

Course descriptions

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COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAFZM/2-FAA-145/00		Course title: Asteroids			
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: FMFI.KAFZM/2-FAA-116/15 - Interplanetary Matter (1)					
Course requirements:					
Learning outcomes:					
Class syllabus: The location of stable orbits in the Solar System, resonances, families, cumulative distribution, unstable orbits. Meteorites, theories of Solar System origin. The methods (and techniques) of explorations – photometry, polarimetry, radiometry, spectroscopy, spectrophotometry, radar. The composition, albedo, taxonomic types, comparison with comets and meteorites. Near-Earth objects, the frequency of falls on Earth (craters, bolides). Nongravitational effects acting on small asteroids.					
Recommended literature: W. F. Bottke Jr. Et al., 2002, Asteroids III					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 9					
A	B	C	D	E	FX
77,78	0,0	0,0	11,11	11,11	0,0
Lecturers: Mgr. Adrián Galád, PhD.					
Last change: 15.05.2019					
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/2-FAA-152/14		Course title: Astrobiology			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 1.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 17					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: RNDr. Tomáš Paulech, PhD.					
Last change: 09.05.2016					
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/2-FAA-205/00		Course title: Astronomical Instruments			
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: Instruments and techniques for the optical region: basic types of telescopes, optical aberrations, telescope mountings and control systems, atmospheric observational effects, active and adaptive optics, ground and space based telescopes. Detectors for optical, near infrared and ultraviolet regions: the eye, photovoltaic cells, photomultipliers, image intensifiers, CCD, increasing of signal to noise ratio. Instruments for spectroscopy and polarimetry. Instruments and techniques for astronomical image processing: digitization, standard astronomical graphical formats, basic algorithms and image transforms in astronomy. Instruments for radioastronomy: detectors, receivers, radiotelescopes, radars. Instruments for solar physics: solar telescopes, narrow band filters, spectroheliograph, coronagraph.					
Recommended literature: Frederick R. Chromey: To Measure the Sky. Cambridge University press 2010 Richard Berry, James Burnell: The Handbook of Astronomical Image Processing. Willmann-Bell Inc., 2005					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 32					
A	B	C	D	E	FX
53,13	31,25	15,63	0,0	0,0	0,0
Lecturers: Ing. Pavol Zigo, PhD.					
Last change: 09.05.2016					
Approved by: prof. Ing. Pavel Mach, CSc.					

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KAFZM/2-FAA-955/15	Course title: Astrophysics
Number of credits: 2	
Educational level: II.	
State exam syllabus:	
Last change: 09.05.2016	
Approved by: prof. Ing. Pavel Mach, CSc.	

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KAFZM/2-FAA-956/15	Course title: Celestial Mechanics
Number of credits: 2	
Educational level: II.	
State exam syllabus:	
Last change: 09.05.2016	
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/2-FAA-105/00		Course title: Celestial Mechanics (1)			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 3 / 2 per level/semester: 42 / 28 Form of the course: on-site learning					
Number of credits: 6					
Recommended semester: 1.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Two-body problem. General integrals of motion. Conservation laws. Relationship between integral constants and orbital parameters. Kepler's laws. Gauss's constant, astronomical unit, masses of planets. Energy integral and limits of velocities. Elliptical, parabolic and hyperbolic motion. Solution of Kepler's equation. Orbit in space. Types of orbits in the Solar system. Ephemeris calculation. Fundamentals of orbit determination. N-body problem. General integrals. Relative coordinates, concept of perturbations, disturbing function.					
Recommended literature: Andrle, P.: Základy nebeské mechaniky, Praha, 1971 Brouwer, D., Clemence, G.: Methods of Celestial Mechanics, London 1961. Danby, J. M. A.: Fundamentals of Celestial Mechanics, Richmond, 1992 Archie E. Roy: Orbital motion, Bristol : Institute of Physics Publishing, 2005 Murray, C.D., Dermott, S.F.: Solar System Dynamics, Cambridge University Press, 1999					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 42					
A	B	C	D	E	FX
85,71	4,76	9,52	0,0	0,0	0,0
Lecturers: doc. RNDr. Leonard Kornoš, PhD.					
Last change: 07.05.2016					
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/2-FAA-106/00		Course title: Celestial Mechanics (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:					
Course requirements:					
Learning outcomes:					
Class syllabus: General integrals of the n-body motion. Disturbing function. Perturbed orbits. Small impulses and the change of orbital elements. Lagrange's planetary equations, 1-st order solution. Numerical integration of equations of motion. Restricted three-body problem. Jacobi integral. Lagrangian equilibrium points, stable and unstable solution. Tisserand invariant. Gravitational spheres. Numerical solution of n-body problem, Cowell and Encke type. Gravitational potential of an extended body. Spherically-symmetric gravitational field. Perturbations in satellite motion.					
Recommended literature: Andrle, P.: Základy nebeské mechaniky, Praha, 1971, Danby, J. M. A.: Fundamentals of Celestial Mechanics, Richmond, 1992. Murray, C.D., Dermott, S.F.: Solar System Dynamics, Cambridge Univ. Press, 1999. Brouwer, D., Clemence, G.: Methods of Celestial Mechanics, London, 1961. Archie E. Roy: Orbital motion, Bristol : Institute of Physics Publishing, 2005.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 36					
A	B	C	D	E	FX
77,78	13,89	5,56	0,0	2,78	0,0
Lecturers: doc. RNDr. Leonard Kornoš, PhD.					
Last change: 07.05.2016					
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/2-FAA-150/11		Course title: Comets			
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: FMFI.KAFZM/2-FAA-116/15 - Interplanetary Matter (1)					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature: Comets II, eds. M.C. Festou, H.U. Keller, and H.A. Weaver, The University of Arizona Press, 2004. Výber prehľadových a aktuálnych článkov, zborníky z konferencií					
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: RNDr. Štefan Gajdoš, PhD.					
Last change: 19.05.2016					
Approved by: prof. Ing. Pavel Mach, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KAFZM/2-FOZ-156/15		Course title: Computational Methods in Liquid Dynamics			
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: 4.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 1					
A	B	C	D	E	FX
0,0	0,0	0,0	0,0	100,0	0,0
Lecturers: doc. RNDr. Martin Gera, 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: FMFL.KAFZM/2-FAA-149/15		Course title: Computers in Astronomy (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: 2.					
Educational level: II.					
Prerequisites:					
Course requirements: Ongoing evaluation: individual task. Rating scale: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 100/0					
Learning outcomes: Students will acquire basic skills for work with astronomical libraries in Python. These skills will cover areas like FITS image processing, object's ephemeris prediction on celestial sphere, application of numerical integration in astronomy and visualization of obtained scientific data.					
Class syllabus: Work with Python libraries such as installation, basic set-up, input parameters, usage of functions, programming own scripts. Work with FITS images covering image calibration, segmentation and astrometric reduction. Calculation of object's ephemerides, coordinates transformation, own scripts development. Usage of Python libraries Python libraries AstroPy, SciPy, NumPy, matplotlib, rebound, SourceExtractor, and sgp4.					
Recommended literature: Mark Summerfield; Python 3 P. L. Shopbell, M. C. Britton, & R. Ebert (San Francisco: ASP), Flexible Image Transport System (FITS), 1999, NOST 100-2.0. Library Astropy: http://docs.astropy.org/en/stable/#user-documentation .					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 10					
A	B	C	D	E	FX
90,0	0,0	0,0	0,0	10,0	0,0
Lecturers: Mgr. Jozef Világi, PhD.					
Last change: 15.05.2019					

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

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KAFZM/2-FAA-249/11		Course title: Computers in Astronomy (2)			
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: FITS data format. Programming language Python: installation, basic mathematical operations, settings, data file load and save, CCD images calibration, image processing, spherical astronomy, asteroids and satellite epehemrides, own scripts. Work with libraries NumPy, SciPy, AstroPy, source extractor, matplotlib a sgp4.					
Recommended literature: Mark Summerfield; překlad Lukáš Krejčí: Python 3 Výukový kurz, Brno: Computer Press, 2013. P. L. Shopbell, M. C. Britton, & R. Ebert (San Francisco: ASP), Flexible Image Transport System (FITS), 1999, NOST 100-2.0. Oficiálna dokumentácia ku knižnici Astropy: http://docs.astropy.org/en/stable/#user-documentation .					
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: Mgr. Jiří Šilha, PhD.					
Last change: 10.09.2018					
Approved by: prof. Ing. Pavel Mach, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KAFZM/2-FAA-111/15		Course title: Cosmic Electrodynamics (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: Continuous Assessment (20%): presentation Final Examination (80%): written test and oral exam Approximate scale of final grades: A 91%, B 81%, C 71%, D 61%, E 51% Scale of assessment (preliminary/final): 20/80					
Learning outcomes: Understanding the basics of astrophysical plasma.					
Class syllabus: Plasma in the universe, General properties of plasma, Motion of charged particle in electromagnetic fields (uniform, nonuniform, static, time-varying), Drifts, Magnetic mirror effect, Adiabatic invariants, Boltzmann equation and its moments, Macroscopic transport equations.					
Recommended literature: Bittencourt, J. A. (2004) Fundamentals of plasma physics, Springer, New York, 3rd edition, 679 pp. Inan, U. a Golkowski M. (2011) Principles of Plasma Physics for Engineers and Scientists, Cambridge University Press, 286 pp.					
Languages necessary to complete the course: slovak, english					
Notes:					
Past grade distribution Total number of evaluated students: 19					
A	B	C	D	E	FX
47,37	31,58	0,0	5,26	15,79	0,0
Lecturers: RNDr. Roman Nagy, PhD.					
Last change: 21.04.2017					
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/2-FAA-112/15		Course title: Cosmic Electrodynamics (2)			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 2.					
Educational level: II.					
Prerequisites: FMFI.KAFZM/2-FAA-111/15 - Cosmic Electrodynamics (1)					
Course requirements: Continuous Assessment (100%): presentation, home assignments and test Approximate scale of final grades: A 91%, B 81%, C 71%, D 61%, E 51% Scale of assessment (preliminary/final): 100/0					
Learning outcomes: Understanding the basics of magnetohydrodynamic and plasma waves.					
Class syllabus: An introduction to magnetohydrodynamics (MHD equations, Ohm's law), Waves in plasmas, Aflvén and magnetosonic waves, Waves in cold and hot plasmas.					
Recommended literature: Bittencourt, J. A. (2004) Fundamentals of plasma physics, Springer, New York, 3rd edition, 679 pp. Inan, U. a Golkowski M. (2011) Principles of Plasma Physics for Engineers and Scientists, Cambridge University Press, 286 pp.					
Languages necessary to complete the course: slovak, english					
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: RNDr. Roman Nagy, PhD.					
Last change: 21.04.2017					
Approved by: prof. Ing. Pavel Mach, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KTF/2-FTF-213/00		Course title: Cosmology			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 2 per level/semester: 28 / 28 Form of the course: on-site learning					
Number of credits: 6					
Recommended semester: 3.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: - dynamics of the Universe - physical processes in the early Universe - anisotropies of the cosmic background radiation and the origin of galaxies					
Recommended literature: V. Balek: Kozmológia (prednáška pre 5. roč. ftf), sophia.dtp.fmph.uniba.sk/~balek J. García-Bellido: Astrophysics and Cosmology, hep-ph/0004188					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 30					
A	B	C	D	E	FX
56,67	23,33	13,33	3,33	3,33	0,0
Lecturers: doc. RNDr. Vladimír Balek, CSc.					
Last change: 02.06.2015					
Approved by: prof. Ing. Pavel Mach, CSc.					

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KAFZM/2-FAA-991/15	Course title: Diploma Thesis
Number of credits: 5	
Educational level: II.	
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: FMFL.KAFZM/2-FAA-910/00		Course title: Diploma 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: 5					
Recommended semester: 3.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Individual task of student, consultations with the diploma thesis supervisor					
Recommended literature: According to orientation of the diploma thesis					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 34					
A	B	C	D	E	FX
94,12	0,0	2,94	2,94	0,0	0,0
Lecturers: doc. RNDr. Leonard Kornoš, PhD., 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: FMFL.KAFZM/2-FAA-911/00		Course title: Diploma 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: 4.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Individual task of student, consultations with the diploma thesis supervisor					
Recommended literature: According to orientation of the diploma thesis					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 34					
A	B	C	D	E	FX
88,24	0,0	8,82	0,0	2,94	0,0
Lecturers: doc. RNDr. Leonard Kornoš, PhD., 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: FMFI.KJP/1-MXX-233/13		Course title: English Conversation Course (1)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 1., 3.					
Educational level: I., II.					
Prerequisites:					
Course requirements: Scale of assessment (preliminary/final): 100/0					
Learning outcomes:					
Class syllabus: The content of the course is general English. The language level is B2/C1 (Upper-Intermediate/Lower Advanced).					
Recommended literature: Selection of materials from Inside Out Upper-Intermediate, Cutting Edge Upper-Intermediate, New English File Upper-Intermediate, British and American newspapers and journals Recordings: authentic and semi-authentic (source: BBC, CNN, coursebook recordings)					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 144					
A	B	C	D	E	FX
59,72	18,06	9,03	2,08	1,39	9,72
Lecturers: PhDr. Elena Klátiková					
Last change: 02.06.2015					
Approved by: prof. Ing. Pavel Mach, CSc.					

COURSE DESCRIPTION

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

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAFZM/2-FAA-151/17		Course title: Exoplanets			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 2.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 3					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: RNDr. Mária Hajduková, PhD.					
Last change: 15.12.2017					
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/2-FAA-135/15		Course title: Field Practice			
Educational activities: Type of activities: practice Number of hours: per week: per level/semester: 40s 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: 15					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: RNDr. Štefan Gajdoš, PhD., doc. RNDr. Leonard Kornoš, PhD., Mgr. Jozef Világi, PhD., Mgr. Adrián Galád, PhD.					
Last change: 03.05.2016					
Approved by: prof. Ing. Pavel Mach, CSc.					

COURSE DESCRIPTION

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

COURSE DESCRIPTION

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

COURSE DESCRIPTION

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

COURSE DESCRIPTION

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

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KAFZM/2-FAA-959/15	Course title: Galactic and Extra-Galactic Astronomy
Number of credits: 2	
Educational level: II.	
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: FMFL.KAFZM/2-FAA-125/00		Course title: Galactic and Extra-Galactic Astronomy (1)			
Educational activities: Type of activities: course Number of hours: per week: 5 per level/semester: 70 Form of the course: on-site learning					
Number of credits: 6					
Recommended semester: 2.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Spherical astronomy – galactic coordinates and proper motions in galactic coordinates; Solar motion, Local standard of rest; theory of galactic rotation; Oort's equations and constants; rotation curve, dark matter; spiral structure of the Galaxy; stellar dynamics; regular and irregular forces in stellar systems; basic equation of stellar dynamics; characteristics of trajectories of stars; perturbations: epicyclic motion in galactic plane and cyclic motion in a plane normal to the galactic plane.					
Recommended literature: Binney J., Merrifield M.: 1998, Galactic Astronomy, Princeton University Press, Princeton Scheffler H., Elsasser H.: 1988, Physics of the Galaxy and Interstellar Matter, Springer-Verlag, Berlin Binney J., Tremaine S.: 2008, Galactic Dynamics, Princeton University Press, Princeton Kulikovskij P. G.: 1985, Zvezdnaja astronomija, Nauka, Moskva Mihalas D., Binney J.: 1981, Galactic Astronomy, W. H. Freeman and Company, San Francisco Mihalas D., McRae Routly P.: 1968, Galactic Astronomy, W. H. Freeman and Company, San Francisco Sparke L. S., Gallagher J. S.: 2007, Galaxies in the Universe: An Introduction. Cambridge University Press, Cambridge					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 39					
A	B	C	D	E	FX
74,36	17,95	2,56	2,56	2,56	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: FMFI.KAFZM/2-FAA-225/00		Course title: Galactic and Extra-Galactic Astronomy (2)			
Educational activities: Type of activities: course Number of hours: per week: 5 per level/semester: 70 Form of the course: on-site learning					
Number of credits: 6					
Recommended semester: 3.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Apparent distribution of stars, differential and integral function of brightness, luminosity function, models of our Galaxy and theirs comparison with number of stars; interstellar absorption; classification of galaxies, structure of galaxies, integral properties of galaxies; methods of determining galactic masses and distances; radial galactic velocities, redshift and Hubble's law; space distribution of galaxies, local group of galaxies, clusters of galaxies; active galaxies, galactic nuclears, quasars.					
Recommended literature: Jones M. H., Lambourne R. J. A.: 2004, An Introduction to Galaxies and Cosmology, Cambridge University Press, Cambridge Combes F.: 2002, Galaxies and Cosmology, Springer-Verlag, Berlin Binney J., Merrifield M.: 1998, Galactic Astronomy, Princeton University Press, Princeton Zeilik M., Gaustad J.: 1990, Astronomy, John Wiley and Sons, Inc., New York Gorbackij V. G.: 1986, Vvedenije v fiziku galaktik I skoplenij galaktik, Nauka, Moskva Kulikovskij P. G.: 1985, Zvezdnaja astronomija, Nauka, Moskva Schneider P.: 2006, Extragalactic Astronomy and Cosmology, Springer-Verlag, Berlin					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 33					
A	B	C	D	E	FX
66,67	18,18	9,09	3,03	3,03	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: FMFL.KTF/2-FTF-117/00		Course title: General Relativity			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 3 / 2 per level/semester: 42 / 28 Form of the course: on-site learning					
Number of credits: 7					
Recommended semester: 4.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: - Curved spacetime, derivation of Einstein equations and their geometrical meaning - Exact solutions of the equations: expanding Universe and cosmological models, spherically symmetric stars and black holes - Linearized gravitation, gravitational waves - Consequences of the positivity of energy: enlargement of black hole horizons, existence of singularities in spacetime					
Recommended literature: Ch. W. Misner, K. S. Thorne, J. A. Wheeler: Gravitation, W. H. Freeman and Comp., San Francisco (1973)					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 39					
A	B	C	D	E	FX
35,9	30,77	23,08	7,69	2,56	0,0
Lecturers: doc. RNDr. Vladimír Balek, 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: FMFI.KJP/1-MXX-151/00		Course title: German Language (1)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 1.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: German language is taught at three levels: beginner, intermediate and advanced. Students opt for one of them depending on whether they need to learn the fundamentals or maintain and/or improve their previous knowledge.					
Recommended literature: Vilášek, P.: Nemčina pre študentov FMFI, Na webovej stránke autora v elektronickej podobe.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 666					
A	B	C	D	E	FX
32,28	29,13	21,17	9,91	2,85	4,65
Lecturers: Mgr. Alexandra Maďarová, Mgr. Marián Mancovič					
Last change: 02.06.2015					
Approved by: prof. Ing. Pavel Mach, CSc.					

COURSE DESCRIPTION

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

COURSE DESCRIPTION

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

COURSE DESCRIPTION

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

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAFZM/2-FAA-957/15	Course title: Interplanetary Matter
Number of credits: 2	
Educational level: II.	
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: FMFI.KAFZM/2-FAA-116/15		Course title: Interplanetary Matter (1)			
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: 19					
A	B	C	D	E	FX
42,11	31,58	15,79	10,53	0,0	0,0
Lecturers: RNDr. Štefan Gajdoš, PhD.					
Last change: 27.05.2016					
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/2-FAA-117/15		Course title: Interplanetary Matter (2)			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 2.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 17					
A	B	C	D	E	FX
94,12	5,88	0,0	0,0	0,0	0,0
Lecturers: prof. RNDr. Vladimír Porubčan, DrSc., doc. RNDr. Juraj Tóth, 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: FMFI.KAFZM/2-FAA-130/00		Course title: Laboratory Practice (1)			
Educational activities: Type of activities: laboratory 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: Preparing of an observational programs for astrometry and photometry. CCD astrometry and photometry of asteroids and comets. Methods of meteor observations. Basic of TV meteors data processing.					
Recommended literature: Asteroids II, 1989, eds. R. P. Binzel, T. Gehrels, M. S. Matthews MaxIm DL User Guide – manuál k CCD kamere P. Martinez, A. Klotz: A practical Guide to CCD Astronomy, Cambridge, 1998					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 34					
A	B	C	D	E	FX
97,06	0,0	2,94	0,0	0,0	0,0
Lecturers: doc. RNDr. Leonard Kornoš, PhD., RNDr. Štefan Gajdoš, PhD., Mgr. Adrián Galád, PhD.					
Last change: 03.05.2016					
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/2-FAA-230/00		Course title: Laboratory Practice (2)			
Educational activities: Type of activities: laboratory 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: Processing of video records of H-alpha observation of active events (solar flares). Brief analysis of radio bursts.					
Recommended literature: Stix M.: 2002, The Sun - an introduction, Springer Verlag Buzek A., Durrant C.J.: 1977, Ilustrovaný slovník termínov slnečnej a slnečno-zemskej fyziky. SÚ Hurbanovo (preklad) Kleczek, J.:1987, Exercises in Astronomy, Riedel Publ. Comp., Dordrecht, Holland Minnaert, M.G. J.: 1979, Praktická astronómia, SÚ Hurbanovo (preklad)					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 33					
A	B	C	D	E	FX
90,91	0,0	3,03	3,03	3,03	0,0
Lecturers: Mgr. Jozef Világi, PhD., Ing. Pavol Zigo, 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: FMFI.KTV/2-MXX-110/00		Course title: Physical Education and Sport (1)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 1.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Practicing of the students' game skills in collective sports: basketball, volleyball, football, floorball and hockey. Mastering of the basic technique of a particular sport discipline in other sports. In paddling, basic training on still and slightly flowing water. Development of coordination skills, improvement of articular mobility and cardiovascular system.					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 1433					
A	B	C	D	E	FX
99,16	0,56	0,0	0,0	0,0	0,28
Lecturers: PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Ondrej Podkonický, Mgr. Jana Leginusová, Mgr. Tomáš Kuchár, PhD., PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek					
Last change: 02.06.2015					
Approved by: prof. Ing. Pavel Mach, CSc.					

COURSE DESCRIPTION

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

COURSE DESCRIPTION

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

COURSE DESCRIPTION

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

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAFZM/2-FAA-248/15		Course title: Planetary Cosmogony			
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: 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: 16					
A	B	C	D	E	FX
93,75	0,0	0,0	0,0	6,25	0,0
Lecturers: doc. RNDr. Juraj Tóth, PhD.					
Last change: 07.05.2016					
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/2-FAA-144/00		Course title: Population of Meteoroids			
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: FMFI.KAFZM/2-FAA-117/15 - Interplanetary Matter (2)					
Course requirements:					
Learning outcomes:					
Class syllabus: Definition of meteoroid, division. Flight through the atmosphere, basic equations of meteor physics. Methods of observations. Masses, densities, velocities, radiant, orbits, methods of determination, databases. Meteor spectra, composition of meteoroids. Activity of shower and sporadic population. Diurnal and annual variation in rates of sporadic meteors, radiant, sources. Nongravitational effects. Selection effects. Micrometeorites. Flux of meteoric matter on the Earth. Zodiacal light. Spatial structure of meteor population and relation to other components of interplanetary matter.					
Recommended literature: Murrad E., Williams I.P.: 2002, Meteors in the Earth's Atmosphere. Cambridge, London McKinley D.W.R.: 1961, Meteor science and engineering. McGraw-Hill Comp., New York, London					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 18					
A	B	C	D	E	FX
83,33	11,11	5,56	0,0	0,0	0,0
Lecturers: prof. RNDr. Vladimír Porubčan, DrSc.					
Last change: 09.05.2016					
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/2-FAA-245/00		Course title: Radiative Transfer in Stellar Atmospheres			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 4.					
Educational level: II.					
Prerequisites: FMFI.KAFZM/2-FAA-101/00 - Theoretical Astrophysics (1)					
Course requirements:					
Learning outcomes:					
Class syllabus: Radiative field, transfer equation, equation of statistic equilibrium, absorption coefficient in spectral line, two-levels atom, solution of transfer equation, redistribution of radiation, multi-levels non-LTE problem, model atmosphere, radiative transfer in moving environment, theoretic problems of solar spectroscopy.					
Recommended literature: Mihalas, Dimitri: 1978, Stellar Atmospheres, W. H. Freeman & comp., San Francisco					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 13					
A	B	C	D	E	FX
84,62	15,38	0,0	0,0	0,0	0,0
Lecturers: doc. RNDr. Petr Heinzl, 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: FMFL.KJP/1-MXX-161/00		Course title: Russian Language (1)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 1.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The subject provides a course in Russian language for beginners.					
Recommended literature: The textbook has not been published. It is at students' disposal in an electronic format.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 654					
A	B	C	D	E	FX
60,4	15,9	10,09	4,74	1,83	7,03
Lecturers: PhDr. Elena Klátiková					
Last change: 02.06.2015					
Approved by: prof. Ing. Pavel Mach, CSc.					

COURSE DESCRIPTION

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

COURSE DESCRIPTION

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

COURSE DESCRIPTION

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

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KAFZM/2-FAA-240/00		Course title: Selected Problems in Astrophysics			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 3.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Exoplanets, basic terms, planets of the Solar system, detection methods of exoplanets, properties, clasification, interiors, atmospheres of exoplanets, formation and evolution. Brown dwarfs, observed properties, spectral clasification, formation and evolution, interiors and atmospheres.					
Recommended literature: Cassen et al. 2006, Extrasolar planets Perryman 2011, The Exoplanet Handbook Seager 2010, Exoplanets Selected papers from journals					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 23					
A	B	C	D	E	FX
78,26	21,74	0,0	0,0	0,0	0,0
Lecturers: RNDr. Ján Budaj, CSc.					
Last change: 28.04.2016					
Approved by: prof. Ing. Pavel Mach, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KAFZM/2-FAA-141/00		Course title: Selected Topics in History of Astronomy			
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: 2					
Recommended semester: 2.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Origin of astronomy; Astronomy of ancient cultures; Astronomy of Greek philosophers: Aristarchos, Hipparchos; Almagest; Ptolemaios and the geocentric conception of the world; Astronomy in the middle ages; Copernicus and the heliocentric system; Gaileo Galilei; Kepler; Newton and developments of the celestial mechanics					
Recommended literature: Horský, Z., Plavec, M.: Poznávání vesmíru, Orbis, Praha 1962 Grygar, J., Horský, Z., Mayer, P.: Vesmír, Praha 1983 Perel': Vývin predstáv o vesmíre, Osveta, Bratislava 1969					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 26					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: doc. RNDr. Juraj Tóth, 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: FMFI.KAFZM/2-FAA-120/00		Course title: 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: 2					
Recommended semester: 1.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Own scientific work of students. Publication of partial results from diploma thesis. Actual astronomical news and discoveries presented at IAU meetings, relating chiefly to the research fields investigated in Slovakia: interplanetry matter, solar physics, stellar astronomy.					
Recommended literature: Proceedings from the IAU symposia and conferences Astronomical journals					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 37					
A	B	C	D	E	FX
94,59	5,41	0,0	0,0	0,0	0,0
Lecturers: doc. RNDr. Leonard Kornoš, 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: FMFI.KAFZM/2-FAA-121/00		Course title: 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: 2					
Recommended semester: 2.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Own scientific work of students. Publication of partial results from diploma thesis. Actual astronomical news and discoveries presented at IAU meetings, relating chiefly to the research fields investigated in Slovakia: interplanetry matter, solar physics, stellar astronomy.					
Recommended literature: Proceedings from the IAU symposia and conferences Astronomical journals					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 34					
A	B	C	D	E	FX
94,12	0,0	5,88	0,0	0,0	0,0
Lecturers: doc. RNDr. Leonard Kornoš, 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: FMFI.KAFZM/2-FAA-220/00		Course title: 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: 3					
Recommended semester: 3.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Own scientific work of students. Publication of partial results from diploma thesis. Actual astronomical news and discoveries presented at IAU meetings, relating chiefly to the research fields investigated in Slovakia: interplanetry matter, solar physics, stellar astronomy.					
Recommended literature: Proceedings from the IAU symposia and conferences Astronomical journals					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 32					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: doc. RNDr. Leonard Kornoš, 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: FMFI.KAFZM/2-FAA-221/00		Course title: 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: 3					
Recommended semester: 4.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Own scientific work of students. Publication of partial results from diploma thesis. Actual astronomical news and discoveries presented at IAU meetings, relating chiefly to the research fields investigated in Slovakia: interplanetry matter, solar physics, stellar astronomy.					
Recommended literature: Proceedings from the IAU symposia and conferences Astronomical journals					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 34					
A	B	C	D	E	FX
94,12	2,94	0,0	2,94	0,0	0,0
Lecturers: doc. RNDr. Leonard Kornoš, 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: FMFI.KAFZM/2-FAA-243/00		Course title: Solar Corona			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 4.					
Educational level: II.					
Prerequisites: FMFI.KAFZM/2-FAA-101/00 - Theoretical Astrophysics (1)					
Course requirements:					
Learning outcomes:					
Class syllabus: Basic solar data. Equipments for solar corona observation, obsevation data. Interpretation of corona observation in optical region. EUV corona. Activity cycle in solar corona. Features in solar corona, prominences, cororonal transients (CME), coronal holes. Corona in radio and RTG spectral region.					
Recommended literature: Physics of the Solar Corona: An Introduction with Problems and Solutions / Aschwanden, M.J. : Springer Praxis Books, 2006					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 6					
A	B	C	D	E	FX
66,67	33,33	0,0	0,0	0,0	0,0
Lecturers: doc. RNDr. Jaroslav Dudík, PhD.					
Last change: 27.04.2016					
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/2-FAA-201/15		Course title: Solar Physics			
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: 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: 18					
A	B	C	D	E	FX
83,33	16,67	0,0	0,0	0,0	0,0
Lecturers: doc. RNDr. Jaroslav Dudík, PhD.					
Last change: 27.04.2016					
Approved by: prof. Ing. Pavel Mach, CSc.					

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KAFZM/2-FAA-958/15	Course title: Solar Physics
Number of credits: 2	
Educational level: II.	
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: FMFI.KAFZM/2-FAA-147/00		Course title: Spectroscopy in Astronomy			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 1.					
Educational level: II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Spectral analysis. Fourier transforms. Spectrographs, diffraction gratings, interferometers, interference filters, detectors, spectrum calibration. Instrumental profile. Measurement of instrumental profile and correction for instrumental profile. Noise and noise filters. Scattered light, correction for scattered light. Determination of stellar rotation and stellar turbulence from spectral line profiles. Spectroscopic diagnostics of optical thin plasma.					
Recommended literature: Gray, David F.: 1976, The Observation and Analysis of Stellar Photospheres, John Wiley and sons, New York-London-Sydney-Toronto scientific paper and proceedings					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 10					
A	B	C	D	E	FX
70,0	10,0	20,0	0,0	0,0	0,0
Lecturers: doc. RNDr. Jaroslav Dudík, PhD.					
Last change: 27.04.2016					
Approved by: prof. Ing. Pavel Mach, CSc.					

COURSE DESCRIPTION

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

COURSE DESCRIPTION

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

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAFZM/2-FAA-101/00		Course title: Theoretical Astrophysics (1)			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 3 / 2 per level/semester: 42 / 28 Form of the course: on-site learning					
Number of credits: 6					
Recommended semester: 1.					
Educational level: II.					
Prerequisites:					
Course requirements: Continuous Assessment (20%): home assignments Final Examination (80%): written test and oral exam Approximate scale of final grades: A 91%, B 81%, C 71%, D 61%, E 51% Scale of assessment (preliminary/final): 20/80					
Learning outcomes: Understanding the basics of radiation transfer in stellar atmospheres.					
Class syllabus: Introduction (definitions), Absorption and emission coefficient, Transfer equation, Radiative equilibrium, Grey atmosphere, Continuum absorption coefficient, Model atmosphere (hydrostatic equilibrium, temperature distribution, ...), Line absorption coefficient, Behaviour of spectral lines, Chemical analysis, Stellar rotation, Turbulence in stellar atmospheres.					
Recommended literature: LeBlanc, F. (2010) An Introduction to Stellar Astrophysics, Wiley, 352 pp. Gray, D. F. (1992) The Observation and Analysis of Stellar Photospheres, Cambridge University Press, 452 pp. Mihalas, D. (1978) Stellar Atmospheres, W. H. Freeman, 632 pp.					
Languages necessary to complete the course: slovak, english					
Notes:					
Past grade distribution Total number of evaluated students: 39					
A	B	C	D	E	FX
48,72	20,51	15,38	7,69	5,13	2,56
Lecturers: RNDr. Roman Nagy, PhD.					
Last change: 21.04.2017					

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/2-FAA-102/00		Course title: Theoretical Astrophysics (2)			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 3 / 2 per level/semester: 42 / 28 Form of the course: on-site learning					
Number of credits: 6					
Recommended semester: 2.					
Educational level: II.					
Prerequisites:					
Course requirements: Continuous Assessment (20%): home assignments Final Examination (80%): written test and oral exam Approximate scale of final grades: A 91%, B 81%, C 71%, D 61%, E 51% Scale of assessment (preliminary/final): 20/80					
Learning outcomes: Understanding the basics of the theory of stellar structure and evolution.					
Class syllabus: Introduction, The equations of stellar evolution, Properties of matter and energy transport, Nuclear reactions, Equilibrium stellar configurations, The stability of stars, The pre-main-sequence phase, Stellar evolution on the main sequence, Evolution away from main-sequence, Final stages of stellar evolution.					
Recommended literature: Prialnik, D. (2009) An Introduction to the Theory of Stellar Structure and Evolution, Cambridge University Press, 2nd edition, 328 pp. LeBlanc, F. (2010) An Introduction to Stellar Astrophysics, Wiley, 352 pp.					
Languages necessary to complete the course: slovak, english					
Notes:					
Past grade distribution Total number of evaluated students: 41					
A	B	C	D	E	FX
51,22	19,51	14,63	9,76	2,44	2,44
Lecturers: RNDr. Roman Nagy, PhD.					
Last change: 21.04.2017					
Approved by: prof. Ing. Pavel Mach, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJFB/2-FBF-141/11		Course title: Theoretical Fundamentals of Molecular Spectroscopy			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 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
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.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KAFZM/2-FAA-241/00		Course title: Variable Stars			
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: Definition of variability of stars, intrinsic variables, regular and irregular variables, rotation, convection, magnetic field, pulsation, stellar wind, asteroseismology, variability of stars across HRD					
Recommended literature: Zdeňek Miklášek: Proměnné hvězdy – Skripta. Přírodovědecká fakulta Masarykovy univerzity v Brně, Brno 2002					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 14					
A	B	C	D	E	FX
71,43	28,57	0,0	0,0	0,0	0,0
Lecturers: RNDr. Theodor Pribulla, CSc.					
Last change: 02.06.2015					
Approved by: prof. Ing. Pavel Mach, CSc.					