

Course descriptions

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COURSE DESCRIPTION

| | | | | | |
|---|-------|--|------|------|-------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KEF/1-FYZ-232/15 | | Course title: Advanced Programming | | | |
| Educational activities: Type of activities: lecture / practicals Number of hours: per week: 1 / 2 per level/semester: 13 / 26 Form of the course: on-site learning | | | | | |
| Number of credits: 4 | | | | | |
| Recommended semester: 6. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Continuous assessment: elaboration of homework for individual lectures. Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: The graduate of the course will acquire the skills necessary for the numerical solution of simple physical problems and will learn the basic algorithms of numerical calculations. | | | | | |
| Class syllabus: Numerical stability of simple iteration schemes. Transition from a continuous problem to a discrete one. Numerical solution of the wave equation. Nonlinear iteration schemes. Numerical calculation of integrals. Random numbers. Differential equations: Runge-Kutta methods. Systems of differential equations. Simple physical models, firing method, time evolution of nonlinear physical models, Brownian motion. Simple integral equation, Optimization. | | | | | |
| Recommended literature: W. H. Press et al.: Numerical Recipes. Cambridge Univ. Press, 1992 | | | | | |
| Languages necessary to complete the course: Slovak, English | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 187 | | | | | |
| A | B | C | D | E | FX |
| 56,68 | 10,16 | 9,63 | 4,81 | 7,49 | 11,23 |
| Lecturers: prof. RNDr. Peter Markoš, DrSc., doc. RNDr. Peter Papp, PhD. | | | | | |
| Last change: 09.03.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | |
|---|--|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KAG/1-FYZ-115/13 | Course title: Algebra and Geometry (1) |
| Educational activities: Type of activities: lecture / practicals Number of hours: per week: 3 / 1 per level/semester: 39 / 13 Form of the course: on-site learning | |
| Number of credits: 5 | |
| Recommended semester: 3. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: Continuous assessment: test Examination: written and oral examination Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 20/80 | |
| Learning outcomes: After completing the course the student will master the basic concepts and methods of linear algebra will be able to use them in geometry and physics. | |
| Class syllabus: Sets and representations, fields and vector spaces, basics of matrix calculus, systems of linear equations, linear subspaces and linear independence, basis and dimension, linear representations, matrix of linear representation, inverse matrices and transition matrices, base change, affine subspaces, determinants. | |
| Recommended literature: Linear Algebra and Geometry: A Journey of Three Dimensions with Overlaps in Related Fields / Pavol Zlatoš. Bratislava: Albert Marenčin, 2011; electronic version available at http://thales.doa.fmph.uniba.sk/zlatos/la/LAG_A4.pdf We grow linear algebra / Luboš Motl, Miloš Zahradník. Prague: Karolinum, 2002 Lectures on Linear Algebra and Geometry / Július Korbaš, Štefan Gyurki. UK Publishing House, Bratislava, 2013 | |
| Languages necessary to complete the course: Slovak, English | |
| Notes: | |

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|--|-------|-------|-------|-------|------|
| Past grade distribution | | | | | |
| Total number of evaluated students: 407 | | | | | |
| A | B | C | D | E | FX |
| 14,25 | 18,92 | 19,16 | 16,22 | 24,57 | 6,88 |
| Lecturers: prof. RNDr. Pavol Zlatoš, PhD., Mgr. Nina Hronkovičová | | | | | |
| Last change: 18.05.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|--|-----|---|-----|-----|-------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAFZM/1-OZE-343/15 | | Course title: Automated Measurements in Physics | | | |
| Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 3 | | | | | |
| Recommended semester: 8. | | | | | |
| Educational level: I. | | | | | |
| 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 | 0,0 | 0,0 | 33,33 |
| Lecturers: doc. RNDr. Mário Janda, PhD., RNDr. Imrich Morva, PhD. | | | | | |
| Last change: 02.06.2015 | | | | | |
| Approved by: | | | | | |

STATE EXAM DESCRIPTION

| | |
|---|-------------------------------------|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KJFB/1-OZE-991/15 | Course title: BSc Project |
| Number of credits: 8 | |
| Recommended semester: 7., 8.. | |
| Educational level: I. | |
| State exam syllabus: | |
| Last change: 02.06.2015 | |
| Approved by: | |

COURSE DESCRIPTION

| | |
|--|--|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI-PriF.KBCh/1-KXX-004/20 | Course title: Basic Chemical Calculation |
| Educational activities: Type of activities: seminar Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | |
| Number of credits: 2 | |
| Recommended semester: 1. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: Two written test with 30 and 70 points during the semester. A: 90%, B: 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 100/0 | |
| Learning outcomes: Overview of high school curriculum: types of chemical formulas, methods of expressing the amount of chemical substances, composition of solutions, definition and determination of oxidation number and its use in nomenclature and redox reactions. Learn to write non-redox and redox chemical reactions. Mastering stoichiometric calculations. | |
| Class syllabus: Basic quantities used in chemical calculations: amount of substance, volume, mass, the number of particles. The relationship between the amount of substance and the volume of an ideal gas. Quantities expressing the composition of solutions. Calculations with mass fraction and mass concentration. Balance equations. Calculations with molality, volume fraction and mass concentration. Recalculations of different ways of composition of solutions. Solubility and preparation of saturated solutions. Stoichiometry of chemical compounds. Stoichiometry of chemical equations. | |
| Recommended literature: Silný, P. a kol.: Úlohy a modely usmerňovania úloh zo všeobecnej chémie. Expol Pedagogika, 1999. Fajnor, V., Luptáková, V. a Tatiersky, J.: Cvičenia z anorganickej chémie pre biológov. 2. vyd. Bratislava : UK, 2003. Ulická, E., Ulický, L.: Príklady zo všeobecnej a anorganickej chémie. ALFA, SNTL 1984. Tatiersky, J.: Základné chemické výpočty. 2. vyd. Bratislava : UK, 2013. | |
| Languages necessary to complete the course: Slovak, English | |
| Notes: | |

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|--|-----|-----|-----|-----|-----|
| 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: prof. RNDr. Jozef Nosek, DrSc., doc. RNDr. Martin Putala, CSc. | | | | | |
| Last change: 15.03.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | |
|---|---|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KEF/2-FOL-116/15 | Course title: Basic Electronics |
| Educational activities: Type of activities: lecture / laboratory practicals Number of hours: per week: 3 / 3 per level/semester: 39 / 39 Form of the course: on-site learning | |
| Number of credits: 7 | |
| Recommended semester: 7. | |
| Educational level: I., II. | |
| Prerequisites: | |
| Course requirements: Continuous assessment: work on practical exercises (100%). The condition for granting credits is the presentation of a semester project. Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 100/0 | |
| Learning outcomes: The student will understand the principles of using basic building blocks (resistor, inductance, capacitance, diode, transistor) in digital and analog circuits. They will understand the principles and use of basic digital and analog circuits (gates, counters, timers, operational amplifier, A / D and D / A converters, Arduino microprocessor system), principles of generating harmonic and non-harmonic signals and linear and pulse power supplies. They will be able to analyze basic circuits and use them to design simple electronic circuits with the required functionality. He will also gain practical experience with the construction and revitalization of simple electronic circuits. | |
| Class syllabus: Semiconductor diode and transistor and their basic connections. Transistor in switching mode, TTL digital circuits and their use. Basic logic circuits. Comparator. Timer 555. D / A and A / D converters. Arduino microprocessor system. Nodal potential method. Analysis of linear circuits in time and frequency domain. Linear model of transistor and operational amplifier. Basic circuits with operational amplifier. Positive feedback and oscillator principles. Power supplies and rectifiers. | |
| Recommended literature: The art of electronics / Paul Horowitz, Winfield Hill. New York : Cambridge University Press, 1989 | |
| Languages necessary to complete the course: English | |
| Notes: | |

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|---|-----|------|-----|-----|------|
| Past grade distribution | | | | | |
| Total number of evaluated students: 101 | | | | | |
| A | B | C | D | E | FX |
| 95,05 | 0,0 | 3,96 | 0,0 | 0,0 | 0,99 |
| Lecturers: doc. RNDr. František Kunderacik, CSc., RNDr. Matej Klas, PhD., doc. RNDr. Juraj Országh, PhD. | | | | | |
| Last change: 27.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|--|-----|---|-----|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI-PriF.KJCh/1-KXX-014/20 | | Course title: Basic Laboratory Practice | | | |
| Educational activities: Type of activities: practicals Number of hours: per week: 4 per level/semester: 52 Form of the course: on-site learning | | | | | |
| Number of credits: 4 | | | | | |
| Recommended semester: 2. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Regular tests and written protocols. A:90%, B:80%, C:70%, D:60%, E:50% Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: While working in the laboratory, the student will gain basic practical experience and skills in a chemical laboratory. | | | | | |
| Class syllabus: Physical quantities and units. Laboratory glassware. Weighing, measuring the volume of liquid. Preparation and dilution of solutions. Quantitative analysis. Basic laboratory operations (crystallization, filtration, decantation, drying, etc.) | | | | | |
| Recommended literature: Nagyová I., Melichová Z., Kmeťová J.: Laboratórna technika. FPV UMB, Banská. Bystrica, 2010. Tatiersky J.: Základné chemické výpočty. UK, Bratislava, 2011. Galamboš M., Tatiersky J., Krivosudský L. a kol.: Názvoslovie anorganických látok. UK, Bratislava, 2021. Fajnor, V., Luptáková, V. a Tatiersky, J.: Cvičenia z anorganickej chémie pre biológov. 2. vyd. Bratislava : UK, 2003. | | | | | |
| Languages necessary to complete the course: Slovak, English | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 0 | | | | | |
| A | B | C | D | E | FX |
| 0,0 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |

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|---|
| Lecturers: doc. RNDr. Martin Putala, CSc., prof. RNDr. Jozef Nosek, DrSc., PaedDr. Anna Drozdíková, PhD. |
| Last change: 15.03.2022 |
| Approved by: |

COURSE DESCRIPTION

| | |
|--|---|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI-PriF.KAgCh/1-KXX-005/20 | Course title: Basics of Chemistry (1) |
| Educational activities: Type of activities: lecture / seminar Number of hours: per week: 2 / 3 per level/semester: 26 / 39 Form of the course: on-site learning | |
| Number of credits: 5 | |
| Recommended semester: 1. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: Regular tests, final exam. A:90%, B:80%, C:70%, D:60%, E:50% | |
| Learning outcomes: The student is able to define concepts, quantities and laws in the field of chemistry, can explain the principles of chemical processes, apply knowledge in solving chemical problems related to everyday life. He/she knows the connections between the composition, structure and properties of substances. | |
| Class syllabus: Basic concepts and most important constants. Atomic nucleus; nuclear transformations; nuclear reactions. Electron shell of an atom; quantum numbers, orbitals, electron configuration of chemical elements. Periodic table of elements, classification of elements. Strong and weak interactions between particles, chemical bonding. Electronegativity of an atom. Oxidation number. Nomenclature. Charge number. Binding polarity. Molecule structure; localized electron pair theory. Polarity of molecules and substances. Isomerism. Group states of substances. Systems of substances - pure substance, element, compound, mixture. Solutions; composition of solutions. Chemical reactions, chemical equations. Types of chemical reactions. Thermodynamics and rate of chemical reactions, chemical equilibrium. Acids and bases, acid-base reactions, hydrolysis of salts. The concept of pH, strength and saturation of acids and bases. Redox reactions. Precipitation reactions. Complexation reactions. | |
| Recommended literature: Galamboš, M. a i.: Názvoslovie anorganických látok. 2. oprav. a rozš. vyd. Bratislava: Univerzita Komenského, 2011. Žúrková, Ľ. a i.: Všeobecná chémia. 1. vyd. Bratislava : SPN, 1985. Krätsmár-Šmogrovič a kol.: Všeobecná a anorganická chémia, vyd. Martin, Osveta 2007. | |
| Languages necessary to complete the course: Slovak, English | |

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| Notes: | | | | | |
| Past grade distribution | | | | | |
| Total number of evaluated students: 3 | | | | | |
| A | B | C | D | E | FX |
| 33,33 | 0,0 | 0,0 | 0,0 | 0,0 | 66,67 |
| Lecturers: RNDr. Jana Chrappová, PhD. | | | | | |
| Last change: 21.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | |
|---|---|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI-PriF.KAgCh/1-KXX-015/20 | Course title: Basics of Chemistry (2) |
| Educational activities: Type of activities: lecture / seminar Number of hours: per week: 2 / 3 per level/semester: 26 / 39 Form of the course: on-site learning | |
| Number of credits: 5 | |
| Recommended semester: 2. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: Regular tests, final exam. A:90%, B:80%, C:70%, D:60%, E:50% | |
| Learning outcomes: The student will gain basic knowledge about common chemical elements and their compounds, will know their properties, use in everyday life and their impact on living organisms and the environment. He knows the basic division of organic substances, their properties and impact on the environment. | |
| Class syllabus: 1. Hydrogen, alkali metals, alkaline earth metals, water, water hardness. 2. Aluminum, carbon, silicon, nitrogen, phosphorus, greenhouse gases, glass and ceramics. 3. Oxygen, sulfur, ozone, acid rain. 4. Halogens, rare gases. 5. Chromium, manganese, iron, steel, corrosion. 6. Copper subgroup and zinc subgroup, amalgam. 7. Characteristics and distribution of organic substances 8. Bonding of atoms, chemical formulas of organic compounds, nomenclature 9. Acid-base equilibria in organic chemistry, electron effects 10. Hydrocarbons 11. Hydrocarbon derivatives (X, OH, N) 12. Hydrocarbon derivatives (C=O) | |
| Recommended literature: Silný P., Brestenská, B. Prehľad chémie 1, SPN, 2000. Zahradník, P., Kollárová, M. Prehľad chémie 2, SPN, 2002. Krätsmár-Šmogrovič a kol.: Všeobecná a anorganická chémia, vyd. Martin, Osveta 2007 | |
| Languages necessary to complete the course: Slovak, English | |
| Notes: | |

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|--|-----|-----|-----|-----|-------|
| Past grade distribution | | | | | |
| Total number of evaluated students: 1 | | | | | |
| A | B | C | D | E | FX |
| 0,0 | 0,0 | 0,0 | 0,0 | 0,0 | 100,0 |
| Lecturers: RNDr. Jana Chrappová, PhD., Mgr. Henrieta Stankovičová, PhD. | | | | | |
| Last change: 15.03.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | |
|---|---|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KMANM+KJFB/1-BMF-110/15 | Course title: Basics of Mathematics (1) |
| Educational activities: Type of activities: lecture / practicals Number of hours: per week: 4 / 4 per level/semester: 52 / 52 Form of the course: on-site learning | |
| Number of credits: 8 | |
| Recommended semester: 3. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: Preliminary evaluation: 3 written partial exams (100%) Final exam: oral (45%) / written (55%) Indicative evaluation scale: A 90%, B 80%, C 70%, D 65%, E 55% Scale of assessment (preliminary/final): 40/60 Scale of assessment (preliminary/final): 40/60 | |
| Learning outcomes: After completing the course, students will gain basic knowledge and skills of linear algebra and geometry and differential calculus for functions of one real variable. | |
| Class syllabus: Linear algebra and geometry (determinants, matrices, systems of linear equations, linear spaces, linear mappings, scalar and cross products, quadratic forms). Differential calculus for functions of one real variable (limits and continuity, the derivative and differentiability, main theorems of the differential calculus and their consequences, Taylor's formula, graphing a function). | |
| Recommended literature: Matematika 1 : Pre štúdium technických vied / I. Kľuvánek...[et al.]. Bratislava : SVTL, 1966 Matematika 1 : Príručka pre vysoké školy technické / Ján Ivan. Bratislava : Alfa, 1984 Lineárna algebra a geometria : Cesta z troch rozmerov s presahmi do príbuzných odborov / Pavol Zlatoš. Bratislava : Albert Marenčin, 2011 Zbierka úloh z vyššej matematiky : 1. časť / Jozef Eliaš, Ján Horváth, Juraj Kajan. Bratislava : Alfa, 1971 Zbierka úloh z vyššej matematiky : 2. časť / Jozef Eliaš, Ján Horváth, Juraj Kajan. Bratislava : Slovenské vydavateľstvo technickej literatúry, 1966 Zbierka úloh z vyššej matematiky : 3. časť / Jozef Eliaš, Ján Horváth, Juraj Kajan. Bratislava : Slovenské vydavateľstvo technickej literatúry, 1967 | |
| Languages necessary to complete the course: | |

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|--|-------|-------|------|-------|-------|
| Notes: | | | | | |
| Past grade distribution | | | | | |
| Total number of evaluated students: 162 | | | | | |
| A | B | C | D | E | FX |
| 8,02 | 11,11 | 14,81 | 14,2 | 20,99 | 30,86 |
| Lecturers: doc. RNDr. Eugen Viszus, CSc., RNDr. Radoslav Böhm, PhD. | | | | | |
| Last change: 16.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | |
|---|---|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KAG/1-KXX-007/20 | Course title: Basics of Mathematics (1) |
| Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 2 per level/semester: 26 / 26 Form of the course: on-site learning | |
| Number of credits: 6 | |
| Recommended semester: 1. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: The student can get 50% for exercises and 50% for the final exam. The student must obtain at least half of the points for the exercises in order to pass to the final exam. During the teaching part of the semester, the student obtains points via written homework assignments. The final exam consists of a passfail test (10%) and a regular test (20% examples, 20% theoretical questions). Successful completion (8 points out of 10 points) of the passfail test is a necessary condition for admission to the regular test. To successfully pass the final exam, it is necessary to obtain at least half of the points together for both of the final exam tests. Grading: A (100-91), B (90-81), C (80-71), D (70-61), E (60-51), Fx (50-0). Scale of assessment (preliminary/final): Preliminary assessment 50% (written homework assignments) / 50% final exam (10% passfail and 40% regular test). | |
| Learning outcomes: Students will gain the necessary skills in manipulation with numbers, mathematical expressions, elementary functions. They will expand their knowledge of geometry. | |
| Class syllabus: <ol style="list-style-type: none"> 1. Mathematical terminology and mathematical logic. Basics of proper mathematical expression and designation. 2. Logical formulae and proofs. Types of mathematical proofs illustrated in elementary examples. 3. Sets and number sets (basic operations with numbers and expressions, numbers, various notations, fractions). Numbers and their geometric representation on a line (absolute value and its geometric meaning). 4. Elementary number theory, divisibility, prime numbers, compound numbers. 5. Expressions, linear and quadratic expressions with variables. Properties of mathematical operations (commutation, distribution, simplification, etc.) 6. Elementary functions (polynomial, linear, quadratic, n-th power and n-th root, trigonometric, exponential, logarithmic functions, their properties and calculation). The graph of a real function and its basic properties. | |

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|--|-------|-------|-----|------|-------|
| 7. Equations and inequalities of one variable (linear and quadratic, with absolute value, with n-th power and n-th root, trigonometric, exponential, logarithmic). Calculator vs. adjustment before enumeration. | | | | | |
| Recommended literature: Základy matematiky / Mário Boroš : Ikar, 2016 Seminár z matematiky 1-3 / Zbyněk Kubáček, Ján Žabka : Mapa Slovakia | | | | | |
| Languages necessary to complete the course: Slovak, English | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 18 | | | | | |
| A | B | C | D | E | FX |
| 0,0 | 27,78 | 22,22 | 0,0 | 5,56 | 44,44 |
| Lecturers: RNDr. Martina Bátorová, PhD. | | | | | |
| Last change: 21.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|--|---|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KMANM+KJFB/1-BMF-150/15 | Course title: Basics of Mathematics (2) |
| Educational activities: Type of activities: lecture / practicals Number of hours: per week: 4 / 4 per level/semester: 52 / 52 Form of the course: on-site learning | |
| Number of credits: 8 | |
| Recommended semester: 4. | |
| Educational level: I. | |
| Prerequisites: FMFI.KMANM+KJFB/1-BMF-110/15 - Basics of Mathematics (1) | |
| Recommended prerequisites: 1-BMF-110 Basics of mathematics (1) | |
| Course requirements: Preliminary evaluation: 3 written partial exams (100%) Final exam: oral (45%) / written (55%) Indicative evaluation scale: A 90%, B 80%, C 70%, D 65%, E 55% Scale of assessment (preliminary/final): 40/60 | |
| Learning outcomes: After completing the course, students will gain basic knowledge and skills of differential calculus for functions of several variables, integral calculus for functions of one variable, convergence of series and elementary methods of solving ordinary differential equations. | |
| Class syllabus: Differential calculus for vector-valued functions of one real variable, differential calculus for functions of several real variables (limits and continuity, partial derivative and differentiability, Taylor's formula, extremal points, implicit functions, constrained critical points). Integral calculus for functions of one real variable (indefinite integral, Riemann's definite integral, improper integral). Series, elementary methods of solving ordinary differential equations. | |
| Recommended literature: Matematika pre štúdium technických vied : 1. diel / Igor Kľuvánek, Ladislav Mišík, Marko Švec. Bratislava : Slovenské vydavateľstvo technickej literatúry, 1959 Matematika pre štúdium technických vied : 2 diel / I. Kľuvánek...[et al.]. Bratislava : SVTL, 1965 Matematika 1 : Príručka pre vysoké školy technické / Ján Ivan. Bratislava : Alfa, 1984 Matematika 2 / Ján Ivan. Bratislava : Alfa, 1989 Zbierka úloh z vyššej matematiky : 2. časť / Jozef Eliaš, Ján Horváth, Juraj Kajan. Bratislava : Alfa, 1986 Zbierka úloh z vyššej matematiky : 3. časť / Jozef Eliaš, Ján Horváth, Juraj Kajan. Bratislava : Slovenské vydavateľstvo technickej literatúry, 1967 | |

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|--|------|-------|-------|-------|-------|
| Zbierka úloh z vyššej matematiky : 4. časť / Jozef Eliaš ... [et al.]. Bratislava : Alfa, 1972 | | | | | |
| Languages necessary to complete the course: Slovak, English | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 124 | | | | | |
| A | B | C | D | E | FX |
| 7,26 | 8,06 | 19,35 | 20,16 | 25,81 | 19,35 |
| Lecturers: doc. RNDr. Eugen Viszus, CSc., RNDr. Radoslav Böhm, PhD. | | | | | |
| Last change: 16.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|---|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KAG/1-KXX-017/20 | Course title: Basics of Mathematics (2) |
| Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 2 per level/semester: 26 / 26 Form of the course: on-site learning | |
| Number of credits: 6 | |
| Recommended semester: 2. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: The student can get 50% for exercises and 50% for the final exam. The student must obtain at least half of the points for the exercises in order to pass to the final exam. During the teaching part of the semester, the student obtains points via written homework assignments. The final exam consists of a passfail test (10%) and a regular test (20% examples, 20% theoretical questions). Successful completion (8 points out of 10 points) of the passfail test is a necessary condition for admission to the regular test. To successfully pass the final exam, it is necessary to obtain at least half of the points together for both of the final exam tests. Grading: A (100-91), B (90-81), C (80-71), D (70-61), E (60-51), Fx (50-0). Scale of assessment (preliminary/final): Preliminary assessment 50% (written homework assignments) / 50% final exam (10% passfail and 40% regular test). | |
| Learning outcomes: Students will acquire the necessary skills in mathematical operations with complex numbers, combinatorics, basics of probability and statistics, and analytical and synthetic geometry in the plane and space. | |
| Class syllabus: 8. Basics of calculating sequences and series (arithmetic and geometric sequence, partial sums) and their applications. 9. Linear equations and inequalities with two or three unknowns and their solutions. Equation and inequalities with parameters. 10. Elementary analytical geometry in the plane (vectors, lines, triangle, polygon, circle, conic section, scalar product) and its relationship with solutions of equations. Isometries and similarities in plane. 11. Elementary analytical geometry in space (planes, vector product). Basic bodies and their imaging. 12. Complex numbers, calculations and their geometric properties (representations, basic operations, complex n-th power and n-th root, Moivre's theorem) 13. Basic combinatorial procedures without using the traditional formulae | |

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| 14. Basic concept of probability and statistics (reading diagrams and understanding of basic statistical indicators, basic understanding of the relationship between truth and statistical indicator) | | | | | |
| 15. Limits via geometric and computational methods (basic rules of calculating limits, derivatives of elementary functions, graphs of functions and their properties) | | | | | |
| Recommended literature: | | | | | |
| Základy matematiky / Mário Boroš : Ikar, 2016 | | | | | |
| Seminár z matematiky 1-3 / Zbyněk Kubáček, Ján Žabka : Mapa Slovakia | | | | | |
| Languages necessary to complete the course: | | | | | |
| Slovak, English | | | | | |
| Notes: | | | | | |
| Past grade distribution | | | | | |
| Total number of evaluated students: 9 | | | | | |
| A | B | C | D | E | FX |
| 11,11 | 22,22 | 22,22 | 11,11 | 11,11 | 22,22 |
| Lecturers: RNDr. Martina Bátorová, PhD. | | | | | |
| Last change: 21.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|--|---|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KMANM/1- BMF-226/15 | Course title: Basics of Mathematics (3) |
| Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 2 per level/semester: 26 / 26 Form of the course: on-site learning | |
| Number of credits: 4 | |
| Recommended semester: 5. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: Preliminary evaluation: tests/homeworks Final exam: oral / written written exam Indicative evaluation scale: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 70/30 | |
| Learning outcomes: Acquisition of knowledge. The student will be able to use integral calculus in N-dimensional Euclidean spaces, line integral as a tool for solving physical problems. He will also be acquainted with the use of power series methods. | |
| Class syllabus: 1. Power series, Taylor series 2. Multidimensional integrals 3. Line integrals, potential vector fields | |
| Recommended literature: Matematika : diel 1 : pre štúdium technických vied / Igor Kluvánek, Ladislav Mišík, Marko Švec. Bratislava : Alfa, 1971 Matematika pre štúdium technických vied : 2. diel / Igor Kluvánek, Ladislav Mišík, Marko Švec. Bratislava : Alfa, 1970 Cvičenia z matematickej analýzy II / Zbyněk Kubáček, Ján Valášek. Bratislava : Univerzita Komenského, 1996 Matematická analýza IV / Mária Barnovská, Kristína Smítalová. Bratislava : Univerzita Komenského, 1984 Zbierka úloh z vyššej matematiky : 1. časť / Jozef Eliaš, Ján Horváth, Juraj Kajan. Bratislava : Alfa, 1968 | |
| Languages necessary to complete the course: | |
| Notes: | |

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|--|-------|-------|-------|-------|------|
| Past grade distribution | | | | | |
| Total number of evaluated students: 134 | | | | | |
| A | B | C | D | E | FX |
| 9,7 | 11,19 | 13,43 | 17,16 | 27,61 | 20,9 |
| Lecturers: RNDr. Michal Demetrian, PhD., doc. RNDr. Eugen Vízus, CSc. | | | | | |
| Last change: 16.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|---|-------|---|-------|-------|-------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KMANM/1- BMF-261/15 | | Course title: Basics of Mathematics (4) | | | |
| Educational activities: Type of activities: lecture / practicals / independent work Number of hours: per week: 3 / 2 per level/semester: 39 / 26 / 20s Form of the course: on-site learning | | | | | |
| Number of credits: 5 | | | | | |
| Recommended semester: 6. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 117 | | | | | |
| A | B | C | D | E | FX |
| 14,53 | 16,24 | 13,68 | 17,95 | 25,64 | 11,97 |
| Lecturers: RNDr. Michal Demetrian, PhD., doc. RNDr. Eugen Vizsus, CSc. | | | | | |
| Last change: 16.02.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|--|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KJFB/1-OZE-610/15 | Course title: Basics of Radiation Physics and Radiation Protection |
| Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | |
| Number of credits: 3 | |
| Recommended semester: 6. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: Final exam: written Indicative evaluation scale: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 0/100 | |
| Learning outcomes: Graduates of the course will acquire a basic knowledge of radiation physics and the principles of radiation protection and will also gain a comprehensive view of the applications of ionizing radiation in practice. | |
| Class syllabus: Basic concepts of nuclear physics: simple nuclear model, stable and radioactive nuclei, nuclear reactions, excited nuclear and atomic states. Sources of ionising radiation: radionuclide sources, nuclear reactors, accelerators as sources of ionising radiation. Processes of interaction of ionizing radiation with matter: interaction of gamma and X-rays, charged particles and neutrons with the material environment. Quantities and units in radiation physics and protection: quantities characterising radiation sources, radiation fields, the effect of radiation on matter, relationships between radiation quantities. Biological effects of ionising radiation and their impact on health. Environmental radioactivity: sources of radioactivity, distribution of radionuclides in nature, radiotoxicity. Applications of ionising radiation: medical diagnostics and therapy, nuclear power, industrial radiation sources, radioactive dating. Radioactive waste. Basic principles of radiation protection. Radiation protection of workers, population and the environment. Dose limits. Monitoring in radiation physics and protection. | |
| Recommended literature: O.Holá, K.Holý: Radiačná ochrana- Ionizujúce žiarenie, jeho účinky a ochrana pred ionizujúcim žiarením. STU, Bratislava,2010. V.Klener: Principy a praxe radiační ochrany, SUJB, Praha, 2000 | |
| Languages necessary to complete the course: Slovak, English | |

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| Notes: | | | | | |
| Past grade distribution | | | | | |
| Total number of evaluated students: 80 | | | | | |
| A | B | C | D | E | FX |
| 68,75 | 7,5 | 12,5 | 7,5 | 3,75 | 0,0 |
| Lecturers: doc. RNDr. Karol Holý, CSc., doc. RNDr. Monika Müllerová, PhD. | | | | | |
| Last change: 22.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|-------|--|------|-----|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAI/1-AIN-407/15 | | Course title: Brain and Mind | | | |
| Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 3 | | | | | |
| Recommended semester: 1., 3., 5. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 154 | | | | | |
| A | B | C | D | E | FX |
| 48,05 | 18,83 | 15,58 | 8,44 | 2,6 | 6,49 |
| Lecturers: RNDr. Barbora Cimrová, PhD., doc. PhDr. Ján Rybár, PhD. | | | | | |
| Last change: 21.03.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|-------|--|------|-----|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAI/1-AIN-408/15 | | Course title: Cognitive Laboratory | | | |
| Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 1., 3., 5. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 54 | | | | | |
| A | B | C | D | E | FX |
| 70,37 | 12,96 | 7,41 | 1,85 | 0,0 | 7,41 |
| Lecturers: doc. PhDr. Ján Rybár, PhD. | | | | | |
| Last change: 14.03.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|------|--|-----|-----|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAG/1-KXX-002/20 | | Course title: Complementary Classes in Mathematics (1) | | | |
| Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 1. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Homeworks (written solutions of problems and their consulting 100%). Rough evaluation scale: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: Students gain basic skill in computation with numbers, mathematical expressions, elementary functions. They extend the knowledge on elementary geometry. | | | | | |
| Class syllabus: 1. Basic operations with numbers and expressions (numbers, notation, fractions, linear and quadratic expressions with variables, commutativity, distributivity, simplification, etc.) 2. Relations of numbers and their geometric representation on a straight line, absolute value and its geometric significance, equations and inequalities with one variable and absolute value 3. Elementary functions (polynomials, roots, sin, cos, exp, ln) and their relations, properties and computing with them, equations and inequities, calculator vs. adjustment before enumeration. 4. Linear equations with two, three unknowns and their solution 5. Elementary analytical geometry in plane and space (vectors, straight lines, plane, triangle, circle, cone, solids) and link with the solutions of equations | | | | | |
| Recommended literature: Lecturer materials. | | | | | |
| Languages necessary to complete the course: English | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 10 | | | | | |
| A | B | C | D | E | FX |
| 50,0 | 10,0 | 20,0 | 0,0 | 0,0 | 20,0 |

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| Lecturers: doc. RNDr. Pavel Chalmovianský, PhD., Mgr. Adriana Bosáková, Ing. Martin Čavarga |
| Last change: 22.06.2022 |
| Approved by: |

COURSE DESCRIPTION

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|---|-------|--|-----|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAG/1-KXX-012/20 | | Course title: Complementary Classes in Mathematics (2) | | | |
| Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 2. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Homeworks (written solutions of problems and their consulting 100%). Rough evaluation scale: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: Students extends their knowledge and skills in mathematical operations with complex numbers, combinatorics, basic probability and the description of elementary functions. | | | | | |
| Class syllabus: 6 . complex numbers, computation and their geometric properties 7. elementary number theory, divisibility, prime numbers, graphs 8. basic combinatorial methods and solutions without the help of traditional formulas 9. basic notion of probability and statistics, reading diagrams and understanding of basic statistical indicators, basic understanding of the relationship between truth and statistical indicator 10. basics of calculating sequences and series, partial sums, applications (interest, ...) 11. concept of limits geometrically and computationally, basic rules of limit calculation, derivatives of elementary functions, course of function 12. logic and the need for proof illustrated in elementary examples | | | | | |
| Recommended literature: Lecturers materials. | | | | | |
| Languages necessary to complete the course: Slovak, English | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 7 | | | | | |
| A | B | C | D | E | FX |
| 71,43 | 14,29 | 14,29 | 0,0 | 0,0 | 0,0 |

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| Lecturers: Ing. Martin Čavarga |
| Last change: 22.06.2022 |
| Approved by: |

COURSE DESCRIPTION

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| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KDMFI/1-KXX-001/20 | Course title: Complementary Classes in Physics (1) |
| Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | |
| Number of credits: 2 | |
| Recommended semester: 1. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: A:90%, B:80%, C:70%, D:60%, E:50% Scale of assessment (preliminary/final): 100/0 | |
| Learning outcomes: Students will develop skills to solve complex physical problems at the level corresponding to the target requirements for the high-school final examination in physics in the areas listed in the brief syllabus. | |
| Class syllabus: Complex problems in the context of water (hydrostatic force in a liquid, Archimedes' law, continuity equation for liquids and gases, Bernoulli's equation for liquids, resistive force when moving a solid in a liquid) Complex tasks in the context of electricity and magnetism (motion of a charged particle in a homogeneous electric and in a homogeneous magnetic field, motion of a conductor in a magnetic field, motion of a magnet in a coil) Complex tasks in the context of sound (origin of sound, speed of sound propagation, equation of gradual waves, standing waves on a stretched string and on an air column, sound interference) Complex tasks in the contexts of photoelectric effect and X-rays. | |
| Recommended literature: Fyzika pre gymnázium - všeobecnovzdelávací kurz : Experimentálny učebný text pre všeobecnovzdelávací program vyučovania fyziky v prvých dvoch ročníkoch štvorročného gymnázia. (Pracovná verzia) / Viera Lapitková, Václav Koubek, Peter Demkanin. Bratislava : Knižničné a edičné centrum FMFI UK, 2006 Fyzika pre 2. ročník gymnázia a 6. ročník gymnázia s osemročným štúdiom / Peter Demkanin ... [et al.]. Bratislava : Združenie EDUCO, 2013 Fyzika pre 3. ročník gymnázia a 7. ročník gymnázia s osemročným štúdiom / Peter Demkanin, Martina Horváthová. Prievidza : EDUCO, 2012 Physics : Principles with applications / Douglas C. Giancoli. Harlow : Pearson Education, 2016 | |

Fyzika 1 / David Halliday, Robert Resnick, Jearl Walker ; redakce českého vydání Petr Dub ; přeložili Miroslav Černý ... [et al.]. Brno : VUTIUM, 2013

Languages necessary to complete the course:

Slovak, English

Notes:

Past grade distribution

Total number of evaluated students: 10

| A | B | C | D | E | FX |
|------|------|-----|-----|-----|------|
| 30,0 | 20,0 | 0,0 | 0,0 | 0,0 | 50,0 |

Lecturers: PaedDr. Lukáš Bartošovič, PhD.

Last change: 15.03.2022

Approved by:

COURSE DESCRIPTION

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|---|--|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KDMFI/1-KXX-011/20 | Course title: Complementary Classes in Physics (2) |
| Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | |
| Number of credits: 2 | |
| Recommended semester: 2. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: A:90%, B:80%, C:70%, D:60%, E:50% Scale of assessment (preliminary/final): 100/0 | |
| Learning outcomes: Students will develop skills to solve complex physical problems at the level corresponding to the target requirements for the high-school final examination in physics in the areas listed in the brief syllabus. | |
| Class syllabus: Complex problems in the context of translational motion of a point mass (force action, momentum, force impulse, Newton's laws of motion, elastic and inelastic collision, explosion, force action for circular motion). Complex problems in the context of a rigid body (moment of inertia, energy of a rotating body) Complex problems in the context of air (ideal gas, ideal gas phenomena, Avogadro's constant, internal energy of a body, heat capacity, energy transfer by flow, conduction and radiation, movement of a body in air). Complex problem in the context of light (beam optics, dispersion, interference and diffraction of light, black body radiation, light and energy levels of atoms) Complex problem in the context of energy conservation law. Complex problem in the context of conservation laws (energy, momentum, electric charge) | |
| Recommended literature: Fyzika pre gymnázium - všeobecnovzdelávací kurz : Experimentálny učebný text pre všeobecnovzdelávací program vyučovania fyziky v prvých dvoch ročníkoch štvorročného gymnázia. (Pracovná verzia) / Viera Lapitková, Václav Koubek, Peter Demkanin. Bratislava : Knižničné a edičné centrum FMFI UK, 2006 Fyzika pre 2. ročník gymnázia a 6. ročník gymnázia s osemročným štúdiom / Peter Demkanin ... [et al.]. Bratislava : Združenie EDUCO, 2013 Fyzika pre 3. ročník gymnázia a 7. ročník gymnázia s osemročným štúdiom / Peter Demkanin, Martina Horváthová. Prievidza : EDUCO, 2012 | |

Physics : Principles with applications / Douglas C. Giancoli. Harlow : Pearson Education, 2016
 Fyzika 1 / David Halliday, Robert Resnick, Jearl Walker ; redakce českého vydání Petr Dub ; přeložili Miroslav Černý ... [et al.]. Brno : VUTIUM, 2013
 Fyzika 2 / David Halliday, Robert Resnick, Jearl Walker ; redakce českého vydání Petr Dub ; přeložili Miroslav Černý ... [et al.]. Brno : VUTIUM, 2013

Languages necessary to complete the course:

Slovak, English

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: PaedDr. Lukáš Bartošovič, PhD.

Last change: 15.03.2022

Approved by:

COURSE DESCRIPTION

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|--|------|---|------|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KJFB/2-FJF-230/00 | | Course title: Computer Networks | | | |
| Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 3 | | | | | |
| Recommended semester: 5. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: Computer networks architecture concepts. Network protocols. ISO/OSI model. Physical layer. Data link, MAC, LLC. Network and transport layer - address, routing, transferred information integrity. Presentation layer – connections, protocols, applications. TCP/IP implementation, address, DNS, router, internet. Computer network security (crypting, monitoring, firewall). | | | | | |
| Recommended literature: D.C. Naik: INTERNET standardy a protokoly. Computer Press, Praha, 1999 Š. Benyovszky: NetWare 4.1 (kap. 3-6), vyd. PLUS, Praha 1995 | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 31 | | | | | |
| A | B | C | D | E | FX |
| 74,19 | 9,68 | 9,68 | 6,45 | 0,0 | 0,0 |
| Lecturers: RNDr. Tibor Ženiš, PhD. | | | | | |
| Last change: 02.06.2015 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|-------|--|-----|-----|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KJFB/1-OZE-141/10 | | Course title: Computer Principles and Application Software | | | |
| Educational activities: Type of activities: course Number of hours: per week: 3 per level/semester: 39 Form of the course: on-site learning | | | | | |
| Number of credits: 4 | | | | | |
| Recommended semester: 3. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 82 | | | | | |
| A | B | C | D | E | FX |
| 65,85 | 29,27 | 2,44 | 0,0 | 0,0 | 2,44 |
| Lecturers: RNDr. Tibor Ženiš, PhD. | | | | | |
| Last change: 02.06.2015 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|-------|---|-----|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAFZM/1-OZE-273/10 | | Course title: Dynamics of Flowing Gases | | | |
| Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 3 | | | | | |
| Recommended semester: 5. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 38 | | | | | |
| A | B | C | D | E | FX |
| 71,05 | 18,42 | 10,53 | 0,0 | 0,0 | 0,0 |
| Lecturers: doc. RNDr. Mário Janda, PhD. | | | | | |
| Last change: 25.01.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|--|-------|---|-------|-------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KEF/1-FYZ-211/17 | | Course title: Electromagnetism and Optics | | | |
| Educational activities: Type of activities: lecture / practicals Number of hours: per week: 6 / 4 per level/semester: 78 / 52 Form of the course: on-site learning | | | | | |
| Number of credits: 11 | | | | | |
| Recommended semester: 5. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 245 | | | | | |
| A | B | C | D | E | FX |
| 20,41 | 11,02 | 17,96 | 19,18 | 22,86 | 8,57 |
| Lecturers: prof. RNDr. Peter Markoš, DrSc., doc. RNDr. František Kundracik, CSc., Mgr. Róbert Astaloš, PhD. | | | | | |
| Last change: | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|-------|---|------|-----|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University 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: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 3., 5. | | | | | |
| Educational level: I., II. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: tests, presentations, essays Course prerequisites: https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezhneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/ Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: Continual improvement of all language skills focused on communication/speaking, listening comprehension and writing. The emphasis is on discourse, lexicology and morphology, word-bank broadening of communicational English as well as English for specific purposes appropriate for university students. This course is a follow up of the previously taught ESP course. | | | | | |
| Class syllabus: This course's focus is to broaden spoken/communicational English for students with B2/C1 level of English knowledge. | | | | | |
| Recommended literature: Appropriate study material is supplied based on the participants' level of English by the lecturer. (Sources- The Guardian, The Herald Morning Sun. The Nine News, The West Australian, BBC News and podcasts, CNN podcasts). | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 215 | | | | | |
| A | B | C | D | E | FX |
| 67,44 | 13,02 | 6,51 | 1,86 | 1,4 | 9,77 |
| Lecturers: Mgr. Aneta Barnes | | | | | |

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| Last change: 21.06.2022 |
| Approved by: |

COURSE DESCRIPTION

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|--|-------|---|------|-----|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.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: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 4., 6. | | | | | |
| Educational level: I., II. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: tests, oral presentations, essays Course prerequisites: https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezhneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/ Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: Continual improvement of all language skills focused on communication/speaking, listening comprehension and writing. The emphasis is on discourse, lexicology and morphology, word-bank broadening of communicational/spoken English as well as English for specific purpose appropriate for university students. This course is a follow up of the Conversational English course 1. | | | | | |
| Class syllabus: This course's focus is to broaden spoken/communicational English for students with B2/C1 level of English knowledge(Upper-Intermediate/Lower Advanced). | | | | | |
| Recommended literature: Appropriate study material is supplied based on the participants'level of English by the lecturer. (Sources- The Guardian, The Herald Morning Sun. The Nine News, The West Australian, BBC News and podcasts, CNN podcasts). | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 146 | | | | | |
| A | B | C | D | E | FX |
| 77,4 | 12,33 | 3,42 | 1,37 | 0,0 | 5,48 |
| Lecturers: Mgr. Aneta Barnes | | | | | |

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| Last change: 21.06.2022 |
| Approved by: |

COURSE DESCRIPTION

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|---|--|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KJP/1-MXX-131/00 | Course title: English Language (1) |
| Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | |
| Number of credits: 2 | |
| Recommended semester: 1. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: Grades: A 93%, B 85%, C 77%, D 70%, E 65% Course prerequisites: https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebežneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/ Scale of assessment (preliminary/final): 100/0 | |
| Learning outcomes: The objective of the subject is to provide the students with experience and knowledge of technical English and thus make them ready to use English sources of information for later study and professional career. | |
| Class syllabus: On entering the first semester, students' knowledge of English is tested and they are divided into groups according to the results of the placement test. In the groups of pre-intermediate and intermediate students, fundamentals of technical English are taught. Advanced students take classes of technical English for their field of study: English for mathematics, for physics, for computer science, English for management and economic and financial mathematics. | |
| Recommended literature: Anglický jazyk pre študentov FMFI UK : Kurz pre mierne pokročilých / Alena Zemanová. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Aplikovaná matematika / Alexandra Maďarová, Ľubomíra Kožehubová. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Matematika / kolektív autorov KJP. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Fyzika / Alena Zemanová. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Informatika / Elena Klátiková. The textbook has not been published. It is at students' disposal in an electronic format. | |

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|---|------|-------|-------|------|-----|
| Languages necessary to complete the course: Slovak, English | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 5840 | | | | | |
| A | B | C | D | E | FX |
| 30,6 | 23,8 | 18,29 | 12,47 | 7,45 | 7,4 |
| Lecturers: Mgr. Eva Foltánová, Mgr. Ing. Jana Kočvarová, Mgr. Ľubomíra Kožehubová, Mgr. Alexandra Maďarová, PhDr. Alena Zemanová, Mgr. Aneta Barnes, Mgr. Simona Tomášková, PhD. | | | | | |
| Last change: 20.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|--|-------|--|-------|-------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KJP/1-MXX-132/00 | | Course title: English Language (2) | | | |
| Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 2. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Grades: A 93%, B 85%, C 77%, D 70%, E 65% Course prerequisites: https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezhneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/ Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: The objective of the subject is to provide the students with experience and knowledge of technical English and thus make them ready to use English sources of information for later study and professional career. | | | | | |
| Class syllabus: This is a continuation of the course English (1) designed for pre-intermediate students. Fundamental vocabulary is presented through selected topics in mathematics, physics and informatics. The lessons also contain revision of elementary grammar. Generally, it is a necessary preliminary to advanced programs. | | | | | |
| Recommended literature: Anglický jazyk pre študentov FMFI UK : Kurz pre mierne pokročilých / Alena Zemanová. The textbook has not been published. It is at students' disposal in an electronic format. | | | | | |
| Languages necessary to complete the course: Slovak, English | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 1582 | | | | | |
| A | B | C | D | E | FX |
| 22,06 | 20,54 | 24,27 | 15,36 | 10,81 | 6,95 |

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| Lecturers: PhDr. Alena Zemanová, Mgr. Ing. Jana Kočvarová, Mgr. Alexandra Maďarová, Mgr. Lubomíra Kožehubová, Mgr. Eva Foltánová, Mgr. Aneta Barnes, Mgr. Simona Tomášková, PhD. |
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| Last change: 20.06.2022 |
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| Approved by: |
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COURSE DESCRIPTION

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|---|--|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KJP/1-MXX-231/00 | Course title: English Language (3) |
| Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | |
| Number of credits: 2 | |
| Recommended semester: 3. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: Grades: A 93%, B 85%, C 77%, D 70%, E 65% Course prerequisites: https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebežneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/ Scale of assessment (preliminary/final): 100/0 | |
| Learning outcomes: The objective of the classes is to provide the students with knowledge of technical English in their field of study and experience with technical English sources sufficient to make the able to use technical language for their later study and professional purposes. | |
| Class syllabus: The subject continues the program of English (2). Students take classes of special English for their field of study: English for mathematics, English for physics, English for computer science, English for management and economic and financial mathematics. The subject requires advanced knowledge of general English. | |
| Recommended literature: Anglický jazyk pre študentov FMFI UK : Kurz pre mierne pokročilých / Alena Zemanová. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Aplikovaná matematika / Alexandra Maďarová, Ľubomíra Kožehubová. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Matematika / kolektív autorov KJP. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Fyzika / Alena Zemanová. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Informatika / Elena Klátiková. The textbook has not been published. It is at students' disposal in an electronic format. | |
| Languages necessary to complete the course: | |

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|---|-------|-------|------|------|------|
| Slovak, English | | | | | |
| Notes: | | | | | |
| Past grade distribution | | | | | |
| Total number of evaluated students: 1326 | | | | | |
| A | B | C | D | E | FX |
| 16,06 | 19,53 | 23,23 | 18,1 | 17,5 | 5,58 |
| Lecturers: PhDr. Alena Zemanová, Mgr. Ing. Jana Kočvarová, Mgr. Alexandra Maďarová, Mgr. Lubomíra Kožehubová, Mgr. Eva Foltánová, Mgr. Aneta Barnes, Mgr. Simona Tomášková, PhD. | | | | | |
| Last change: 20.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|--|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KJP/1-MXX-232/10 | Course title: English Language (4) |
| Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | |
| Number of credits: 2 | |
| Recommended semester: 4. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: Examination: an examination consisting of a written and an oral part. Grades: A 93%, B 85%, C 77%, D 70%, E 65% Course prerequisites: https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/skuska-z-predmetu-anglicky-jazyk-4/ Scale of assessment (preliminary/final): 0/100 | |
| Learning outcomes: After completing the course, students will be able to work independently with professional literature in English | |
| Class syllabus: Students take classes of special English for their field of study: English for mathematics, English for physics, English for computer science, English for management and economic and financial mathematics. | |
| Recommended literature: Anglický jazyk pre študentov FMFI UK : Kurz pre mierne pokročilých / Alena Zemanová. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Aplikovaná matematika / Alexandra Maďarová, Ľubomíra Kožehubová. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Matematika / kolektív autorov KJP. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Fyzika / Alena Zemanová. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Informatika / Elena Klátiková. The textbook has not been published. It is at students' disposal in an electronic format. | |
| Languages necessary to complete the course: Slovak, English | |

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|---|------|-------|-------|------|-----|
| Notes: | | | | | |
| Past grade distribution | | | | | |
| Total number of evaluated students: 3345 | | | | | |
| A | B | C | D | E | FX |
| 27,23 | 28,4 | 21,29 | 11,21 | 5,77 | 6,1 |
| Lecturers: Mgr. Ing. Jana Kočvarová, Mgr. Alexandra Maďarová, PhDr. Alena Zemanová, Mgr. Lubomíra Kožehubová, Mgr. Eva Foltánová, Mgr. Aneta Barnes, Mgr. Simona Tomášková, PhD. | | | | | |
| Last change: 17.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|---|------|--|-------|------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KJFB/1-OZE-151/15 | | Course title: Experimental Data Processing | | | |
| Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 3 | | | | | |
| Recommended semester: 4. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 43 | | | | | |
| A | B | C | D | E | FX |
| 37,21 | 18,6 | 11,63 | 23,26 | 4,65 | 4,65 |
| Lecturers: doc. RNDr. Ivan Sýkora, PhD. | | | | | |
| Last change: 02.06.2015 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|---|------|---|------|-----|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University 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: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 1. | | | | | |
| Educational level: I., II. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Scale of assessment (preliminary/final): 100/0 | | | | | |
| 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: Capelle Guy, Menand Robert: Le Nouveau taxi 1, Hachette FLE Paris, France 2009, ISBN 978-2-01-155548 - 9 | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 435 | | | | | |
| A | B | C | D | E | FX |
| 45,75 | 20,0 | 18,85 | 8,74 | 2,3 | 4,37 |
| Lecturers: Mgr. Ľubomíra Kožehubová | | | | | |
| Last change: 20.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|-------|---|-------|------|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University 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: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 2. | | | | | |
| Educational level: I., II. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: The subject continues the program of French language (1) and provides courses of essential and intermediate French language. | | | | | |
| Recommended literature: Capelle Guy, Menand Robert: Le Nouveau taxi 1, Hachette FLE Paris, France 2009, ISBN 978-2-01-155548 - 9 | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 265 | | | | | |
| A | B | C | D | E | FX |
| 38,87 | 25,28 | 19,62 | 10,19 | 2,64 | 3,4 |
| Lecturers: Mgr. Ľubomíra Kožehubová | | | | | |
| Last change: 20.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|---|-------|---|------|------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFL.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: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 3. | | | | | |
| Educational level: I., II. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: The subject provides a course of intermediate French language, covering not only general, but also technical language. | | | | | |
| Recommended literature: Capelle Guy, Menand Robert: Le Nouveau taxi 1, Hachette FLE Paris, France 2009, ISBN 978-2-01-155548 - 9 | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 104 | | | | | |
| A | B | C | D | E | FX |
| 39,42 | 27,88 | 21,15 | 6,73 | 0,96 | 3,85 |
| Lecturers: Mgr. Ľubomíra Kožehubová | | | | | |
| Last change: 20.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|-------|---|-----|------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.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: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 4. | | | | | |
| Educational level: I., II. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: The subject provides a course of intermediate French covering not only general, but also technical French language. | | | | | |
| Recommended literature: Menand Robert: Le Nouveau taxi 2, Hachette FLE, Paris, France 2009, ISBN 978-2-01-155551 - 9 | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 74 | | | | | |
| A | B | C | D | E | FX |
| 41,89 | 32,43 | 17,57 | 2,7 | 1,35 | 4,05 |
| Lecturers: Mgr. Ľubomíra Kožehubová | | | | | |
| Last change: 20.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|---|------|--|-----|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAFZM/1-OZE-304/10 | | Course title: Fundamentals of Alternative Energy Sources | | | |
| Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 3 | | | | | |
| Recommended semester: 8. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 79 | | | | | |
| A | B | C | D | E | FX |
| 92,41 | 7,59 | 0,0 | 0,0 | 0,0 | 0,0 |
| Lecturers: doc. RNDr. Marcela Morvová, PhD. | | | | | |
| Last change: 02.06.2015 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|--|------|---|-----|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAFZM/1-OZE-373/10 | | Course title: Fundamentals of Dynamic Meteorology | | | |
| Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 3 | | | | | |
| Recommended semester: 8. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: Students will acquire basic knowledge of atmospheric dynamics. | | | | | |
| Class syllabus: Equations of motion for the atmosphere. Forces in the atmosphere. Distribution of state quantities in the atmosphere. Vertical profiles of meteorological variables. simplified models of the atmosphere. Barometric formula. Vertical stability of the atmosphere, the effect of vertical movements on stability in the atmosphere. Particle and layer method. The energy of instability. | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 5 | | | | | |
| A | B | C | D | E | FX |
| 40,0 | 60,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| Lecturers: doc. RNDr. Martin Gera, PhD. | | | | | |
| Last change: 19.08.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|---|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KJFB/1-OZE-201/10 | Course title: Fundamentals of Environmental Physics |
| Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | |
| Number of credits: 3 | |
| Recommended semester: 6. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: Exam: written and oral exam, successful completion of the written part is condition of the oral part. Share in the overall rating: 80/20 Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50% | |
| Learning outcomes: Students will gain basic information from environmental physics and their connection with knowledge from other physics | |
| Class syllabus: Mathematical foundations of environmental physics, .Transport of heat, mass and momentum - Stationary transfer phenomena (diffusion coefficients, viscosity heat transfer), general transport equation, particle transport and their deposition, - Fluid flow (wind energy - maximum efficiency of wind turbines - Betz limit, fluid energy transfer), - heat transfer - convection, conduction heat, insulation, thermal equilibrium equation, - Energy from fossil fuels (Heat engines and their maximum efficiency), Solar radiation - absorption and emission spectra of the Sun, Stefan-Boltzmann's law, Planck's law. Solar radiation and its influence on biological structures. Diffusion of particles and its applications (neutron diffusion in a nuclear reactor, reactor equation), Lowson's criterion in thermonuclear reactors. Atmosphere and water on Earth, - Annual water balance on Earth, Latent heat, Temperature gradient, Temperature potential. Liquids - water potential, Gravitational potential, Osmotic potential, Liquid-air interconnection, Isotope representation in nature, - Isotopes in molecules, Natural occurrence of radioactive isotopes - origin of radionuclides, Stable isotopes - Fractional isotope representation, Isotope fractionation, Processes leading to fraction fractionation, Kinetic fractionation, Fraction temperature dependence, Fractionation rules, Isotopes as tracers - Tracer requirements, Types of tracers, Continental and altitude effect, Stable isotopes as paleotemplomer, - archives with paleo precipitation. Dating using radioactive isotopes, -14C, 3H, Tritium in oceanography ... Earth in the solar system, characteristics of the Sun, - Orbital variations of solar radiation, Attenuation of solar radiation in the atmosphere, Properties of real radiating objects, Natural greenhouse effect, Vertical structure , Radiation balance of the Earth - atmosphere system. | |

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|---|-------|-------|-------|-------|-----|
| Recommended literature: Principles of environmental physics / John Monteith, Mike Unsworth. Burlington : Academic press, 2008 Living in the Environment : An Introduction to Environmental Science / G. Tyler Miller, Jr.. Belmont : Wadsworth, 1992 | | | | | |
| Languages necessary to complete the course: slovak, english | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 67 | | | | | |
| A | B | C | D | E | FX |
| 43,28 | 14,93 | 11,94 | 17,91 | 11,94 | 0,0 |
| Lecturers: doc. RNDr. Ivan Sýkora, PhD., RNDr. Radoslav Böhm, PhD. | | | | | |
| Last change: 16.06.2022 | | | | | |
| Approved by: | | | | | |

STATE EXAM DESCRIPTION

| | |
|---|---|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KJFB/1-OZE-954/15 | Course title: Fundamentals of Environmental Physics |
| Number of credits: 2 | |
| Recommended semester: 7., 8.. | |
| Educational level: I. | |
| State exam syllabus: | |
| Last change: 02.06.2015 | |
| Approved by: | |

COURSE DESCRIPTION

| | |
|---|---|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KDMFI/1-KXX-006/20 | Course title: Fundamentals of Physics (1) |
| Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 2 per level/semester: 26 / 26 Form of the course: on-site learning | |
| Number of credits: 5 | |
| Recommended semester: 1. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: Learning outcomes at the level of at least 50%. Scale of assessment (preliminary/final): 60/40 | |
| Learning outcomes: Students will develop skills in using facts, concepts and terminology from the areas listed in the brief course syllabus. They will develop skills to communicate physics information (graph, table, relationship, text) as well as to formulate questions worthy of research and hypotheses of experiments. | |
| Class syllabus: Deepening and expanding knowledge of high school curricula in the areas of: ideal gas, temperature, kinetic theory of gases; heat conduction, flow and radiation; absolute black body radiation; direct current; energy conservation law and photoelectric effect; energy conservation law and Bernoulli's equation; X-ray absorption and attenuation of light in an optical fiber; periodic phenomena and sound. | |
| Recommended literature: Giancoli, D., Physics: Principles with applications, 6th edition Halliday, D., Resnick, R., Walker, J., Fyzika 1. až 5., Demkanin, P. a kol. Fyzika pre 2. ročník gymnázia Demkanin, P. a kol. Fyzika pre 3. ročník gymnázia Elektronick materials in moodle.uniba.sk | |
| Languages necessary to complete the course: Slovak, English | |
| Notes: | |

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|--|-------|------|------|-----|-------|
| Past grade distribution | | | | | |
| Total number of evaluated students: 13 | | | | | |
| A | B | C | D | E | FX |
| 23,08 | 15,38 | 7,69 | 7,69 | 0,0 | 46,15 |
| Lecturers: doc. RNDr. Peter Demkanin, PhD., PaedDr. Tünde Kiss, PhD., Mgr. Silvia Novotná | | | | | |
| Last change: 15.03.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|-----|---|-------|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KDMFI/1-KXX-016/20 | | Course title: Fundamentals of Physics (2) | | | |
| Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 2 per level/semester: 26 / 26 Form of the course: on-site learning | | | | | |
| Number of credits: 5 | | | | | |
| Recommended semester: 2. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Learning outcomes at the level of at least 50%. Scale of assessment (preliminary/final): 60/40 | | | | | |
| Learning outcomes: Students will develop skills in using facts, concepts and terminology from the areas listed in the brief course syllabus. They will develop skills to communicate physics information (graph, table, relationship, text) as well as to formulate questions worthy of research and hypotheses of experiments. | | | | | |
| Class syllabus: Deepening and expanding knowledge from high school in the areas of: mechanics of a point mass; Atwood's machine; decomposition of force into components, free body diagram; movement of a point mass in a circle, centrifuge; mechanical work, mechanical energy; application of energy conservation law; the rotational effect of the force and rotation of a rigid body around a fixed axis; fluid mechanics; magnetic and electromagnetic phenomena; basics of optics. | | | | | |
| Recommended literature: Giancoli, D., Physics: Principles with applications, 6th edition Halliday, D., Resnick, R., Walker, J., Fyzika 1. až 5., Demkanin, P. a kol. Fyzika pre 2. ročník gymnázia Demkanin, P. a kol. Fyzika pre 3. ročník gymnázia Elektronick materials in moodle.uniba.sk | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 7 | | | | | |
| A | B | C | D | E | FX |
| 71,43 | 0,0 | 0,0 | 28,57 | 0,0 | 0,0 |

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| Lecturers: doc. PaedDr. Viera Haverlíková, PhD., PaedDr. Tünde Kiss, PhD. |
| Last change: 15.03.2022 |
| Approved by: |

COURSE DESCRIPTION

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|---|-------|--|-------|-------|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAFZM/1-OZE-302/10 | | Course title: Fundamentals of Physics of Water | | | |
| Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 3 | | | | | |
| Recommended semester: 7. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 59 | | | | | |
| A | B | C | D | E | FX |
| 27,12 | 23,73 | 22,03 | 15,25 | 11,86 | 0,0 |
| Lecturers: doc. RNDr. Marcela Morvová, PhD., prof. RNDr. Zdenko Machala, DrSc. | | | | | |
| Last change: 02.06.2015 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|-------|--|------|------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAFZM/1-OZE-301/10 | | Course title: Fundamentals of Physics of the Earth | | | |
| Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 3 | | | | | |
| Recommended semester: 7. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 51 | | | | | |
| A | B | C | D | E | FX |
| 41,18 | 27,45 | 15,69 | 1,96 | 7,84 | 5,88 |
| Lecturers: doc. RNDr. Sebastián Ševčík, CSc., prof. RNDr. Peter Moczo, DrSc., RNDr. Adriana Ondrášková, PhD. | | | | | |
| Last change: 25.01.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|--|---|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KEF/1-FYZ-212/15 | Course title: Fundamentals of Programming |
| Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 2 per level/semester: 26 / 26 Form of the course: on-site learning | |
| Number of credits: 5 | |
| Recommended semester: 5. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: Exam: practical (programming) Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 0/100 | |
| Learning outcomes: The student will understand the principles of computer processing of numbers and the resulting limitations (data types, including links, number fields). They will understand the basic structures of the program (functions, branches, ...) and their use to algorithmize problem solving. They will be able to program in C / C ++ language simpler algorithms for solving mathematical and physical problems (eg movement in fields, calculation of fields, sums of rows, ...). | |
| Class syllabus: Basic structure of C / C ++ program, data types and their accuracy, program branching (if..else, switch, for, while, do..while), functions, use of references to return multiple values of functions, two- and multidimensional fields, texts , field references, data flows and their control (cin, cout), working with files (fstream), concept of object, drawing simple graphs from C ++ program (xmgrace, GNUplot), Euler's method for solving differential equations and its use for solving motion problems , roots of functions, numerical integration and its use for solving physical problems, random numbers and Monte Carlo methods, basics of object-oriented programming. | |
| Recommended literature: Kundracik, F .: Basics of Programming Practically. Vydavateľstvo UK 2013. On-line: http://www.fmph.uniba.sk/index.php?id=3246 Materials on the course page: http://davinci.fmph.uniba.sk/~kundracik1/ZakladyProgramovania/ | |
| Languages necessary to complete the course: Slovak, English | |
| Notes: | |

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| Past grade distribution | | | | | |
| Total number of evaluated students: 212 | | | | | |
| A | B | C | D | E | FX |
| 69,34 | 5,19 | 9,91 | 7,08 | 8,49 | 0,0 |
| Lecturers: doc. RNDr. František Kunderacik, CSc., doc. RNDr. Peter Papp, PhD. | | | | | |
| Last change: 24.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|--|-----|---|-----|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAI+KDMFI/1-KXX-008/20 | | Course title: Fundamentals of Programming (1) | | | |
| Educational activities: Type of activities: course Number of hours: per week: 4 per level/semester: 52 Form of the course: on-site learning | | | | | |
| Number of credits: 6 | | | | | |
| Recommended semester: 1. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Continuous assessment: homework, tests Exam: solving computer tasks It is necessary to obtain at least 90% of points to obtain A rating, at least 80% of points to grade B, at least 70% of points to grade C, at least 60% of points to grade D and at least 50% to grade E. Scale of assessment (preliminary/final): 70/30 | | | | | |
| Learning outcomes: After completing the course, students will be able to write short, simple programs in Python and master the basic methods of debugging in their own programs. | | | | | |
| Class syllabus: Basic Python program structures: cycles, conditions, variables, functions, strings, files. Basic methods of finding errors in programs. | | | | | |
| Recommended literature: Python programming : An introduction to computer science / John M. Zelle. Sherwood, Or. : Franklin, Beedle & Associates, 2010 | | | | | |
| Languages necessary to complete the course: Slovak, English | | | | | |
| 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: RNDr. Michal Winczer, PhD. | | | | | |
| Last change: 15.03.2022 | | | | | |

Approved by:

COURSE DESCRIPTION

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|--|-----|---|-----|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAI+KDMFI/1-KXX-018/20 | | Course title: Fundamentals of Programming (2) | | | |
| Educational activities: Type of activities: course Number of hours: per week: 4 per level/semester: 52 Form of the course: on-site learning | | | | | |
| Number of credits: 6 | | | | | |
| Recommended semester: 2. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Continuous assessment: homework, written tests Exam: solving computer tasks It is necessary to obtain at least 90% of points to obtain A rating, at least 80% of points to grade B, at least 70% of points to grade C, at least 60% of points to grade D and at least 50% to grade E. Scale of assessment (preliminary/final): 70/30 | | | | | |
| Learning outcomes: Students will get acquainted with the basic structures for storing data in Python. Through motivational examples, they will improve in writing and debugging simple programs and get acquainted with the basic principles of computer science. | | | | | |
| Class syllabus: Advanced structures in Python (lists, n-tuples, matrices). Debugging programs. Motivational examples illustrating basic concepts of informatics. Examples of practical applications. | | | | | |
| Recommended literature: Python 3 : Výukový kurz / Mark Summerfield ; překlad Lukáš Krejčí. Brno : Computer Press, 2010 Sedem divov informatiky / Juraj Hromkovič ; preklad Michal Winczer. Ružomberok : Verbum, 2012 | | | | | |
| Languages necessary to complete the course: Slovak, English | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 7 | | | | | |
| A | B | C | D | E | FX |
| 85,71 | 0,0 | 14,29 | 0,0 | 0,0 | 0,0 |

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| Lecturers: doc. Mgr. Tomáš Vinař, PhD., RNDr. Michal Winczer, PhD. |
| Last change: 15.03.2022 |
| Approved by: |

COURSE DESCRIPTION

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|--|------|---|-----|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAFZM/1-OZE-142/10 | | Course title: Fundamentals of Environmental Physics | | | |
| Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 3 | | | | | |
| Recommended semester: 4. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 171 | | | | | |
| A | B | C | D | E | FX |
| 88,3 | 9,94 | 1,75 | 0,0 | 0,0 | 0,0 |
| Lecturers: doc. RNDr. Marcela Morvová, PhD. | | | | | |
| Last change: 02.06.2015 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|--|-------|--|-----|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAFZM/1-OZE-272/15 | | Course title: Gas Discharges and their Application | | | |
| Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 3 | | | | | |
| Recommended semester: 5. | | | | | |
| Educational level: I. | | | | | |
| 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 | 11,11 | 5,56 | 0,0 | 0,0 | 0,0 |
| Lecturers: RNDr. Imrich Morva, PhD., doc. RNDr. Marcela Morvová, PhD. | | | | | |
| Last change: 02.06.2015 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|---|-------|---|------|------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KJFB/1-OZE-241/10 | | Course title: General Chemistry | | | |
| Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 3 | | | | | |
| Recommended semester: 5. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 114 | | | | | |
| A | B | C | D | E | FX |
| 39,47 | 47,37 | 4,39 | 0,88 | 0,88 | 7,02 |
| Lecturers: prof. Ing. Pavel Mach, CSc. | | | | | |
| Last change: 02.06.2015 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|--|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KAFZM/1-OZE-374/15 | Course title: Geographical Information Systems |
| Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | |
| Number of credits: 3 | |
| Recommended semester: 8. | |
| Educational level: I. | |
| Prerequisites: | |
| Recommended prerequisites: - | |
| Course requirements: Indicative evaluation scale: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 50/50 | |
| Learning outcomes: Students will gain basic knowledge about working with geographical information systems and the possibilities of their use in the field of renewable energy sources, environmental physics, meteorology, hydrology and climatology. | |
| Class syllabus: Introduction to geographical information systems (GIS). Familiarity with GIS tools: location and attribute queries, map algebra, distance analysis, terrain model analysis, process modeling. Some examples of the use of GIS resources in the study and modeling of selected processes in the field of renewable energy sources, environmental physics, meteorology, hydrology and climatology. Digital terrain model, the dependence of the intensity of direct sunlight on the slope and orientation of the slopes. Use of linear regression in creating map layers. | |
| Recommended literature: The latest literature, sources from professional and scientific journals and information published on the Internet as recommended by the lecturer at the beginning of the semester Older literature: Tuček, J., 1998: Geografické informační systémy. Principy a praxe. Computer Press, Praha. | |
| Languages necessary to complete the course: Slovak in combination with English (some literature in English) | |
| Notes: - | |

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|---|-----|-----|-----|-----|-----|
| Past grade distribution | | | | | |
| Total number of evaluated students: 6 | | | | | |
| A | B | C | D | E | FX |
| 100,0 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| Lecturers: prof. RNDr. Milan Lapin, CSc., RNDr. Martin Kremler, PhD. | | | | | |
| Last change: 15.03.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|--|-------|---|------|------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University 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: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 1. | | | | | |
| Educational level: I., II. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: To master the fundamentals of the common language and basic technical terms of particular fields of study (depending on the student's level of German proficiency) | | | | | |
| 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. This course's focus is to master the fundamentals of the common language and basic technical terms of particular fields of study (depending on the student's level of German proficiency) | | | | | |
| Recommended literature: Appropriate study material is supplied by teacher based on the participants'level of German proficiency. | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 734 | | | | | |
| A | B | C | D | E | FX |
| 36,1 | 27,25 | 19,62 | 8,99 | 2,72 | 5,31 |
| Lecturers: Mgr. Alexandra Maďarová, Mgr. Simona Tomášková, PhD. | | | | | |
| Last change: 21.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|--|-------|---|-------|------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University 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: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 2. | | | | | |
| Educational level: I., II. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: To master the fundamentals of the common language and basic technical terms of particular fields of study (depending on the student's level of German proficiency) | | | | | |
| Class syllabus: German 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 German. This course's focus is to to master the fundamentals of the common language and basic technical terms of particular fields of study (depending on the student's level of German proficiency) | | | | | |
| Recommended literature: Appropriate study material is supplied by teacher based on the participants'level of German proficiency | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 480 | | | | | |
| A | B | C | D | E | FX |
| 36,04 | 20,21 | 20,83 | 13,13 | 3,33 | 6,46 |
| Lecturers: Mgr. Alexandra Maďarová, Mgr. Simona Tomášková, PhD. | | | | | |
| Last change: 21.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|-------|---|------|------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University 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: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 3. | | | | | |
| Educational level: I., II. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: Master the basics of general language and basic professional terminology of individual fields of study (depending on the advanced level of students) | | | | | |
| Class syllabus: The course is a follow-up to the German language (1,2). The subject provides a course of intermediate or advanced German language. This course's focus is to deepen the knowledge of the common language and basic technical terms of particular fields of study (depending on the student's level of German proficiency). | | | | | |
| Recommended literature: Appropriate study material is supplied by teacher based on the participants' level of German proficiency. | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 165 | | | | | |
| A | B | C | D | E | FX |
| 41,21 | 25,45 | 20,61 | 6,67 | 2,42 | 3,64 |
| Lecturers: Mgr. Alexandra Maďarová, Mgr. Simona Tomášková, PhD. | | | | | |
| Last change: 21.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|-------|---|-------|------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University 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: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 4. | | | | | |
| Educational level: I., II. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: Master the basics of general language and basic professional terminology of individual fields of study (depending on the advanced level of students) | | | | | |
| Class syllabus: The course is a follow-up to the German language (1-3). It provides a course of intermediate and advanced German language. This course's focus is to deepen the knowledge of the common language and basic technical terms of particular fields of study (depending on the student's level of German proficiency). | | | | | |
| Recommended literature: Appropriate study material is supplied by teacher based on the participants' level of German proficiency. | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 90 | | | | | |
| A | B | C | D | E | FX |
| 42,22 | 24,44 | 12,22 | 12,22 | 3,33 | 5,56 |
| Lecturers: Mgr. Alexandra Maďarová, Mgr. Simona Tomášková, PhD. | | | | | |
| Last change: 21.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|-------|--|-----|-----|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAI/1-MXX-491/15 | | Course title: Integrated Education of People with Disabilities | | | |
| Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 3 | | | | | |
| Recommended semester: 1. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| 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 |
| 78,18 | 18,18 | 1,82 | 0,0 | 0,0 | 1,82 |
| Lecturers: PaedDr. Elena Mendelová, CSc. | | | | | |
| Last change: 02.06.2015 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|-------|--|------|------|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAFZM/1-OZE-303/10 | | Course title: Introduction to Meteorology, Climatology and Hydrology | | | |
| Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 3 | | | | | |
| Recommended semester: 7. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 56 | | | | | |
| A | B | C | D | E | FX |
| 39,29 | 39,29 | 12,5 | 7,14 | 1,79 | 0,0 |
| Lecturers: prof. RNDr. Milan Lapin, CSc. | | | | | |
| Last change: 02.06.2015 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|-------|---|-------|------|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAFZM/1-OZE-341/10 | | Course title: Introduction to Physics of the Atmosphere | | | |
| Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 3 | | | | | |
| Recommended semester: 7. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 29 | | | | | |
| A | B | C | D | E | FX |
| 34,48 | 27,59 | 20,69 | 13,79 | 3,45 | 0,0 |
| Lecturers: prof. RNDr. Milan Lapin, CSc., doc. RNDr. Martin Gera, PhD. | | | | | |
| Last change: 25.01.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|--|-------|---|-------|-------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KJFB+KEF/1-FYZ-231/15 | | Course title: Introduction to Quantum Physics | | | |
| Educational activities: Type of activities: lecture / practicals Number of hours: per week: 4 / 2 per level/semester: 52 / 26 Form of the course: on-site learning | | | | | |
| Number of credits: 7 | | | | | |
| Recommended semester: 6. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 164 | | | | | |
| A | B | C | D | E | FX |
| 31,71 | 15,85 | 18,9 | 15,24 | 10,98 | 7,32 |
| Lecturers: prof. RNDr. Miroslav Grajcar, DrSc., prof. RNDr. Jozef Masarik, DrSc., prof. RNDr. Peter Markoš, DrSc. | | | | | |
| Last change: 02.06.2015 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|--|-------|--|-------|------|-------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KDMFI/1-AIN-112/15 | | Course title: Introduction to Web Technologies | | | |
| Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 2 per level/semester: 26 / 26 Form of the course: on-site learning | | | | | |
| Number of credits: 6 | | | | | |
| Recommended semester: 1. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Antirequisites: FMFI.KZVI/1-AIN-610/00 | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 2357 | | | | | |
| A | B | C | D | E | FX |
| 41,54 | 14,55 | 13,58 | 11,41 | 8,53 | 10,39 |
| Lecturers: PaedDr. Roman Hrušecký, PhD., RNDr. Marek Nagy, PhD. | | | | | |
| Last change: 22.09.2017 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|--|--|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KDMFI/1-KXX-003/20 | Course title: Laboratory Practicals in Physics (1) |
| Educational activities: Type of activities: practicals Number of hours: per week: 3 per level/semester: 39 Form of the course: on-site learning | |
| Number of credits: 4 | |
| Recommended semester: 1. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: A: at least 90%, B at least 80%, C at least 70%, D at least 60%, E at least 50%. Scale of assessment (preliminary/final): 100/0 | |
| Learning outcomes: Students will develop skills to empirically examine physical phenomena at the level corresponding to the target requirements for the high-school final examination in physics in the areas listed in the brief syllabus. | |
| Class syllabus: Measurement of physical quantities (length, mass, volume, time, temperature, force, gas pressure, electric current, electric voltage, magnetic induction, lighting, sound frequency) Physical dependence (independent and dependent variable, experiment constants), dependence graph, dependence table, mathematical description of dependence. Direct ratio and linear dependence. Linearization of nonlinear dependence by substitution and logarithmization. Random and systematic error of a series of measurements. Complete laboratory work - problem identification, formulation of hypotheses, selection of variables, design of apparatus, data collection and processing, formulation of conclusions, evaluation. Real group computer-aided laboratory experiments focused on the following areas: Hydrostatic compressive force in a liquid, Archimedes' law, Bernoulli's equation for a liquid, resistive force when moving a solid in a liquid, moving a conductor in a magnetic field, moving a magnet in a coil, sound generation, speed of sound propagation, standing waves on a stretched string and on an air column, sound interference). | |
| Recommended literature: Počítačom podporované prírodovedné laboratórium / Peter Demkanin a kol.. Bratislava : Knižničné a edičné centrum, 2006 Physics : Principles with applications / Douglas C. Giancoli. Harlow : Pearson Education, 2016 | |

Fyzika 1 / David Halliday, Robert Resnick, Jearl Walker ; redakce českého vydání Petr Dub ; přeložili Miroslav Černý ... [et al.]. Brno : VUTIUM, 2013

Languages necessary to complete the course:

Slovak, English

Notes:

Past grade distribution

Total number of evaluated students: 13

| A | B | C | D | E | FX |
|-----|------|-------|-------|-----|-------|
| 0,0 | 7,69 | 30,77 | 15,38 | 0,0 | 46,15 |

Lecturers: doc. PaedDr. Viera Haverlíková, PhD.

Last change: 16.03.2022

Approved by:

COURSE DESCRIPTION

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|--|--|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KDMFI/1-KXX-013/20 | Course title: Laboratory Practicals in Physics (2) |
| Educational activities: Type of activities: practicals Number of hours: per week: 3 per level/semester: 39 Form of the course: on-site learning | |
| Number of credits: 4 | |
| Recommended semester: 2. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: A: 90%, B:80%, C:70%, D:60%, E:50% Scale of assessment (preliminary/final): 100/0 | |
| Learning outcomes: Students will develop skills to empirically examine physical phenomena at the level corresponding to the target requirements for the high-school final examination in physics in the areas listed in the brief syllabus. | |
| Class syllabus: Mathematical modeling of real physical situations. Comparison of data obtained by a mathematical model with data from a real experiment. Video measurement. Mathematical model and output in the form of interactive animation. Real group computer-aided laboratory experiments focused on the following areas: Newton's laws of motion, forces acting on circular motion, inertia, energy of a rotating body, ideal gas phenomena, heat capacity, radiation energy transfer, beam optics, dispersion, interference and diffraction of light, black body radiation. | |
| Recommended literature: Počítačom podporované prírodovedné laboratórium / Peter Demkanin a kol.. Bratislava : Knižničné a edičné centrum, 2006 Physics : Principles with applications / Douglas C. Giancoli. Harlow : Pearson Education, 2016 Fyzika 1 / David Halliday, Robert Resnick, Jearl Walker ; redakce českého vydání Petr Dub ; přeložili Miroslav Černý ... [et al.]. Brno : VUTUM, 2013 Fyzika 2 / David Halliday, Robert Resnick, Jearl Walker ; redakce českého vydání Petr Dub ; přeložili Miroslav Černý ... [et al.]. Brno : VUTUM, 2013 | |
| Languages necessary to complete the course: Slovak, English | |
| Notes: | |

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|---|-----|-----|-----|-----|-------|
| Past grade distribution | | | | | |
| Total number of evaluated students: 7 | | | | | |
| A | B | C | D | E | FX |
| 85,71 | 0,0 | 0,0 | 0,0 | 0,0 | 14,29 |
| Lecturers: PaedDr. Peter Horváth, PhD. | | | | | |
| Last change: 15.03.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|---|-------|--|-------|------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAI/1-AIN-406/15 | | Course title: Language and Cognition | | | |
| Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 3 | | | | | |
| Recommended semester: 2., 4., 6. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 111 | | | | | |
| A | B | C | D | E | FX |
| 31,53 | 25,23 | 17,12 | 12,61 | 6,31 | 7,21 |
| Lecturers: doc. PhDr. Ján Rybár, PhD. | | | | | |
| Last change: 12.01.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|-------|---|-----|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KEF/1-OZE-271/10 | | Course title: Laser Technique | | | |
| Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 3 | | | | | |
| Recommended semester: 6. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Preliminary evaluation: presentations on a selected topic Final exam: oral / written written semestral project Indicative evaluation scale: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 50/50 | | | | | |
| Learning outcomes: Acquisition of basic principles of construction of optical quantum generators and amplifiers. | | | | | |
| Class syllabus: Optical resonators, their mirrors and dispersion elements of resonators. Methods of forming laser radiation. Specifics of gas, solid state and semiconductor lasers. Laser pulse shortening methods. Use of lasers in science, industry and medicine. | | | | | |
| Recommended literature: Wilson J., Hawkes J. F. B., Lasers principles and applications, Prentice-hall, N. Jersey 1987 P. Engst, Horák M., Aplikace laserů, SNTL, Praha 1989 available scientific literature | | | | | |
| Languages necessary to complete the course: Slovak, English | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 27 | | | | | |
| A | B | C | D | E | FX |
| 81,48 | 11,11 | 3,7 | 3,7 | 0,0 | 0,0 |
| Lecturers: RNDr. Pavel Vojtek, CSc. | | | | | |
| Last change: 22.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|---|-------|---|-------|-------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAI/1-AIN-500/00 | | Course title: Linux for Users | | | |
| Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 2. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: The aim of the course is to acquire skills to work on the command line of Linux operating system. The course is designed not only for beginners. | | | | | |
| Class syllabus: Text console Directories and files Users, groups, redirection and searching Atributes of files and directories Text editor vim Sorting and selecting Finding Processes sed - stream editor awk bash scripts | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 1670 | | | | | |
| A | B | C | D | E | FX |
| 43,65 | 15,45 | 13,53 | 10,24 | 11,26 | 5,87 |
| Lecturers: RNDr. Marek Nagy, PhD. | | | | | |
| Last change: 22.09.2017 | | | | | |

Approved by:

COURSE DESCRIPTION

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|--|-------|---|-------|-------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KJFB+KTF/1-FYZ-116/17 | | Course title: Mathematical Methods in Physics (1) | | | |
| Educational activities: Type of activities: lecture / practicals Number of hours: per week: 4 / 2 per level/semester: 52 / 26 Form of the course: on-site learning | | | | | |
| Number of credits: 6 | | | | | |
| Recommended semester: 3. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Antirequisites: FMFI.KJFB/1-FYZ-116/15 | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 764 | | | | | |
| A | B | C | D | E | FX |
| 30,24 | 14,53 | 17,41 | 14,14 | 17,02 | 6,68 |
| Lecturers: RNDr. Radoslav Böhm, PhD. | | | | | |
| Last change: | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|--|-------|---|-------|-------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KJFB+KTF/1-FYZ-117/17 | | Course title: Mathematical Methods in Physics (2) | | | |
| Educational activities: Type of activities: lecture / practicals Number of hours: per week: 4 / 2 per level/semester: 52 / 26 Form of the course: on-site learning | | | | | |
| Number of credits: 6 | | | | | |
| Recommended semester: 4. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Antirequisites: FMFI.KJFB/1-FYZ-117/15 | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 299 | | | | | |
| A | B | C | D | E | FX |
| 25,75 | 13,71 | 18,06 | 18,73 | 18,39 | 5,35 |
| Lecturers: RNDr. Radoslav Böhm, PhD. | | | | | |
| Last change: | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|--|-----------------------------------|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KJFB/1-BMF-113/16 | Course title: Mechanics |
| Educational activities: Type of activities: lecture / practicals Number of hours: per week: 4 / 2 per level/semester: 52 / 26 Form of the course: on-site learning | |
| Number of credits: 7 | |
| Recommended semester: 3. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: For the semester, the student can get 30% (for tests) and the final written exam has a weight of 50%. The student must obtain at least half a point per semester in order to pass the final written exam. Indicative scale: A (100% -91%), B (90% -81%), C (80% -71%), D (70% -61%), E (60% -51%), Fx (50% -0%). Weight of midterm / final assessment: Midterm assessment 30% / 70% final exam. Scale of assessment (preliminary/final): 30/70 | |
| Learning outcomes: Upon completion of the course, students will become familiar with the basic concepts of mechanics such as mass, energy, momentum, angular momentum, moment of inertia, frequency; they will understand the meaning of equations of motion, they will know how to use conservation laws (momentum, mechanical energy, momentum), gain the ability to solve equations of motion for systems consisting of several points or bodies, they will understand the nature of rotational motions and harmonic motions. | |
| Class syllabus: Physical quantities and units. Movement in one dimension. Vectors. Movement in two and three dimensions. Laws of motion. Applications of Newton's laws of motion. Scalar product, work of constant and non-constant force. Conservative forces and their potential. Energy conservation law. Momentum of the system consisting of several mass points, center of gravity, the law of conservation of momentum. Rotational motion, angular velocity, angular acceleration. Angular momentum of the system consisting of several mass points, the law of its preservation. Inertia tensor. Newton's law for simple rotational motion. Equilibrium conditions. Harmonic oscillator. Damped harmonic oscillator, resonance. Statics and dynamics of fluids (Archimedes' law, Pascal's law, continuity equation, Bernoulli's equation). | |
| Recommended literature: Fyzika část 1. Mechanika : Vysokoškolská učebnice obecné fyziky / David Halliday, Robert Resnick, Jearl Walker ; přeložili Jana Musilová ... [et al.]. Brno : Vysoké učení technické VUTUM, 2000 Fyzika pre študujúcich na vysokých školách technických : 1 : mechanika, | |

akustika, termika / Dionýz Ilkovič. Bratislava: Alfa, 1972 Všeobecná fyzika : 1 : mechanika a molekulová fyzika / Štefan Veis, Ján Maďar, Viktor Martišovič. Bratislava : Alfa, 1978.
Electronic texts and presentations on the subject's website

Languages necessary to complete the course:

Notes:

Past grade distribution

Total number of evaluated students: 606

| A | B | C | D | E | FX |
|-------|-------|-------|------|------|-------|
| 20,63 | 14,69 | 12,71 | 8,75 | 20,3 | 22,94 |

Lecturers: RNDr. Radoslav Böhm, PhD., doc. RNDr. Ivan Sýkora, PhD.

Last change: 20.06.2022

Approved by:

COURSE DESCRIPTION

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|---|------|--|------|------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAFZM/1-FYZ-520/00 | | Course title: Meteorological Instruments and Observation Methods | | | |
| Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 3 | | | | | |
| Recommended semester: 8. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: Instruments for temperature, humidity and air pressure measurements. Measurements of wind direction and velocity, radiation instruments, measurements of evaporation, sunshine duration, precipitation and cooling. Meteors, hydrometeors, lithometeors, photometeors, electrometeors. Observation of clouds, cloudiness and fogs. Historical development of meteorological measurements and observation. Work of meteorological observer at station. Evaluation of meteorological instruments records. | | | | | |
| Recommended literature: Slabá, N.: Manual for observer of meteorological stations of ČSSR (in Slovak). Hydrometeorological Institute Bratislava, Bratislava, 1976, 276 p. Gorodeckij, O. A., Gural'nik, I. I., Larin, V. V.: Meteorology, methods and theoretical means of observation. Gidrometeoizdat, Leningrad, 1984, 328 p. | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 110 | | | | | |
| A | B | C | D | E | FX |
| 81,82 | 7,27 | 2,73 | 0,91 | 0,91 | 6,36 |
| Lecturers: RNDr. Juraj Bartok, PhD. | | | | | |
| Last change: 02.06.2015 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|--|------|--|-----|-------|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KJFB/1-OZE-305/15 | | Course title: Nuclear Energy and Its Environmental Aspects | | | |
| Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 3 | | | | | |
| Recommended semester: 8. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 28 | | | | | |
| A | B | C | D | E | FX |
| 67,86 | 7,14 | 14,29 | 0,0 | 10,71 | 0,0 |
| Lecturers: doc. RNDr. Karol Holý, CSc., doc. RNDr. Monika Müllerová, PhD. | | | | | |
| Last change: 02.06.2015 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|--|---|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KJFB/1-FYZ-601/15 | Course title: Nuclear Physics |
| Educational activities: Type of activities: lecture / practicals Number of hours: per week: 4 / 2 per level/semester: 52 / 26 Form of the course: on-site learning | |
| Number of credits: 7 | |
| Recommended semester: 7. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: Evaluation during the semester: midterm test Final evaluation: oral exam Scale for final grades: A 90%, B 80%, C 70%, D 60%, E 50% | |
| Learning outcomes: The student gains the basic understanding of the nuclear and particle physics, for example, basic properties of atomic nuclei, their radioactive decay, nuclear reactions and basic properties of elementary particles. | |
| Class syllabus: Properties of atomic nuclei. Basic nuclear models, the binding energy of atomic nuclei. Stability and decay of radioactive nuclei. Radioactive decay law. Alpha and beta decay. Nuclear fission. Interaction of charged particles and their detection. Radioactivity in nature. Basic nuclear reactions. Production of unstable radioactive isotopes and their separation. Particle accelerator. Elementary particles (leptons, quarks, interactions, unification theory). Quark model, QCD. Basic astrophysical reactions. Nuclear fusion. | |
| Recommended literature: Introductory nuclear physics / Kenneth S. Krane. Hoboken : Wiley, 1988 Introductory nuclear physics / P. E. Hodgson, E. Gadioli, E. Gadioli Erba. Oxford : Oxford University Press, 1997 Nuclear and particle physics / B. R. Martin. Chichester : John Wiley , 2006 | |
| Languages necessary to complete the course: | |
| Notes: | |

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|---|-------|------|------|------|------|
| Past grade distribution | | | | | |
| Total number of evaluated students: 41 | | | | | |
| A | B | C | D | E | FX |
| 53,66 | 14,63 | 12,2 | 9,76 | 4,88 | 4,88 |
| Lecturers: doc. Mgr. Stanislav Antalic, PhD. | | | | | |
| Last change: 21.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|---|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KJFB/1-OZE-243/10 | Course title: Organic Chemistry |
| Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | |
| Number of credits: 3 | |
| Recommended semester: 6. | |
| Educational level: I. | |
| Prerequisites: | |
| Recommended prerequisites: Subject of organic chemistry (basic compounds, classification of compounds) -Structure and properties of organic molecules (electron structure, bindings in org. molecules, electronegativity, optical activity) -Reactions of organic molecules (basic types, functional groups) -Stereochemistry of organic molecules (conformations of aliphatic, cyclic molecules) -Hydrogen halogen, (structure, reactivity, types of reactions) -Aromatic compounds (characteristics, properties, basic types of reactions) -Carboxylic acids, characteristics, significant reactions -Carboxylic acid derivatives (structure, reactivity) -Aldehydes and ketones (characteristics of functional groups, reactions) -Amines (structure, properties, reactivity) -Amino acids (sorting, properties, basic reactions) -Proteins (structure, characteristics) -DNA,RNA (structure, properties) -Sugars (texture, properties, reactions) -Lipids and membranes (structure, properties) | |
| Course requirements: | |
| Learning outcomes: | |
| Class syllabus: | |
| Recommended literature: | |
| Languages necessary to complete the course: | |
| Notes: | |

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|--|-------|-------|------|-----|-----|
| Past grade distribution | | | | | |
| Total number of evaluated students: 34 | | | | | |
| A | B | C | D | E | FX |
| 70,59 | 11,76 | 14,71 | 2,94 | 0,0 | 0,0 |
| Lecturers: prof. RNDr. Ján Urban, DrSc. | | | | | |
| Last change: 21.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|-------|---|-----|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAFZM/1-OZE-342/15 | | Course title: Physical Analytic Methods | | | |
| Educational activities: Type of activities: course Number of hours: per week: 3 per level/semester: 39 Form of the course: on-site learning | | | | | |
| Number of credits: 4 | | | | | |
| Recommended semester: 8. | | | | | |
| Educational level: I. | | | | | |
| 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 |
| 45,45 | 45,45 | 9,09 | 0,0 | 0,0 | 0,0 |
| Lecturers: doc. RNDr. Karol Hensel, PhD., doc. RNDr. Mário Janda, PhD. | | | | | |
| Last change: 02.06.2015 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|--|-------|---|------|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAFZM/1-OZE-275/15 | | Course title: Physical Aspects of a Geographical System | | | |
| Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 1 per level/semester: 26 / 13 Form of the course: on-site learning | | | | | |
| Number of credits: 4 | | | | | |
| Recommended semester: 6. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Antirequisites: FMFI.KAFZM/2-FMK-146/00 | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 38 | | | | | |
| A | B | C | D | E | FX |
| 73,68 | 18,42 | 5,26 | 2,63 | 0,0 | 0,0 |
| Lecturers: RNDr. Marián Melo, PhD. | | | | | |
| Last change: 25.01.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|---|-----|--|-----|------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFL.KTV/1-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: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 0 | | | | | |
| Recommended semester: 1. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Grades: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: Orientation in the history of the selected sports discipline, mastering the basic principles of compensation of mostly mental burdens of the individual. Creating a positive, lasting relationship to physical education and sports in the sense of calocagation. Mastering the demands for the development of motor abilities, skills, proper technique of performing individual movements in individual sports, individual game activities in collective sports games. | | | | | |
| Class syllabus: Introduction to the basic history of the selected sport, with the basic principles of compensation of one-sided psychological burden of the individual's body. Development of basic motor skills with a stop to all kinds of endurance, coordination, increasing the level of joint mobility. Training of individual game activities in collective sports games. In individual sports disciplines, practice of basic techniques of individual elements. | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: Slovak, English | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 5698 | | | | | |
| A | B | C | D | E | FX |
| 95,35 | 1,7 | 0,12 | 0,0 | 0,07 | 2,76 |
| Lecturers: Mgr. Ladislav Mókus, PaedDr. Dana Mašlejová, Mgr. Jana Leginusová, Mgr. Tomáš Kuchár, PhD., PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek, Mgr. Tomáš Lovecký | | | | | |

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| Last change: 16.06.2022 |
| Approved by: |

COURSE DESCRIPTION

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|--|------|--|------|------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFL.KTV/1-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: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 0 | | | | | |
| Recommended semester: 2. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: Practising offensive and defensive combinations and game at modified rules in collective games such as basketball, volleyball, soccer, floorball. Command of elements of higher difficulty in terms of the level of the activity abilities (crawl stroke, breast stroke, butterfly stroke, trampoline jump, aerobic compositions with steps, fitball, elastic gums, paddling on the running water. | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 4814 | | | | | |
| A | B | C | D | E | FX |
| 96,72 | 1,62 | 0,1 | 0,06 | 0,04 | 1,45 |
| Lecturers: Mgr. Tomáš Kuchár, PhD., PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Jana Leginusová, PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek, Mgr. Tomáš Lovecký | | | | | |
| Last change: 02.06.2015 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|---|-----|--|------|-----|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFL.KTV/1-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: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 3. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: To practise game combinations, tactical - mechanical elements in basketball, volleyball, soccer, floorball, ice hockey, badminton, competition rules in the sports specialization. | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: Slovak, English | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 2799 | | | | | |
| A | B | C | D | E | FX |
| 98,54 | 0,5 | 0,11 | 0,04 | 0,0 | 0,82 |
| Lecturers: Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek, Mgr. Tomáš Lovecký | | | | | |
| Last change: 16.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|---|------|--|------|-----|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KTV/1-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: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 4. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: Preparation for sport championships of the Faculty in the chosen sport at modified rules. The selection of talented students into the teams of the University and Faculty leagues and other faculty sport events. | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: Slovak, English | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 2518 | | | | | |
| A | B | C | D | E | FX |
| 98,53 | 0,16 | 0,08 | 0,04 | 0,0 | 1,19 |
| Lecturers: Mgr. Tomáš Kuchár, PhD., Mgr. Ladislav Mókus, Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek, Mgr. Tomáš Lovecký | | | | | |
| Last change: 15.03.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|---|------|--|-----|-----|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFL.KTV/1-MXX-310/00 | | Course title: Physical Education and Sport (5) | | | |
| Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 5. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: Preparation and participation of individuals and teams in the system of university sport competitions and sport events. | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: Slovak, English | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 1864 | | | | | |
| A | B | C | D | E | FX |
| 98,98 | 0,38 | 0,11 | 0,0 | 0,0 | 0,54 |
| Lecturers: Mgr. Tomáš Kuchár, PhD., Mgr. Ladislav Mókus, Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek, Mgr. Tomáš Lovecký | | | | | |
| Last change: 15.03.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|---|------|--|-----|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFL.KTV/1-MXX-320/00 | | Course title: Physical Education and Sport (6) | | | |
| Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 6. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: Using the communication in the physical education and sport and organizing the sport championships to achieve expressive motion of the sport and health in a valuable orientation the students. | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 1630 | | | | | |
| A | B | C | D | E | FX |
| 98,71 | 0,37 | 0,12 | 0,0 | 0,0 | 0,8 |
| Lecturers: PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Jana Leginusová, Mgr. Tomáš Kuchár, PhD., PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek, Mgr. Tomáš Lovecký | | | | | |
| Last change: 02.06.2015 | | | | | |
| Approved by: | | | | | |

STATE EXAM DESCRIPTION

| | |
|---|---------------------------------|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KJFB/1-OZE-953/15 | Course title: Physics |
| Number of credits: 2 | |
| Recommended semester: 7., 8.. | |
| Educational level: I. | |
| State exam syllabus: | |
| Last change: 21.05.2018 | |
| Approved by: | |

COURSE DESCRIPTION

| | |
|---|-------------------------------------|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KEF/1-OZE-211/15 | Course title: Practical I |
| Educational activities: Type of activities: laboratory practicals Number of hours: per week: 3 per level/semester: 39 Form of the course: on-site learning | |
| Number of credits: 4 | |
| Recommended semester: 5. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: Continuous assessment: preparation for the practice, writing of reports from individual tasks Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 100/0 | |
| Learning outcomes: Improvement and use of theoretical knowledge of mechanics and molecular physics, mastering basic physical measurement methods. The student will master the basic habits of independent scientific work in physics research: working with literature, laboratory protocol, obtaining experimental erudition, critical evaluation of measurement and physical interpretation of processed results, written processing of individual physical problems in the form of a paper. | |
| Class syllabus: In practice, students will gain skills in experimental verification of basic physics laws (Gravitational Law, Hooke's Law, Ideal Gas Law,...), quantitative investigation of physical events (state changes, oscillations, polytropic process,...) and measurement of some basic physical quantities (modulus of elasticity, density, viscosity, speed of sound, humidity, surface tension, gravitational constant, gravitational acceleration,...). Tasks: Density measurement. Measurement of modulus of elasticity. Vibrations of coupled pendulums. Measurement of gravity acceleration. Moment of inertia measurement. Gravitational constant measurement. Heat capacity measurement. Evaporation heat measurement. Determination of dynamic viscosity of fluids. Measurement of dynamic viscosity of liquids by commercial viscometers. The fall of a sphere in a confined gaseous environment. Polytropic process. Determination of surface tension of liquids. Measurement of relative and absolute humidity. Measuring the speed of sound in air. Basic properties of oscillating motion. Some tasks are equipped with sensors allowing measurement and processing of data by computers. For some tasks, conventional measuring instruments and aids are used. | |
| Recommended literature: | |
| Languages necessary to complete the course: english | |

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|---|-------|-------|------|------|------|
| Notes: | | | | | |
| Past grade distribution | | | | | |
| Total number of evaluated students: 188 | | | | | |
| A | B | C | D | E | FX |
| 61,7 | 18,62 | 13,83 | 2,66 | 1,06 | 2,13 |
| Lecturers: doc. RNDr. Juraj Országh, PhD., doc. RNDr. Anna Zahoranová, PhD., doc. Mgr. Dušan Kováčik, PhD., doc. RNDr. Veronika Medvecká, PhD. | | | | | |
| Last change: 01.02.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|--|-------|--------------------------------------|------|------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KEF/1-OZE-212/15 | | Course title: Practical II | | | |
| Educational activities: Type of activities: laboratory practicals Number of hours: per week: 3 per level/semester: 39 Form of the course: on-site learning | | | | | |
| Number of credits: 4 | | | | | |
| Recommended semester: 6. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 220 | | | | | |
| A | B | C | D | E | FX |
| 45,0 | 33,64 | 15,45 | 1,82 | 0,91 | 3,18 |
| Lecturers: doc. RNDr. Tomáš Roch, Dr. techn., RNDr. Ján Greguš, PhD. | | | | | |
| Last change: 01.02.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | |
|--|---------------------------------------|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KJFB+KEF/1- OZE-311/15 | Course title: Practical III |
| Educational activities: Type of activities: laboratory practicals Number of hours: per week: 3 per level/semester: 39 Form of the course: on-site learning | |
| Number of credits: 4 | |
| Recommended semester: 7. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: Continuous assessment: protocols from completed exercises Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 100/0 | |
| Learning outcomes: By completing the course, students will gain experimental skills with the used instrumentation. They will make sure of the agreement between experiments and theories that clarify them in the realized experiments. | |
| Class syllabus: Subjective photometry and light detection, lens imaging, dispersion, properties of optical prism spectrograph, interference, two-beam light interference - Newtonian rings, polarization, sucrose optical activity, refractive index, abbe refractive index measurement by refractometer, light absorption examination, diffraction, Fresnel diffraction of light, Fraunhofer diffraction of light on a slit. Experiments in atomic physics (Franck - Hertz experiment, validation of Stefan-Boltzmann's law, range of alpha particles from Am241 in air), nuclear physics (statistical nature of nuclear processes, determination of gamma ray energy, verification of Compton scattering), applied nuclear physics (measurement of air radioactivity). | |
| Recommended literature: Fyzikálne praktikum IV : Atómová fyzika a detekcia ionizujúceho žiarenia / Matej Florek ... [et al.]. Bratislava : Univerzita Komenského, 1988 Instructions can be found here http://www.dnp.fmph.uniba.sk/~kollar/navodnik.htm Fyzikálne praktikum III : Optika / Zuzana Chorvátová ...[et al.]. Bratislava : Univerzita Komenského, 1984 | |
| Languages necessary to complete the course: english | |
| Notes: | |

| | | | | | |
|--|-------|------|-----|-----|------|
| Past grade distribution | | | | | |
| Total number of evaluated students: 52 | | | | | |
| A | B | C | D | E | FX |
| 65,38 | 19,23 | 7,69 | 0,0 | 0,0 | 7,69 |
| Lecturers: doc. RNDr. Ivan Sýkora, PhD., RNDr. Ján Greguš, PhD., RNDr. Miroslav Ješkovský, PhD. | | | | | |
| Last change: 01.02.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | |
|---|---|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KJFB/1-OZE-372/10 | Course title: Practical Training in Radiometry and Spectrometry |
| Educational activities: Type of activities: laboratory practicals Number of hours: per week: 3 per level/semester: 39 Form of the course: on-site learning | |
| Number of credits: 4 | |
| Recommended semester: 8. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: Preliminary evaluation: elaboration of laboratory protocols. Final evaluation: presentation of the results. Indicative evaluation scale: A 90%, B 80%, C 70%, D 60%, E 50%. Scale of assessment (preliminary/final): 80/20 | |
| Learning outcomes: Upon completion of the course, students will gain practical experience in the use of spectrometric and radiometric methods. | |
| Class syllabus: Study of the basic characteristics of the semiconductor spectrometer. Study of the analysis of a complex gamma spectra. Investigation of the properties of a large area gas counter. Determination of the integral alpha and beta activity of solid samples. Measurement of radon activity concentration by scintillation chamber. Determination of detection efficiency in quenched samples in liquid scintillation technique. Analysis of air samples by semiconductor alpha spectrometer. Determination of radionuclide activity based on dose rate. | |
| Recommended literature: Gamma and X-Ray spectrometry with semiconductor detectors / Klaus Debertin, Richard G. Helmer. Amsterdam : Elsevier, 1988 Státní úřad pro jadernou bezpečnost: Stanovení radonového indexu pozemku přímým měřením, SÚJB, 2012 | |
| Languages necessary to complete the course: Slovak, English | |
| Notes: | |

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|---|-----|-----|-----|-----|-----|
| 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: doc. RNDr. Ivan Sýkora, PhD., doc. RNDr. Monika Müllerová, PhD., Mgr. Ivan Kontuľ, PhD. | | | | | |
| Last change: 21.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|---|------|---|------|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KJFB+KAFZM/1-OZE-910/15 | | Course title: Preparation of BSc Thesis | | | |
| Educational activities: Type of activities: course Number of hours: per week: 3 per level/semester: 39 Form of the course: on-site learning | | | | | |
| Number of credits: 3 | | | | | |
| Recommended semester: 7. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 26 | | | | | |
| A | B | C | D | E | FX |
| 88,46 | 3,85 | 3,85 | 3,85 | 0,0 | 0,0 |
| Lecturers: doc. RNDr. Ivan Sýkora, PhD., doc. RNDr. Marcela Morvová, PhD. | | | | | |
| Last change: 02.06.2015 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|--|-------|--|-------|-------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAMŠ/1-BMF-227/15 | | Course title: Probability and Statistics | | | |
| Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 2 per level/semester: 26 / 26 Form of the course: on-site learning | | | | | |
| Number of credits: 4 | | | | | |
| Recommended semester: 5. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: FMFI.KMANM+KJFB/1-BMF-110/15 - Basics of Mathematics (1) and FMFI.KMANM+KJFB/1-BMF-150/15 - Basics of Mathematics (2) | | | | | |
| Course requirements: Continuous assessment: exam, activity in exercises Exam: written Approximate grading scale: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 30/70 | | | | | |
| Learning outcomes: After completing the course students will be able to calculate the probability of random events, deal with discrete and continuous random variables, perform basic descriptive statistics to assess the basic parametric statistical tests. | | | | | |
| Class syllabus: Fundamentals of probability, probability distributions, random samples, introduction to hypothesis testing, one-sample t test, two-sample t test, simple linear regression, goodness of fit test. | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 120 | | | | | |
| A | B | C | D | E | FX |
| 26,67 | 13,33 | 16,67 | 15,83 | 24,17 | 3,33 |
| Lecturers: doc. Mgr. Pavol Bokes, PhD., Mgr. Iryna Zabaikina | | | | | |
| Last change: 19.10.2016 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|--|--|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFLKTF/1-FYZ-310/15 | Course title: Quantum Theory (1) |
| Educational activities: Type of activities: lecture / practicals Number of hours: per week: 4 / 2 per level/semester: 52 / 26 Form of the course: on-site learning | |
| Number of credits: 7 | |
| Recommended semester: 7. | |
| Educational level: I. | |
| Prerequisites: | |
| Recommended prerequisites: 1-FYZ-231/22 Úvod do modernej fyziky (Introduction to Modern Physics Course) | |
| Course requirements: Grades obtained during the semester are based on solutions to 10 or 11 homework problem sets and midterm exam Final Exam: written exam Marks: A 70%+ max grade, B 60%+ max grade, C 50%+ max grade, D 40%+ max grade, E 33% + max grade Scale of assessment (preliminary/final): 40/60 | |
| Learning outcomes: Learning the basic ideas of quantum mechanics and limitations of macroscopic classical physics. Acquiring knowledge of elementary mathematical formalism and problem solving skills. Developing physics thinking required to control quantum systems. | |
| Class syllabus: Introduction: from the "one meter" dimension to the dimension of atoms. Atomic nuclei, nucleons and quarks. Standard Model of elementary particles. Uncertainty principle. Stability of atoms and origin of their typical size and typical binding energy. Typical size and typical binding energy of the atomic nucleus. Basic concepts of elementary quantum mechanics: wave function and operators. Wave function and mathematical description of a double-slit experiment with electrons. The principle of superposition. Measurement in quantum mechanics. Particle in an infinite well. Physical significance and properties of the wave function. Free particle. Wave packets based on the principle of superposition to describe a free particle. Time-dependent and time-independent Schrodinger equations. Stationary states. Linear and Hermitian operators acting on the space of wave functions. Properties of Hermitian operators. Operators corresponding to simple | |

| <p>physical quantities known from classical physics. Commutator and its significance. Derivation of the uncertainty principle. Time evolution of the general wave function and time evolution of the mean values of physical quantities. Exact derivation of bound state solutions of simple quantum systems and their properties. The final potential well and its graphical solution. A simple harmonic oscillator and ladder operators (i) in the representation of wave functions, (ii) in the general Dirac bra / ket formalism, (iii) in the energy representation. Angular momentum: eigenvalues and eigenfunctions. Properties of spherical harmonics. Derivation of the exact solution for a hydrogen atom (Coulomb potential) and properties of the wave functions of the ground state and lowest excited states. Spin. Stern-Gerlach experiment. Orbital vs. spin angular momentum of the electron. Spin description formalism: spinors and 2x2 Hermitian matrices corresponding to the spin projection operators on the x, y, z axes and on the axis given by a general unit vector. Pauli matrices and their properties, their eigenvalues and eigenvectors. Spin precession in an external homogeneous magnetic field. Time-independent perturbation theory for non-degenerate states as an example of an approximate method for solving the time-independent Schrodinger equation. Usefulness of the method and convergence criteria. Derivation and properties of the solution in the first-order perturbation theory. Motivation for the second order. Energy levels in the second-order perturbation theory - derivation and examples.</p> | | | | | | | | | | | | | | | | | |
|---|------|-------|-------|-------|-------|---|---|---|---|---|----|-------|------|-------|-------|-------|-------|
| <p>Recommended literature: Úvod do kvantovej mechaniky / Ján Pišút, Ladislav Gomolčák, Vladimír Černý. Bratislava : Alfa, 1983 Zbierka úloh z kvantovej mechaniky / Ján Pišút, Vladimír Černý, Peter Prešnajder. Bratislava : Alfa, 1985 (No English translations exist.) D.J.Griffiths: Introduction to Quantum Mechanics, 2ed, Pearson Education Inc, 2005</p> | | | | | | | | | | | | | | | | | |
| <p>Languages necessary to complete the course: Slovak, English</p> | | | | | | | | | | | | | | | | | |
| <p>Notes:</p> | | | | | | | | | | | | | | | | | |
| <p>Past grade distribution Total number of evaluated students: 222</p> <table border="1"> <thead> <tr> <th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>FX</th></tr> </thead> <tbody> <tr> <td>19,37</td><td>8,56</td><td>13,06</td><td>21,62</td><td>26,13</td><td>11,26</td></tr> </tbody> </table> | | | | | | A | B | C | D | E | FX | 19,37 | 8,56 | 13,06 | 21,62 | 26,13 | 11,26 |
| A | B | C | D | E | FX | | | | | | | | | | | | |
| 19,37 | 8,56 | 13,06 | 21,62 | 26,13 | 11,26 | | | | | | | | | | | | |
| <p>Lecturers: doc. RNDr. Tomáš Blažek, PhD.</p> | | | | | | | | | | | | | | | | | |
| <p>Last change: 10.03.2022</p> | | | | | | | | | | | | | | | | | |
| <p>Approved by:</p> | | | | | | | | | | | | | | | | | |

COURSE DESCRIPTION

| | |
|--|--|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KJFB/1-OZE-244/15 | Course title: Radiometric Measurements |
| Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | |
| Number of credits: 3 | |
| Recommended semester: 6. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: Exam: written and oral exam, successful completion of the written part is condition of the oral part. Share in the overall rating: 80/20. Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 0/100 | |
| Learning outcomes: After completing the course, students will gain a basic theoretical understanding of the characteristics of various detectors and the possibilities of their use for measuring various types of radiation and dosimetric quantities. | |
| Class syllabus: Allocation of dosimetric methods, allocation of radiometry in protection against ionizing radiation. Basic structure of measuring apparatus. Specifics of radiometric measurements. Block diagram of measuring apparatus. Basic characteristics of detectors. Response function. Time characteristics. Energy resolution. Nuclear radiation detection methods. Principles of detection. Gas, semiconductor and scintillation detectors. Methods for measuring volume activity. Criteria for method selection, sampling, adjustment, optimization of measurement conditions. Concept of low activity, coefficient of quality, detection limits. Background, an overview of methods of reducing it. Analysis of samples containing alpha emitters. Sample thickness problems. Ionization chamber and grid. Determination of beta-emitter activity. "Total beta-activity", selective determination of nuclides, problems of low-energy radiation, internal computers (proportional and scintillation). Determination of detection efficiency for quenching samples. Methods for determining tritium, radiocarbon. Use of Cherenkov radiation for activity measurement. Gamma spectrometry of environmental samples. Scintillation and semiconductor spectrometry methods, energy dependence of detection efficiency, instrument spectrum processing, energy resolution. Spectrometric path, multidetectors systems. | |
| Recommended literature: Gamma- and X-Ray spectrometry with semiconductor detectors / Klaus Debertin, Richard G. Helmer. Amsterdam : Elsevier, 1988 | |

| | | | | | |
|--|-------|-------|-------|-------|-----|
| Languages necessary to complete the course: Slovak, english | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 11 | | | | | |
| A | B | C | D | E | FX |
| 9,09 | 27,27 | 18,18 | 18,18 | 27,27 | 0,0 |
| Lecturers: doc. RNDr. Ivan Sýkora, PhD. | | | | | |
| Last change: 16.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|---|-----|---|-----|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFL.KTV/1-UXX-340/00 | | Course title: Recreation Sports in Dialy Routine of Pupils and Students | | | |
| Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 5. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: To optimize the daily working programme of the students, the programmes of the sport recreational activities and time-off the students. The sport and health in a value orientation of the students. Using developed elemens in an education physical activity and sport preparation. The programmes of the sport recreational activities as a basic precondition of health strengthening, acquirement of physical capability, fitness, regaining of working energy and readiness of body to confront stress situations and dangerous factors as a basic precondition of health strengthening, acquirement of physical capability, fitness, regaining of working energy and readiness of body to confront stress situations and dangerous factors. | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 44 | | | | | |
| A | B | C | D | E | FX |
| 100,0 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| Lecturers: Mgr. Tomáš Kuchár, PhD. | | | | | |
| Last change: 14.01.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|---|-------|--|------|------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.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: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 1. | | | | | |
| Educational level: I., II. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: Basic communication in Russian, developing other Russian language skills - listening comprehension, reading and writing. | | | | | |
| Class syllabus: To master the fundamentals of general Russian. The language level is A1. Learning the Cyrillic (Russian) alphabet, gaining basic language competence, building up skills and confidence in dealing with unfamiliar authentic and semi-authentic texts. The subject provides a course in Russian language for beginners. | | | | | |
| Recommended literature: The textbook: : Точка Ру А1 (Ольга Долматова, Екатерина Новачац), pracovné karty Падежи 1 (Л.С. Безкоровайная, В.Е. Штыленко). | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 707 | | | | | |
| A | B | C | D | E | FX |
| 58,56 | 16,55 | 11,03 | 4,38 | 1,84 | 7,64 |
| Lecturers: Viktoria Mirsalova | | | | | |
| Last change: 20.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|--|-------|--|-----|------|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.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: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 2. | | | | | |
| Educational level: I., II. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: Basic communication in Russian, developing other Russian language skills - listening comprehension, reading and writing. | | | | | |
| Class syllabus: To master the fundamentals of general Russian. Learning the Cyrillic (Russian) alphabet, gaining basic language competence, building up skills and confidence in dealing with unfamiliar authentic and semi-authentic texts. The subject continues the program of Russian language (1) and provides a course of Russian for beginners. | | | | | |
| Recommended literature: Textbook: Точка Ру А1 (Ольга Долматова, Екатерина Новачац), pracovné karty Падежи 1 (Л.С. Безкорвайная, В.Е. Штыленко). | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 421 | | | | | |
| A | B | C | D | E | FX |
| 65,08 | 15,68 | 8,79 | 3,8 | 0,95 | 5,7 |
| Lecturers: Viktoria Mirsalova | | | | | |
| Last change: 20.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|---|------|--|-----|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.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: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 3. | | | | | |
| Educational level: I., II. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: Basic communication in Russian, developing other Russian language skills - listening comprehension, reading and writing. | | | | | |
| Class syllabus: Learning the handwritten Russian (Russian Cursive Cyrillic), developing further language skills, gaining knowledge of Russian culture, history and way of life, pre-intermediate to intermediate grammar and vocabulary. 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: Точка Ру А2 (Ольга Долматова, Екатерина Новачац) а Short Stories in Russian (Olly Richards, Alex Rowlings) | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 200 | | | | | |
| A | B | C | D | E | FX |
| 70,5 | 17,5 | 8,5 | 2,5 | 0,0 | 1,0 |
| Lecturers: Viktoria Mirsalova | | | | | |
| Last change: 20.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|---|-------|--|------|------|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.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: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 4. | | | | | |
| Educational level: I., II. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: Learning the handwritten Russian (Russian Cursive Cyrillic), developing further language skills, gaining knowledge of Russian culture, history and way of life, pre-intermediate to intermediate grammar and vocabulary. | | | | | |
| Class syllabus: Learning the handwritten Russian (Russian Cursive Cyrillic), developing further language skills, gaining knowledge of Russian culture, history and way of life, pre-intermediate to intermediate grammar and vocabulary. 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: Точка Ру А2 (Ольга Долматова, Екатерина Новачац) a Short Stories in Russian (Olly Richards, Alex Rowlings) | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 144 | | | | | |
| A | B | C | D | E | FX |
| 75,69 | 13,19 | 6,94 | 2,78 | 0,69 | 0,69 |
| Lecturers: Viktoria Mirsalova | | | | | |
| Last change: 20.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | |
|---|---|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KAI/2-IKV a-192/19 | Course title: Science, Technology and Humanity: Opportunities and Risks |
| Educational activities: Type of activities: seminar Number of hours: per week: 3 per level/semester: 39 Form of the course: on-site learning | |
| Number of credits: 5 | |
| Recommended semester: 2. | |
| Educational level: I., II. | |
| Prerequisites: | |
| Course requirements: Semestral evaluation: active participation Final evaluation: essay Weight of the final evaluation: 60% To achieve an A, 90% is needed, for B at least 80%, for C 70%, for D, 60% and for an E, at least 50% of overall assessment. | |
| Learning outcomes: The students will gain awareness of the contemporary and potential future challenges posed by scientific and technological innovations and their impact on human behaviour, culture and society. | |
| Class syllabus: Big data: privacy, politics and power, Internet of things, its usefulness and threats, Assistant AI and its place in future society, Job market and inequality, Enhancements and human rights and the right to change self and others, Initiatives for responsible research, Artificial minds, Hybridization between species and between AI and organic minds, Future of minds and trans-humanism, Artificial emotional intelligence, An after human era. | |
| Recommended literature: - S. Russell: Human compatible. Artificial intelligence and the problem of control. Viking, 2019. - J. Havens: Heartificial intelligence. Embracing our humanity to maximize machines. Penguin, 2016. - P. Boddington: Towards a code of ethics for artificial intelligence. Springer, 2017. - M. Shanahan: The technological singularity. MIT Press, 2015. | |

- C. MacKellar, C.: Cyborg Mind: What Brain–Computer and Mind–Cyberspace Interfaces Mean for Cyberneuroethics. Berghahn Books, 2019.
- G. Bel, J. Gemmell: Total Recall, How the e-Memory Revolution will change everything. Dutton, 2009.
- S. Zuboff: The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power. PublicAffairs, 2019.
- C. O'Neil: Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy. Crown Publishers, 2016.
- M. Tegmark: Life 3.0. Allen Lane, 2017.

Languages necessary to complete the course:

English

Notes:

Past grade distribution

Total number of evaluated students: 48

| A | B | C | D | E | FX |
|-------|-------|------|------|------|------|
| 56,25 | 18,75 | 6,25 | 6,25 | 6,25 | 6,25 |

Lecturers: doc. RNDr. Martin Takáč, PhD., PhDr. Ing. Tomáš Gál, PhD.

Last change: 28.02.2020

Approved by:

COURSE DESCRIPTION

| | |
|--|--|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KJFB+KEF/1- OZE-920/10 | Course title: Seminar in BSc Project |
| Educational activities: Type of activities: seminar Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | |
| Number of credits: 2 | |
| Recommended semester: 8. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: For the semester, the student can get 50% for the preparation of the bachelor thesis project; the final presentation has a weight of 50%. A student must earn at least half of the points for the preparation of the bachelor thesis project in order to pass the final presentation. The student must also score at least 26 points on the final presentation. Grades: A (100-91), B (90-81), C (80-71), D (70-61), E (60-51), FX (50-0). Mid-term / final assessment weighting: 50% mid-term assessment (bachelor thesis project) / 50% final presentation. Scale of assessment (preliminary/final): 50/50 | |
| Learning outcomes: Students will learn the methods of working on an expert project. They will also acquire the necessary knowledge to complete the bachelor thesis. | |
| Class syllabus: Methodological procedures for developing the structure and timetable for the solution of the assigned project, work with literature, methods of data acquisition. What is expected from the students: First public presentation on the assigned topic of the bachelor's thesis, clear formulation of the content and objectives of the thesis, ideas about the methods of solution, analysis of ambiguities. Joint analysis of speeches of individual students. | |
| Recommended literature: Provided by the bachelor thesis supervisor | |
| Languages necessary to complete the course: Slovak, English | |
| Notes: | |

| | | | | | |
|---|-----|-----|-----|-----|------|
| Past grade distribution | | | | | |
| Total number of evaluated students: 48 | | | | | |
| A | B | C | D | E | FX |
| 95,83 | 0,0 | 0,0 | 0,0 | 0,0 | 4,17 |
| Lecturers: doc. RNDr. Karol Holý, CSc., doc. RNDr. Ivan Sýkora, PhD., prof. RNDr. Peter Kúš, DrSc. | | | | | |
| Last change: 22.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|--|-------|--|------|-----|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KMANM/1-MAT-715/15 | | Course title: Seminar in MS-Office | | | |
| Educational activities: Type of activities: seminar Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 2. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Antirequisites: FMFI.KMANM/1-MAT-715/00 | | | | | |
| Course requirements: | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 143 | | | | | |
| A | B | C | D | E | FX |
| 57,34 | 15,38 | 6,99 | 6,99 | 4,9 | 8,39 |
| Lecturers: RNDr. Peter Švaňa, CSc. | | | | | |
| Last change: 02.06.2015 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|--|--|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KMANM/1- MAT-770/15 | Course title: Seminar in TEX |
| Educational activities: Type of activities: seminar Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | |
| Number of credits: 2 | |
| Recommended semester: 1. | |
| Educational level: I. | |
| Prerequisites: | |
| Antirequisites: FMFI.KMANM/1-MAT-770/00 | |
| Course requirements: Ongoing assessment: 10 individual tasks 5 points each Exam: individual work, rewriting the specified text for 50 points Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 50/50 | |
| Learning outcomes: Mastering the MikTeX or LaTeX compiler for writing professional texts. Introduction to editors for creating such texts. | |
| Class syllabus: <ol style="list-style-type: none"> 1. Visualization of a tex file, error messages 2. Basic structure of a tex file, commands and environments, organization of different types of documents 3. Styles and font sizes, tables writing, footnotes 4. Mathematical formulas, creating simple pictures and inserting external pictures 5. Literature writing, index creation, slides 6. Creation of special documents (presentation, letter, ...) | |
| Recommended literature: Teacher's own electronic texts published through web documents. | |
| Languages necessary to complete the course: Slovak, English | |
| Notes: | |

| | | | | | |
|---|-----|------|------|-----|------|
| Past grade distribution | | | | | |
| Total number of evaluated students: 415 | | | | | |
| A | B | C | D | E | FX |
| 84,34 | 5,3 | 3,61 | 1,69 | 1,2 | 3,86 |
| Lecturers: RNDr. Michal Pospíšil, PhD. | | | | | |
| Last change: 17.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|--|-----|--|-----|-----|-------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KJP/1-MXX-171/20 | | Course title: Slovak Language for Foreign Students (1) | | | |
| Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 1. | | | | | |
| Educational level: I., II. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: tests Course prerequisites: https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebežneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/ Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: This course is aimed for foreign students to learn the fundamentals of the Slovak language with the focus on basic communication as well as all other language skills- listening comprehension,reading and writing. | | | | | |
| Class syllabus: The syllabus is targeted at the comprehension of the basics of the Slovak language for the absolute beginners (A1). | | | | | |
| Recommended literature: Križom- Krážom Slovenčina 1, additional material to further support the covered topics. | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 23 | | | | | |
| A | B | C | D | E | FX |
| 47,83 | 0,0 | 0,0 | 0,0 | 0,0 | 52,17 |
| Lecturers: Mgr. Aneta Barnes | | | | | |
| Last change: 21.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|--|-----|--|-----|-----|-------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KJP/1-MXX-172/20 | | Course title: Slovak Language for Foreign Students (2) | | | |
| Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 2. | | | | | |
| Educational level: I., II. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: tests Course prerequisites: https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebežneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/ Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: This course is aimed for foreign students to learn the fundamentals of the Slovak language with the focus on basic communication as well as all other language skills- listening comprehension,reading and writing. | | | | | |
| Class syllabus: The syllabus is targeted at the comprehension of the basics of the Slovak language for the absolute beginners (A1) and this course is a follow up course to the Slovak language course 1. | | | | | |
| Recommended literature: Križom- Krážom Slovenčina 1, additional material to further support the covered topics | | | | | |
| Languages necessary to complete the course: | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 22 | | | | | |
| A | B | C | D | E | FX |
| 81,82 | 0,0 | 4,55 | 0,0 | 0,0 | 13,64 |
| Lecturers: Mgr. Aneta Barnes | | | | | |
| Last change: 21.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | | | | | |
|--|-----|--|-----|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KJP/1-MXX-271/20 | | Course title: Slovak Language for Foreign Students (3) | | | |
| Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 3. | | | | | |
| Educational level: I., II. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: tests Course prerequisites: https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebežneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/ Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: This course is aimed for foreign students to better comprehend all the language skills important to enable correct usage of the Slovak language – listening comprehension, reading, writing and speaking. | | | | | |
| Class syllabus: The syllabus is targeted at the comprehension of all the language skills of the Slovak language , and it is a follow up course to the Slovak language course 2. | | | | | |
| Recommended literature: Križom-Krážom Slovenčina 2, additional material to further support the covered topics. | | | | | |
| 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: Mgr. Aneta Barnes | | | | | |
| Last change: 21.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|--|-----|--|-----|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KJP/1-MXX-272/20 | | Course title: Slovak Language for Foreign Students (4) | | | |
| Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 4. | | | | | |
| Educational level: I., II. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: tests Course prerequisites: https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebežneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/ Scale of assessment (preliminary/final): 100/0 | | | | | |
| Learning outcomes: This course is aimed for foreign students to better comprehend all the language skills important to enable correct usage of the Slovak language – listening comprehension, reading, writing and speaking. | | | | | |
| Class syllabus: The syllabus is targeted at the comprehension of all the language skills of the Slovak language , and it is a follow up course to the Slovak language course 3. | | | | | |
| Recommended literature: Križom-Krážom Slovenčina 2, additional material to further support the covered topics. | | | | | |
| 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: Mgr. Aneta Barnes | | | | | |
| Last change: 21.06.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

| | |
|---|---|
| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KMANM/1- MAT-733/19 | Course title: Software MATLAB |
| Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | |
| Number of credits: 2 | |
| Recommended semester: 1. | |
| Educational level: I., II. | |
| Prerequisites: | |
| Antirequisites: FMFI.KMANM/1-MAT-731/00 and FMFI.KMANM/1-MAT-732/00 | |
| Course requirements: Continuous assessment: activity Examination: group project, practical computer exam Scale of assessment (preliminary/final): 20/80 | |
| Learning outcomes: Students will learn the basics of using MATLAB software. They will be able to use MATLAB to calculate some mathematical problems, read files or write to files, plot computed data, create complex functions for reuse and create a graphical user interface GUI for their programs. | |
| Class syllabus: Format and conversion of variables, vectors and matrices Programming environment, so-called M-file Reading from a file and plotting data Creating functions Graphical GUI environment | |
| Recommended literature: MATLAB - SIMULINK I / Stefan Kozak, Slavomir Kajan. Bratislava: Slovak University of Technology, 1999 Matlab / Jela Babušíková. Bratislava: FMFI UK Library and Publishing Center, 2007 Kozák Š., Kajan S., Matlab - Simulink, 1. Slovak University of Technology in Bratislava, 1999. ISBN Dušek F., MatLab and Simulink, University of Pardubice, 2000 mathworks.com/help | |
| Languages necessary to complete the course: slovak | |
| Notes: | |

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|---|------|-------|-------|-------|-------|
| Past grade distribution | | | | | |
| Total number of evaluated students: 52 | | | | | |
| A | B | C | D | E | FX |
| 19,23 | 25,0 | 13,46 | 15,38 | 11,54 | 15,38 |
| Lecturers: RNDr. Patrik Mihala, PhD. | | | | | |
| Last change: 15.03.2022 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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|---|-----|--|-----|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFL.KTV/1-MXX-115/15 | | Course title: Sports in Nature (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: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Grades: A 90%, B 80%, C 70%, D 60%, E 50%. The condition for the award of 1 or 2 credits is the completion of a multi-day course in its full scope, or the completion of one-day courses in the scope of 4 days. Candidates can apply to the leaders of individual courses. From the presented offer of courses, you can choose the one that suits your interests, abilities and deadlines. | | | | | |
| Learning outcomes: Acquisition and development of basic motor skills and abilities in selected sports: skiing and snowboarding. Mastering the correct technique of performing individual movements, which are necessary for skiing and snowboarding. | | | | | |
| Class syllabus: The student can sign up for the outdoor sports courses offered by the department: skiing, snowboarding and other hobby sports. The lessons in the courses are focused on the development of basic and special movement skills and, mastering the techniques needed for the sports. | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: Slovak | | | | | |
| Notes: KTVŠ does not rent ski equipment. | | | | | |
| Past grade distribution Total number of evaluated students: 227 | | | | | |
| A | B | C | D | E | FX |
| 99,56 | 0,0 | 0,44 | 0,0 | 0,0 | 0,0 |
| Lecturers: Mgr. Martin Dovičák, PhD., Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, PaedDr. Mikuláš Ortutay, Mgr. Júlia Raábová, PhD. | | | | | |

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| Last change: 16.06.2022 |
| Approved by: |

COURSE DESCRIPTION

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|--|-----|--|-----|-----|------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFL.KTV/1-MXX-215/15 | | Course title: Sports in Nature (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: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: Grades: A 90%, B 80%, C 70%, D 60%, E 50% The condition for the award of 1 or 2 credits is the completion of a multi-day course in its full scope, or the completion of one-day courses in the scope of 4 days. Candidates can apply to the leaders of individual courses. From the presented offer of courses, you can choose the one that suits your interests, abilities and deadlines. | | | | | |
| Learning outcomes: Creating a positive and lasting relationship with physical activity. Acquisition and mastery of basic motor skills and abilities in outdoor sports: windsurfing, beach volleyball, water tourism - river rafting, hiking and other sports according to interest. Training and improving the technique needed for the sports. | | | | | |
| Class syllabus: The student can sign up for the outdoor sports courses offered by the department: water tourism - river rafting, windsurfing, beach volleyball, hiking and other hobby sports. The lessons in the courses are focused on the development of basic and special movement skills and, mastering the techniques needed for the sports. | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: Slovak | | | | | |
| Notes: KTVŠ will provide sports equipment. | | | | | |
| Past grade distribution Total number of evaluated students: 194 | | | | | |
| A | B | C | D | E | FX |
| 94,33 | 0,0 | 0,0 | 0,0 | 0,0 | 5,67 |

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| Lecturers: Mgr. Martin Dovičák, PhD., Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, PaedDr. Mikuláš Ortutay, Mgr. Júlia Raábová, PhD. |
| Last change: 16.06.2022 |
| Approved by: |

COURSE DESCRIPTION

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|--|-----|--|-----|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KTV/1-MXX-216/18 | | Course title: Sports in Nature (3) | | | |
| Educational activities: Type of activities: Number of hours: per week: per level/semester: Form of the course: on-site learning | | | | | |
| Number of credits: 1 | | | | | |
| Recommended semester: 3. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Antirequisites: FMFI.KTV/1-UXX-151/22 | | | | | |
| Course requirements: Grades: A 90%, B 80%, C 70%, D 60%, E 50% The condition for the award of 1 or 2 credits is the completion of a multi-day course in its full scope, or the completion of one-day courses in the scope of 4 days. Candidates can apply to the leaders of individual courses. From the presented offer of courses, you can choose the one that suits your interests, abilities and deadlines. | | | | | |
| Learning outcomes: Acquisition and development of basic motor skills and abilities in selected sports: skiing and snowboarding. Mastering the correct technique of performing individual movements, which are necessary for skiing and snowboarding. | | | | | |
| Class syllabus: The student can sign up for the outdoor sports courses offered by the department: skiing, snowboarding. The lessons in the courses are focused on the development of basic and special movement skills and, mastering the techniques needed for the sports. | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: Slovak | | | | | |
| Notes: KTVŠ does not rent ski equipment. | | | | | |
| Past grade distribution Total number of evaluated students: 19 | | | | | |
| A | B | C | D | E | FX |
| 100,0 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |

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| Lecturers: Mgr. Martin Dovičák, PhD., Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, PaedDr. Mikuláš Ortutay, Mgr. Júlia Raábová, PhD. |
| Last change: 16.06.2022 |
| Approved by: |

COURSE DESCRIPTION

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|--|-----|--|-----|-----|-------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KTV/1-MXX-217/18 | | Course title: Sports in Nature (4) | | | |
| Educational activities: Type of activities: Number of hours: per week: per level/semester: Form of the course: on-site learning | | | | | |
| Number of credits: 1 | | | | | |
| Recommended semester: 4. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Antirequisites: FMFI.KTV/1-UXX-152/22 | | | | | |
| Course requirements: Grades: A 90%, B 80%, C 70%, D 60%, E 50% The condition for the award of 1 or 2 credits is the completion of a multi-day course in its full scope, or the completion of one-day courses in the scope of 4 days. Candidates can apply to the leaders of individual courses. From the presented offer of courses, you can choose the one that suits your interests, abilities and deadlines. | | | | | |
| Learning outcomes: Creating a positive and lasting relationship with physical activity. Acquisition and mastery of basic motor skills and abilities in outdoor sports: windsurfing, beach volleyball, water tourism - river rafting, hiking and other sports according to interest. Training and improving the technique needed for the sports. | | | | | |
| Class syllabus: The student can sign up for the outdoor sports courses offered by the department: water tourism - river rafting, windsurfing, beach volleyball, hiking and other hobby sports. The lessons in the courses are focused on the development of basic and special movement skills and, mastering the techniques needed for the sports. | | | | | |
| Recommended literature: | | | | | |
| Languages necessary to complete the course: Slovak | | | | | |
| Notes: KTVŠ will provide material equipment. | | | | | |
| Past grade distribution Total number of evaluated students: 18 | | | | | |
| A | B | C | D | E | FX |
| 88,89 | 0,0 | 0,0 | 0,0 | 0,0 | 11,11 |

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| Lecturers: Mgr. Martin Dovičák, PhD., Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, PaedDr. Mikuláš Ortutay, Mgr. Júlia Raábová, PhD. |
| Last change: 16.06.2022 |
| Approved by: |

COURSE DESCRIPTION

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|---|------|--|-----|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KJP/1-MXX-133/18 | | Course title: Supplementary English Course (1) | | | |
| Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 1. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: tests, homework Scale of assessment (preliminary/final): 100/0 credit - ongoing evaluation Minimum 65 percent of the total points for the assigned work is needed to pass the course. Points can be awarded for attendance, completed homework tasks, and short tests assigned during the course. A 100-93 % B 92-85 % C 84-77 % D 76-70 % E 69-65 % Course prerequisites: https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezhneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/ | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: Texts dealing with the most important topics for FMPI majors combining grammar revision with vocabulary needed to pass the A4 English exam. | | | | | |
| Recommended literature: Study materials are created by the teacher and available in electronic form. Raymond Murphy: Essential Grammar in Use, Cambridge University Press, 1998 Michael McCarthy, Felicity O'Dell: English Vocabulary in Use, Cambridge University Press, 1994 | | | | | |
| Languages necessary to complete the course: English | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 25 | | | | | |
| A | B | C | D | E | FX |
| 52,0 | 24,0 | 8,0 | 0,0 | 8,0 | 8,0 |
| Lecturers: Mgr. Ing. Jana Kočvarová | | | | | |

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| Last change: 17.06.2022 |
| Approved by: |

COURSE DESCRIPTION

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|---|-------|--|-------|------|-------|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KJP/1-MXX-134/18 | | Course title: Supplementary English Course (2) | | | |
| Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 26 Form of the course: on-site learning | | | | | |
| Number of credits: 2 | | | | | |
| Recommended semester: 2. | | | | | |
| Educational level: I. | | | | | |
| Prerequisites: | | | | | |
| Course requirements: tests, homework Scale of assessment (preliminary/final): 100/0 ENcredit - ongoing evaluation Minimum 65 percent of the total points for the assigned work is needed to pass the course. Points can be awarded for attendance, completed homework tasks, and short tests assigned during the course. A 100-93 % B 92-85 % C 84-77 % D 76-70 % E 69-65 %Course prerequisites: https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezhneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/ | | | | | |
| Learning outcomes: | | | | | |
| Class syllabus: Texts dealing with the most important topics for FMPI majors combining grammar revision with vocabulary needed to pass the A4 English exam. | | | | | |
| Recommended literature: Study materials are created by the teacher and available in electronic form. Raymond Murphy: Essential Grammar in Use, Cambridge University Press, 1998 Michael McCarthy, Felicity O'Dell: English Vocabulary in Use, Cambridge University Press, 1994 | | | | | |
| Languages necessary to complete the course: English | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 26 | | | | | |
| A | B | C | D | E | FX |
| 57,69 | 15,38 | 0,0 | 11,54 | 3,85 | 11,54 |
| Lecturers: Mgr. Ing. Jana Kočvarová | | | | | |
| Last change: 17.06.2022 | | | | | |

Approved by:

COURSE DESCRIPTION

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|--|-----|---|-----|-----|-----|
| Academic year: 2021/2022 | | | | | |
| University: Comenius University Bratislava | | | | | |
| Faculty: Faculty of Mathematics, Physics and Informatics | | | | | |
| Course ID: FMFI.KAFZM/1-OZE-376/15 | | Course title: Synoptic Meteorology Practice (1) | | | |
| Educational activities: Type of activities: laboratory practicals Number of hours: per week: 4 per level/semester: 52 Form of the course: on-site learning | | | | | |
| Number of credits: 4 | | | | | |
| Recommended semester: 8. | | | | | |
| Educational level: I. | | | | | |
| 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: Mgr. Zuzana Surová | | | | | |
| Last change: 02.06.2015 | | | | | |
| Approved by: | | | | | |

COURSE DESCRIPTION

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| Academic year: 2021/2022 | |
| University: Comenius University Bratislava | |
| Faculty: Faculty of Mathematics, Physics and Informatics | |
| Course ID: FMFI.KJFB/1-BMF-351/15 | Course title: Thermodynamics and Statistical Physics |
| Educational activities: Type of activities: course Number of hours: per week: 5 per level/semester: 65 Form of the course: on-site learning | |
| Number of credits: 6 | |
| Recommended semester: 8. | |
| Educational level: I. | |
| Prerequisites: | |
| Course requirements: Preliminary evaluation: individual work - project (30 %) Final exam: written and oral (70 %) Indicative evaluation scale: A (100 % -91 %), B (90 % -81 %), C (80 % -71 %), D (70 % -61 %), E (60 % -51 %), Fx (50 % -0 %). Scale of assessment (preliminary/final): 30/70 Scale of assessment (preliminary/final): 30/70 | |
| Learning outcomes: After the course, students are able to use the principles and methods of thermodynamics and statistical physics in practice. | |
| Class syllabus: Mathematical introduction, probability and statistics. First law of thermodynamics. Second law of thermodynamics. Heat engines. Entropy from thermodynamics point of view. Ideal gas. Statistics of system of spins. Statistics of particles in a box. Thermal contact between physical systems. System in thermal contact with reservoir. Canonical distribution. Paramagnetism. Curie's law. Mean energy of an ideal gas of monoatomic molecules. Entropy change at low heat transfer, entropy measurement principle. Statistical physics of classical particles (concept of state and number of available states for the classical system, canonical distribution in the classical approximation, equipartition law, specific heat capacities). Thermal and diffusion contact between systems (thermal and diffusion equilibrium conditions, chemical potential, large canonical distribution). Quantum ideal gases (Fermi and Bose statistics. Quantum ideal gas in the classical limit. Boltzmann distribution. Barometric formula, chemical reactions, statistics of conductivity electrons in metal. Fermi energy of degenerate gas. Phase equilibrium and phase transitions. Transfer phenomena. | |
| Recommended literature: Statistická fyzika / Jozef Kvasnica. Praha : Academia, 1983 Štatistická fyzika / Rudolf Zajac, Ján Pišút. Bratislava : Univerzita Komenského, 1995 Termodynamika a štatistická fyzika : Zbierka úloh / František Čulík, Rudolf Zajac. Bratislava : Univerzita Komenského, 1985 Úvod | |

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| do štatistickej fyziky a termodynamiky / Milan Noga, František Čulík. Bratislava : Univerzita Komenského, 1975 | | | | | |
| Languages necessary to complete the course: slovak, english | | | | | |
| Notes: | | | | | |
| Past grade distribution Total number of evaluated students: 82 | | | | | |
| A | B | C | D | E | FX |
| 28,05 | 18,29 | 24,39 | 17,07 | 10,98 | 1,22 |
| Lecturers: prof. RNDr. Stanislav Tokár, DrSc., RNDr. Radoslav Böhm, PhD., Mgr. Pavol Bartoš, PhD. | | | | | |
| Last change: 20.06.2022 | | | | | |
| Approved by: | | | | | |