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/3-FAA-005/00	Analytical and Numerical Methods in Celestial Mechanics

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: 10

Recommended semester: 1.

Educational level: III.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Motivation – Newton's equation of motion and orbital elements in celestial mechanics. Gravitational attraction between bodies of finite dimensions. Perturbation equations of celestial mechanics – derivation from Newton's equation of motion. Simple application to motion of the Moon. Nongravitational effects. The effect of electromagnetic radiation on motion of particles: types of osculating orbital elements, detail analytical calculation of orbital evolution up to the second order of perturbation theory, secular evolution of orbital elements, orbital resonances with planets. Influence of the solar (stellar) wind. Oort's cloud of comets and gravitational perturbations of the Galaxy – secular evolution of cometary orbits. Comparison between analytical and numerical solutions.

Recommended literature:
Brouwer D., Clemence G. M.: 1961, Methods of Celestial Mechanics, Academic Press, New York.
Murray C. D., Dermott S. F.: 1999, Solar System Dynamics, Cambridge Univ. Press
Hockney R. W., Eastwood J. W.: 1992, Computer Simulation Using Particles, J. W. Arrowsmith Ltd, Bristol
Press W. H., Flannery B. P., Teukolsky S. A., Vetterling W. T.: Numerical Recipes, Cambridge Univ. Press

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 13

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

Lecturers: doc. RNDr. Jozef Klačka, PhD.

Last change: 02.06.2015
Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-803/10	BSc Thesis Supervision

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:

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

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

Lecturers:

Last change:

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAFZM/3-FAA-501/10	**Course title:** Completion of PhD Research Project Stage
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:	
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: 7

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

Lecturers:	
Last change:	
Approved by: prof. Ing. Pavel Mach, CSc.	

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.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: 50

A	B	C	D	E	FX
92,0	2,0	0,0	0,0	6,0	0,0

Lecturers: PhDr. Alena Zemanová

Last change: 22.02.2019

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/3-MXX-102/15	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: FMFI.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: 55

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

Lecturers: PhDr. Alena Zemanová

Last change: 22.02.2019

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-806/10	Creation of Teaching Texts and Aids

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

Number of credits: 6

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: 2

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

Lecturers:

Last change:

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-809/10	Diploma Thesis Guidance

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: 1

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

Lecturers:

Last change:

Approved by: prof. Ing. Pavel Mach, CSc.

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAFZM/3-FAA-990/15	**Course title:** Dissertation Thesis Admission
Number of credits: 30	
Recommended semester: 7., 8..	
Educational level: III.	
State exam syllabus:	
Last change: 02.06.2015	
Approved by: prof. Ing. Pavel Mach, CSc.	

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-301/10	Foreign Periodical Cited in Current Contents

Educational activities:
Type of activities: independent work
Number of hours:
per week: 20 **per level/semester:** 280
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: 13

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

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-303/10	Foreign Periodical not Cited in Current Contents

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: 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

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

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAFZM/3-FAA-804/10	**Course title:** Guidance of the Students´ Research Project
Educational activities: **Type of activities:** **Number of hours:** **per week: per level/semester:** **Form of the course:** on-site learning	
Number of credits: 7	
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

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

Lecturers:	
Last change:	
Approved by: prof. Ing. Pavel Mach, CSc.	

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-302/10	Home Journal Cited in Current Contents

Educational activities:
Type of activities: independent work
Number of hours:
per week: 15 **per level/semester:** 210
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

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

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-304/10	Home Journal not Cited in Current Contents

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: 15

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: 4

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

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-703/10	Home Project Co-researcher

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:

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

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

Lecturers:

Last change:

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-101/10	Individual Study of Science and Research Resources

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: 18

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

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-102/10	Individual Study of Science and Research Resources

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: 16

A	B	C	D	E	FX
93,75	6,25	0,0	0,0	0,0	0,0

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-103/10	Individual Study of Science and Research Resources

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: 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: 13

A	B	C	D	E	FX
92,31	7,69	0,0	0,0	0,0	0,0

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-104/10	Individual Study of Science and Research Resources

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: 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: 10

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

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-702/10	International Project Co-researcher

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

Number of credits: 15

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

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

Lecturers:

Last change:

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-307/10	Non-reviewed Foreign Papers Volume

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:

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

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

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-308/10	Non-reviewed Home Papers Volume

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:

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

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

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJFB/3-FAA-006/00	Nuclear Atronomy 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: 10

Recommended semester: 2.

Educational level: III.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Basics theory of nucleosynthesis, primordial, antropogenic and cosmogenic nuclides. Principles of nuclear radiometric methods, dating, 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:
Ringwood, A. E.: Origin of the Earth and Moon. Springer-Verlag, 1979.
Cox, P. A.: The Elements on the Earth.
Dalrymple, G. B.: The Age of the Earth.
Press, F., Siever, R.: Earth. W. H. Freeman and Company, 1978.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 1

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

Lecturers: prof. RNDr. Jozef Masarik, DrSc.

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAFZM/3-FAA-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: 8

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

Lecturers:	
Last change:	
Approved by: prof. Ing. Pavel Mach, CSc.	

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-805/10	Participation in a Conference Organising Committee

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

Number of credits: 3

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

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

Lecturers:

Last change:

Approved by: prof. Ing. Pavel Mach, CSc.

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAFZM/3-FAA-950/15	**Course title:** Passing Dissertation Examination
Number of credits: 20	
Recommended semester: 3., 4..	
Educational level: III.	
State exam syllabus:	
Last change: 02.06.2015	
Approved by: prof. Ing. Pavel Mach, CSc.	

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-009/00	Planetary Cosmogony

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: 10

Recommended semester: 3.

Educational level: III.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Basic characteristics of planetary orbital motions, distribution of angular momentum and moment of inertia. The formation of protoplanetary disk, the stability and evolution, creation of solid particles and dust, formation of the planetesimals and planetary embryos. Ionized structure of planetary nebula, radiation, composition of the dust, origin of the central star in the planetary nebula, morphology of the nebula, evolution of the central star, chemical abundances of elements, radiation, dimensions and distances, magnetic fields. The formation of terrestrial and giant planets, orbital evolution and tidal interaction of the pair star-planet. The evolution of accretion disk, time scales of accretion and differentiation, meteoric evidences. Homogeneous and heterogeneous accretion. The survey of the hypothesis. Accretion and differentiation of the Earth, evolution of the mantle, scenarios of the Moon origin.

Recommended literature:
Sun Kwok: The Origin and Evolution of Planetary Nebulae. Cambridge University Press, 2000
G. A. Gurzadyan: The Physics and Dynamics of Planetary Nebulae. Springer, 1997
W. Benz et al.: From dust to terrestrial planets. Proceedings of an ISSI Workshop, Bern, Kluwer Ac. Publishers, 1999
E.H. Levy, J.I. Lunine: Protostars and Planets III. The Univ. of Arizona Press, Tuscon, 1999
V. Mannings, A.P. Boss, S.S. Pressell (Ed.): Protostars and Planets IV. The Univ. of Arizona Press, Tuscon, 2000

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: 02.06.2015
Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-001/00	Population of the Small Bodies of the Solar System (1)

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: 10

Recommended semester: 1.

Educational level: III.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Meteoroid population – components; interaction of meteoroids with the atmosphere and meteor physics; observational methods – photographic, radio, TV, meteor spectra; micrometeoroids, interplanetary dust; zodiacal light; meteoroid population – structure; sporadic meteors, activity variations, sources; selection effects; meteoroid streams - activity, structure, origin and evolution; meteor complexes, associations of potential parent bodies; influx of meteor matter on the Earth; interaction of large meteoroids with the atmosphere, falls of meteorites' accompanying effects, classification of meteorites – structure, chemical composition, mineralogy; meteor crates, ages of meteorites, origin of meteorites and their parent bodies.

Recommended literature:
Murrad E., Williams I.P.: 2002, Meteors in the Earth's Atmosphere. Cambridge, London
McDonnell J.A.M.: 1978, Cosmic Dust. John Wiley & Sons, New York, Toronto
McKinley D.W.R.: 1961, Meteor science and engineering. McGraw-Hill Comp., New York
Heide F., Wlotzka F.: 1995, Meteorites. Springer, Berlin, Heidelberg, New York
McSween H.Y.: 1999, Meteorites and their parent bodies. Cambridge Univ. Press, Cambridge.
Buchwald, F.: 1975, Handbook od iron meteorites, Vol. 1-3, Univ. of California Press, Berkeley

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 9

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

Lecturers: prof. RNDr. Vladimír Porubčan, DrSc.

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-002/00	Population of the Small Bodies of the Solar System (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: 10

Recommended semester: 2.

Educational level: III.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Discoveries of comets and theories of their origin. Oort cloud. Photometry and spectroscopy of comets. Apparent and absolute brightness. Changes of brightness – geometrical, short-term (outbursts and brightening) and secular. Photoelectric photometry of comets - input diaphragms and filters, selection of standard stars, influence of atmospheric extinction. Production of dust and numbers of molecules in the chosen column of coma. Chemical composition, structure and physical properties of cometary nuclei. Comets at the large heliocentric distances. Disintegration of comets. Characteristics of cometary spectra. Main cometary emissions and their parent molecules. Cometary tails and their dynamics. The most famous comets of the last decades. Origin and evolution of individual populations of interplanetary matter and their relationships. Discoveries of asteroids and their place in Solar system. Statistics of orbits, commensurabilities, asteroidal families. Asteroids on peculiar orbits - type Amor, Apollo, Aten, Hidalgo, Chiron. Astrometry and photometry of asteroids. Masses, sizes, shape, albedo and rotation of asteroids. Composition of asteroids, taxonomy types and their relative representation as a function of heliocentric distance. Objects of Edgeworth-Kuiper Belt. Pluto and Charon as a part of Edgeworth-Kuiper Belt. Near Earth Objects and collisions of asteroids with the Earth. Investigation of asteroids by spacecrafts. Asteroids as possible sources of primitive material. Cosmic Dust Program.

Recommended literature:
K.S. Krishna Swamy: Physics of comets, Singapore, World Sci., Publ. Co Pte Ltd., 1986.
J. Bouška, V. Vanýsek: Fyzika komet, Praha, Academia, 1967.
J.S. Lewis: Physics and Chemistry of the Solar System, London, Academic Press, 1997 (chapters VI, VII, VIII).
conference proceedings in agreement with the PhD. theme

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: doc. RNDr. Ján Svoreň, DrSc.

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-404/10	Presentation at a Department Seminar

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:

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: 6

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

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-403/10	Presentation at a Home Conference

Educational activities:
Type of activities: independent work
Number of hours:
per week: 7 **per level/semester:** 98
Form of the course: on-site learning

Number of credits: 10

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

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

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAFZM/3-FAA-402/10	**Course title:** Presentation at a Home Conference with International Participation

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: 15

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: 3

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

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-401/10	Presentation at an International Conference

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: 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: 13

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

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-704/10	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: 1

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

Lecturers:

Last change:

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAFZM/3-FAA-707/10	**Course title:** Quotation in a Home Scientific Journal
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:	
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

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

Lecturers:	
Last change:	
Approved by: prof. Ing. Pavel Mach, CSc.	

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-705/10	Quotation in a Monograph

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

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

Lecturers:

Last change:

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-706/10	Quotation in a Scientific Journal Abroad

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

Number of credits: 3

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

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

Lecturers:

Last change:

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-305/10	Reviewed Foreign Papers Volume

Educational activities:
Type of activities: independent work
Number of hours:
per week: 15 **per level/semester:** 210
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

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

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-306/10	Reviewed Home Papers Volume

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: 15

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: 5

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

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-511/15	Science Thesis (1)

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

Number of credits: 15

Recommended semester: 5., 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: 2

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

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-512/15	Science Thesis (2)

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

Number of credits: 15

Recommended semester: 5., 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: 2

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

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-513/15	Science Thesis (3)

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: 7., 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: 3

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

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-514/15	Science Thesis (4)

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: 7., 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: 1

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

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-003/00	Selected Topics of Solar 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: 10

Recommended semester: 1.

Educational level: III.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Radiative transfer in solar atmosphere: transfer equation, radiative transfer in Fraunhofer's lines; solar spectroscopy: atomic transition and excitation of atom, rates of elementary processes, spectral line broadening, solar plasma dynamics, kinetic equations, influence of magnetic field on plasma motion and aplications; photosphere: model, structure, energy balance; internal structure of the Sun and energy source: equation of stellar structure, nuclear reactions, standard model; rotation, convection and oscillations on the Sun: observations, interpretation, helioseismology; photospheric activity and magnetisms: spots, faculas, structure and evolution of the photospheric magnetic field; chromosphere: physical conditions, heating, spicules and fibrils; corona: physical conditions, structure, diagnostics, heatig; prominences: physical conditions, models, dynamics; solar flares: magnetic reconnection, models, dynamics of magnetic fields on the Sun; solar wind and heliosphere; Sun as a star.

Recommended literature:
Foukal, P.: 1989, Solar Astrophysics, John Wiley & Sons, Inc., USA
Priest, E. R.: 1982, Solar Magnetohydrodynamics, D. Reidel Publishing Company, Dordrecht Boston, London
Hundhausen, A. J.: 1972, Coronal Expansion and Solar Wind, Springer-Veralg, Berlin Heidelberg New York.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 4

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

Lecturers: doc. RNDr. Elena Dzifčáková, CSc.

Last change: 02.06.2015
Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-004/00	Selected Topics of Stellar 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: 10

Recommended semester: 2.

Educational level: III.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Internal structure depending on evolution; rotation; energy transport, convection; fundamental stellar parameters, HRD; radiative transfer in continuum and spectral line; atmosphere models, opacity, atomic databases, synthetic spectra; spectrum analysis; magnetic field, Stokes parametersm, spectropolarimetry; atmospheric chemical composition, CP stars; pulsation, oscillation, asteroseismology; double stars, interacting binaries, cataclismtic stars; observational methods, photometry, photometric systems, spectrophotometry, spectroscopy.

Recommended literature:
V.C. Reddish: 1978, Stellar Formation. Pergamon Press, Oxford
L.H. Aller and D.B. McLaughlin: 1965, Stellar Structure.Univ. of Chicago Press, Illinois
D. Gray: 1976, Observation and Analysis of Stellar Atmospheres.Willey-Interscience Publ., New York
The A-star puzzle, J. Zverko, J. Žižňovský, S. J. Adelman, W. W. Weiss (eds.), 2005, Proc. IAUS 224, Cambridge University Presss, Cambridge
T. Padhanabhan, Theoretical Astrophysics Vol. 1-2, 2001, CUP, Cambridge
D.Prialnik, An introduction to the theory of stellar structure and evolution, 2000, CUP, Cambridge

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: doc. RNDr. Jozef Klačka, PhD., RNDr. Augustín Skopal, DrSc.

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-007/00	Seminar on Astronomy and Astrophysics (1)

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: 5

Recommended semester: 1.

Educational level: III.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Own scholary work of students. Information about partial results of their diploma theses. The current astronomical news, discoveries and information from the meetings organized by the International Astronomical Union, with a focus to the research fields of astronomy in Slovakia: the interplanetary matter research, solar physics and stellar astronomy.

Recommended literature:
Proceedings from the symposia and meetings organized by the IAU
Astronomical periodicals and journals

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 14

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

Lecturers: doc. RNDr. Jozef Klačka, PhD.

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-008/00	Seminar on Astronomy and Astrophysics (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: 5

Recommended semester: 2.

Educational level: III.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Own scholary work of students. Information about partial results of their diploma theses. The current astronomical news, discoveries and information from the meetings organized by the International Astronomical Union, with a focus to the research fields of astronomy in Slovakia: the interplanetary matter research, solar physics and stellar astronomy.

Recommended literature:
Proceedings from the symposia and meetings organized by the IAU
Astronomical periodicals and journals

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 15

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

Lecturers: doc. RNDr. Jozef Klačka, PhD.

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-011/00	Seminar on Astronomy and Astrophysics (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: 5

Recommended semester: 3.

Educational level: III.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Own scholary work of students. Information about partial results of their diploma theses. The current astronomical news, discoveries and information from the meetings organized by the International Astronomical Union, with a focus to the research fields of astronomy in Slovakia: the interplanetary matter research, solar physics and stellar astronomy.

Recommended literature:
Proceedings from the symposia and meetings organized by the IAU
Astronomical periodicals and journals

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 12

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

Lecturers: doc. RNDr. Jozef Klačka, PhD.

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-012/00	Seminar on Astronomy and Astrophysics (4)

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: 5

Recommended semester: 4.

Educational level: III.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Own scholary work of students. Information about partial results of their diploma theses. The current astronomical news, discoveries and information from the meetings organized by the International Astronomical Union, with a focus to the research fields of astronomy in Slovakia: the interplanetary matter research, solar physics and stellar astronomy.

Recommended literature:
Proceedings from the symposia and meetings organized by the IAU
Astronomical periodicals and journals

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 11

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

Lecturers: doc. RNDr. Jozef Klačka, PhD.

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-013/00	Seminar on Astronomy and Astrophysics (5)

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: 5

Recommended semester: 5.

Educational level: III.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Own scholary work of students. Information about partial results of their diploma theses. The current astronomical news, discoveries and information from the meetings organized by the International Astronomical Union, with a focus to the research fields of astronomy in Slovakia: the interplanetary matter research, solar physics and stellar astronomy.

Recommended literature:
Proceedings from the symposia and meetings organized by the IAU
Astronomical periodicals and journals

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: doc. RNDr. Jozef Klačka, PhD.

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-014/00	Seminar on Astronomy and Astrophysics (6)

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: 5

Recommended semester: 6.

Educational level: III.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Own scholary work of students. Information about partial results of their diploma theses. The current astronomical news, discoveries and information from the meetings organized by the International Astronomical Union, with a focus to the research fields of astronomy in Slovakia: the interplanetary matter research, solar physics and stellar astronomy.

Recommended literature:
Proceedings from the symposia and meetings organized by the IAU
Astronomical periodicals and journals

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 12

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

Lecturers: doc. RNDr. Jozef Klačka, PhD.

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-807/10	Study Stay Abroad

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

Number of credits: 3

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: 2

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

Lecturers:

Last change:

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-801/10	Supervising and Demonstrating Work

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: 5

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: 30

A	B	C	D	E	FX
96,67	0,0	3,33	0,0	0,0	0,0

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FAA-802/10	Supervising and Demonstrating Work

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: 5

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: 11

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

Lecturers:

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJFB/3-FBF-002/00	Theoretical Methods of the Study the Molecular 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: 10

Recommended semester: 3.

Educational level: III.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
The study of statical properties:
Quantum mechanic description of energetic and reactivity of molecules (HF, post HF and DFT methods, semi empirical methods, methods of molecular mechanics, combined methods).
Study of dynamical properties:
Methods of molecular dynamics, Monte Carlo methods, analysis of the results of simulations, methods of classical and quasi classical trajectories.

Recommended literature:
O.Becker et al. Computational Biochemistry and Biophysics, Dekker, 2000
A. Szabo N. S. Ostlund: Modern Quantum Chemistry: Introduction to Advanced Electronic Structure Theory
P.W. Atkins: Molecular Quantum Mechanics, Oxford Univ. Press, 1970

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 18

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

Lecturers: prof. Ing. Pavel Mach, CSc., prof. RNDr. Ján Urban, DrSc.

Last change: 02.06.2015

Approved by: prof. Ing. Pavel Mach, CSc.