisites:

Course requirements:
Continuous assessment: homeworks, test, excercises.
Exam: written, oral.
Weight of exam in evaluation: 80%.
To receive grade A, it is necessary to obtain at least 90% points, for grade B at least 80% points, for grade C at least 70% points, for grade D at least 60% points and for grade E at least 50% points
Scale of assessment (preliminary/final): 20/80

Learning outcomes:
Results of education: Students who pass the subject will be able appropriately choose and use basic numerical methods to solve mathematic-physical problems.

Class syllabus:
Errors and their spreading, number representation and precision of solution, algorithms and convergence.
Solution of non-linear equations g(x)=0, separation of roots, bisection method, regula falsi, Newton method and method of fixed point.
Numerical methods for solution of system of equations, calculation of determinant and inverse matix, LU-decomposition of a matrix, singular value decomposition, Jordan form, Jacobi, Gauss-Jacobi method, Cholesky algorithm (Cholesky factorization), iteration methods, method of most rapid decrease. Gradient methods of solution of system of linear equations.
Interpolation and approximation, Lagrange, Newton and Chebyshev interpolation polynomial, least-square method. Interpolation using cubic splines.

Recommended literature:

Languages necessary to complete the course:
English

Notes:

Past grade distribution
Total number of evaluated students: 9

A	B	C	D	E	FX
44,44	11,11	11,11	11,11	0,0	22,22

Lecturers: doc. Mgr. Jozef Kristek, PhD.

Last change: 11.09.2019

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-424/15	Numerical Modeling of Seismic Wavefields

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: 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: 1

A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0

Lecturers: prof. RNDr. Peter Moczo, DrSc., Mgr. Martin Gális, PhD.

Last change: 04.09.2015

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-433/15	Paleomagnetism

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:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 3

A	B	C	D	E	FX
66,67	33,33	0,0	0,0	0,0	0,0

Lecturers: Univ.-Doz. Dr. Wolfgang Lenhardt

Last change: 04.09.2015

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/2-MXX-110/00	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:	**Course title:**
FMFI.KTV/2-MXX-120/00	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:	**Course title:**
FMFI.KTV/2-MXX-210/00	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:	**Course title:**
FMFI.KTV/2-MXX-220/00	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:	**Course title:**
FMFI.KAFZM/2-FFZa-202/15	Physics of Ionosphere and Magnetosphere

Educational activities:
Type of activities: course
Number of hours:
per week: 4 **per level/semester:** 56
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 3.

Educational level: II.

Prerequisites:

Course requirements:
Questions answered as homework
oral examination
grade A - 90%, grade B - 80%, grade C - 70%, grade D - 60%, grade E - 50%.
Scale of assessment (preliminary/final): 20/80

Learning outcomes:
Students obtain basic knowledge on theory of ionozed layer formation, basic knowledge on behavior of ionosphere and magnetosphere as well as on Sun-terrestrial physics.

Class syllabus:
Radiation acting on the atmosphere and its variation. Neutral atmosphere, hydrostatic equilibrium and height distribution of pressure and concentration. Interaction of radiation with the atmosphere. Heat balance equation, heat absorption and heat transport, temperature in the earth atmosphere. Diffusion. Photochemical and drift equilibrium.
Chapman's theory of the ionized layer in the atmosphere. Propagation of electromagnetic waves. Ionospheric sounding. Height distribution of electron density, seasonal variations. Recombination processes. Properties of different ionospheric layers, main maximum. D-layer and disturbances PCA, SID. Plasmasphere.
Movements of charged particles in electric and magnetic fields, drift movements, adiabatic invariants. Ring current and disturbances of geomagnetic field at the Earth's surface. Radiation belts.
Magnetic field of the Sun and Parker theory of the solar wind. Interaction of solar wind with geomagnetic field. Open and closed magnetosphere. Formation of the boundary between solar wind plasma and geomagnetic field and changes due to fluctuations in solar wind. Field lines and current systems in polar regions. Processes in magnetosphere. Magnetic reconnection, MHD equations, current layers, applications in magnetosphere. Aurora, magnetic storms. Shock waves and bow shocks in solar system.
Basic information on the cavity resonator between the Earth and ionosphere.

Recommended literature:

Ratcliffe, J.A.: Introduction to the ionosphere and magnetosphere. Cambridge University Press 1972.
Prolls, G.W.: Physics of the Earth's Space Environment. Springer 2004.

Languages necessary to complete the course:
English

Notes:

Past grade distribution
Total number of evaluated students: 8

A	B	C	D	E	FX
62,5	12,5	12,5	0,0	12,5	0,0

Lecturers: RNDr. Adriena Ondrášková, PhD., doc. RNDr. Sebastián Ševčík, CSc.

Last change: 04.10.2016

Approved by:

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAFZM/2-FFZa-953/15	**Course title:** Physics of the Earth
Number of credits: 0	
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: FMFI.KAFZM/2-FFZa-439/15	**Course title:** Physics of the Earth 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: 2

Recommended semester: 2.

Educational level: II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 9

A	B	C	D	E	FX
44,44	33,33	11,11	0,0	0,0	11,11

Lecturers: prof. RNDr. Peter Moczo, DrSc.

Last change:

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-434/15	Physics of the Earth Seminar (2)

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: 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: 8

A	B	C	D	E	FX
75,0	25,0	0,0	0,0	0,0	0,0

Lecturers: Univ.-Prof. Dr. Götz Bokelmann, Dr. Petr Kolínsky

Last change:

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAFZM/2-FFZa-428/15	**Course title:** Physics of the Earth's Material
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: 0

A	B	C	D	E	FX
0,0	0,0	0,0	0,0	0,0	0,0

Lecturers: doc. RNDr. Sebastián Ševčík, CSc.	
Last change: 04.09.2015	
Approved by:	

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-435/15	Potential Field Methods

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:
Scale of assessment (preliminary/final): 0/100

Learning outcomes:
Students get deeper knowledge of potential theory applications.

Class syllabus:
Potential theory and its application in geophysics, source distribution (Newtonian potential, 1/r-function, convolution theorem, Delta-distribution, special source geometries, arbitrary sources, dipole, dipole distribution, Poisson-theorem, multi-pole distribution, magnetic induction), Green's function, Green's theorem, Boundary value problem and field continuation, field transformation in Cartesian and polar coordinate system (filtering, convolution), equivalent sources, Continuity property at discontinuities, 2D potential fields (logarithmic potential, analytical signal, generalized AS), Euler- and Werner deconvolution.

Recommended literature:
Blakely, R.J.: Potential Theory in Applied Gravity and Magnetic Applications. Cambridge University Press 1995.

Languages necessary to complete the course:
English

Notes:

Past grade distribution
Total number of evaluated students: 3

A	B	C	D	E	FX
33,33	0,0	0,0	0,0	66,67	0,0

Lecturers: ao. Univ.-Prof. Dr. Bruno Meurers

Last change: 04.09.2015

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
PriF.KIHG/2-FFZa-431/15	Regional Structure (1)

Educational activities:
Type of activities: course
Number of hours:
per week: 1 **per level/semester:** 14
Form of the course: on-site learning

Number of credits: 2

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: 6

A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0

Lecturers: prof. RNDr. Miroslav Bielik, DrSc.

Last change: 04.09.2015

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-441/15	Regional Structure (2)

Educational activities:
Type of activities: lecture
Number of hours:
per week: 1 **per level/semester:** 14
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3.

Educational level: II.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 0/100

Learning outcomes:
Student get to know research approaches for better understanding the Earth`s interior and dynamics, using the Eastern Alpine region as an example.

Class syllabus:
Some elements of plate tectonics, regional geodynamics, block tectonics, Alpine evolution, Pannonian basin, Carpathians, new seismological results from seismic anisotropy, receiver functions and dispersion, constraints from paleomagnetics (block rotations), lateral escape and its potential manifestation in mantle deformation, tectonic faults in the Eastern Alps and towards the Pannonian basin, seismicity in the Eastern Alps, results from geodesy, constraints from potential field data.

Recommended literature:
Earth Science / Edward J. Tarbuck, Frederick K. Lutgens. Columbus : Merill Publishing Company, 1988
Bokelmann, G., Qorbani Chegeni, E., Bianchi, I., 2013, Seismic Anisotropy and Large-Scale Deformation of the Eastern Alps, Earth and Planetary Science Letters, doi:10.1016/j.epsl.2013.09.019.

Languages necessary to complete the course:
English

Notes:
Lectures are given in Vienna

Past grade distribution
Total number of evaluated students: 3

A	B	C	D	E	FX
0,0	66,67	0,0	33,33	0,0	0,0

Lecturers: Univ.-Prof. Dr. Götz Bokelmann, Dott. ric. Irene Bianchi
Last change: 19.04.2017
Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-161/00	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:	**Course title:**
FMFI.KJP/1-MXX-162/00	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:	**Course title:**
FMFI.KJP/1-MXX-261/00	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:	**Course title:**
FMFI.KJP/1-MXX-262/00	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:	**Course title:**
FMFI.KAFZM/2-FFZa-436/15	Seismic Exploration

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 1 / 1 **per level/semester:** 14 / 14
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 4.

Educational level: II.

Prerequisites:

Course requirements:

Learning outcomes:
Students get to know the basics of seismic exploration methods, especially of reflection seismology.

Class syllabus:
Brief review of seismic theory, partitioning of energy at an interface, Zoeppritz equations, head waves, seismic velocity, density, porosity, Gassmann and Biot equation,
resolution, Fresnel zones, seismic equipment, reflection methods, CMP method, data processing methods, Radon-transform, convolution, stacking, migration, geological interpreation, refraction method, 3D seismics, tomography, VSP, borehole tomography, 4D seismics.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 7

A	B	C	D	E	FX
42,86	14,29	28,57	0,0	14,29	0,0

Lecturers: Univ.-Prof. Dr. Götz Bokelmann, Dr. Jean-Baptiste Tary, Dr. Michael Behm, Dr. Petr Kolínsky

Last change: 19.04.2017

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-241/15	Seismic Hazard

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: 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: 8

A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0

Lecturers: doc. Mgr. Jozef Kristek, PhD., RNDr. Róbert Kysel, PhD.

Last change: 19.04.2017

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-110/15	Seismic Waves and Physics of Earthquakes (1)

Educational activities:
Type of activities: course
Number of hours:
per week: 3 **per level/semester:** 42
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 1.

Educational level: II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 8

A	B	C	D	E	FX
25,0	0,0	12,5	12,5	12,5	37,5

Lecturers: prof. RNDr. Peter Moczo, DrSc.

Last change:

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAFZM/2-FFZa-210/15	**Course title:** Seismic Waves and Physics of Earthquakes (2)
Educational activities: **Type of activities:** course **Number of hours:** **per week:** 3 **per level/semester:** 42 **Form of the course:** on-site learning	
Number of credits: 4	
Recommended semester: 2.	
Educational level: II.	
Prerequisites: FMFI.KAFZM/2-FFZa-110/15 - Seismic Waves and Physics of Earthquakes (1)	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	

Past grade distribution
Total number of evaluated students: 8

A	B	C	D	E	FX
50,0	25,0	0,0	12,5	12,5	0,0

Lecturers: prof. RNDr. Peter Moczo, DrSc.
Last change:
Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-131/15	Signal Analysis

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 1 **per level/semester:** 28 / 14
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 1.

Educational level: II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 8

A	B	C	D	E	FX
25,0	0,0	75,0	0,0	0,0	0,0

Lecturers: prof. RNDr. Peter Moczo, DrSc., Mgr. Miriam Kristeková, PhD.

Last change:

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-442/17	Special Functions in Geophysics

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: 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: 3

A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0

Lecturers: doc. RNDr. Sebastián Ševčík, CSc., RNDr. Róbert Kysel, PhD.

Last change: 16.09.2020

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAFZM/2-FFZa-231/15	**Course title:** Special Topics in Signal Analysis

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: 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: 7

A	B	C	D	E	FX
57,14	0,0	28,57	0,0	14,29	0,0

Lecturers: prof. RNDr. Peter Moczo, DrSc., Mgr. Miriam Kristeková, PhD.

Last change: 04.09.2015

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/2-MXX-115/17	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:	**Course title:**
FMFI.KTV/2-MXX-116/18	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:	**Course title:**
FMFI.KAFZM/2-FFZa-105/15	Statistical Methods of Data Analysis

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 1 / 1 **per level/semester:** 14 / 14
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 1.

Educational level: II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 9

A	B	C	D	E	FX
66,67	22,22	11,11	0,0	0,0	0,0

Lecturers: doc. Mgr. Jozef Kristek, PhD., RNDr. Róbert Kysel, PhD.

Last change: 27.03.2018

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-437/15	Structure of the Earth

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: 9

A	B	C	D	E	FX
33,33	22,22	22,22	22,22	0,0	0,0

Lecturers: Univ.-Prof. Dr. Götz Bokelmann, Dott. ric. Irene Bianchi, Dr. Jean-Baptiste Tary, Dr. Petr Kolínsky

Last change:

Approved by:

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/2-FFZa-438/15	Tectonophysics

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:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 9

A	B	C	D	E	FX
55,56	44,44	0,0	0,0	0,0	0,0

Lecturers: Univ.-Prof. Dr. Götz Bokelmann, Dr. Jean-Baptiste Tary, Dott. ric. Irene Bianchi

Last change:

Approved by:

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAFZM/2-FFZa-954/15	**Course title:** Theoretical Methods in Physics of the Earth
Number of credits: 0	
Educational level: II.	
State exam syllabus:	
Last change:	
Approved by:	

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAFZM/2-FFZa-991/15	**Course title:** Thesis Defence
Number of credits: 2	
Educational level: II.	
State exam syllabus:	
Last change:	
Approved by:	