Course descriptions

TABLE OF CONTENTS

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/419-PhD/11	**Course title:** Active participation at the domestic scientific events
Educational activities: **Type of activities:** **Number of hours:** **per week: per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 4	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	
Past grade distribution Total number of evaluated students: 342	

ABS	NEABS
100,0	0,0

Lecturers:
Last change:
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/418-PhD/11	**Course title:** Active participation at the international scientific events
Educational activities: **Type of activities:** **Number of hours:** **per week: per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 7	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	

Past grade distribution
Total number of evaluated students: 319

ABS	NEABS
100,0	0,0

Lecturers:
Last change:
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/425-PhD/11	**Course title:** Activities other (eg. A member of the organizing committee of the conference)
Educational activities: **Type of activities:** **Number of hours:** **per week:** **per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 3	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	

Past grade distribution
Total number of evaluated students: 61

ABS	NEABS
100,0	0,0

Lecturers:
Last change:
Approved by:

STATE EXAM DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/504-PhD/11	**Course title:** Analytical Chemistry
Number of credits: 0	
Educational level: III.	
Course requirements: Successful completion of the exam.	
Learning outcomes: After completing the course, the doctoral student will gain advanced theoretical knowledge in the use of modern instrumental analytical methods chromatographic, electromigration, electrochemical, spectral (MS, NMR, IR, UV-VIS, Fluorescent) and nuclear analytical as well as multidimensional techniques (SPE-HPLC, HPLC- HPLC, CE-CE, MS / MS and combinations thereof) in pharmaceutical and biomedical analysis. An integral part of the acquired knowledge are methods of preparation of pharmaceutical and biological samples as well as environmental samples by conventional (off-line) and advanced (on-line) techniques for the mentioned analytical methods. In connection with the synthesis and structural analysis of (i) new molecules as potential drugs or drug carriers for innovative dosage forms as well as (ii) innovative materials (nanostructures) as part of analytical systems and dosage forms, the doctoral student will gain knowledge and skills also for other specific approaches and techniques such as Raman spectroscopy on-line coupled with microwave synthesis, semi-preparative chromatography, electron microscopy, and light scattering-based structural analysis techniques.	
Class syllabus: Analysis of organic bioactive substances, levels of drugs and their metabolites, degradation products and biomarkers of diseases in biological materials (blood, urine, tissues, etc.). Analysis of new organic molecules (potential drugs and drug carriers for innovative dosage forms) in reaction mixtures from organic syntheses and isolated products. Inorganic analysis of biogenic and toxic elements in individual components of the environment (air, soil, herbal drugs, water). Bioinorganic analysis of new metal complexes in reaction mixtures from organic syntheses and isolated products. Use of modern instrumental techniques: • chromatographic (HPLC, GC) and electromigration separation methods (CZE, ITP, IEF, EKC) and their mutual combinations (2D HPLC, 2D / 3D CE) with integrated sample pretreatment for separation of complex (multicomponent) mixtures of substances • spectral methods UV-VIS, FS and LIF (for rapid quantitative evaluation of substances in simple matrices), MS, MS / MS, NMR, IR, Raman spectroscopy, EPR, XRC / XRD (for detailed structural analysis molecules and their complexes) • combined separation and spectral methods (LC-UV / MS, CE-UV / LIF / MS, etc.) to identify and determine trace levels of analytes in simple and complex (multicomponent) matrices (biological samples, dosage forms, synthetic reaction mixtures, isolated products from reaction mixtures) • electrochemical methods with conventional and advanced sensors (biosensors) for rapid determination of selected substances in simple and complex matrices	

• radioanalytical methods: radionuclide X-ray fluorescence analysis (RRFA) for direct determination of elements in solid materials
• methods of analysis of light scattering and electron microscopy for the analysis of nanostructures (shape, size/dimensions, distribution of nanoparticles)
• methods of (semi) preparative chromatography for separation and isolation of selected components from reaction mixtures
Instrumental analytical methods:
Principle of the method, experimental setup (instrumentation), methods of qualitative and quantitative evaluation, analytical and application potential. Optimization, validation and application of methods.
Electrochemical methods:
Potentiometry
Voltammetry (DPV, SWV, CV)
Ion selective electrodes
Biosensors
FIA
Separation chromatographic analytical methods:
Planar and column chromatography
High performance liquid chromatography.
Ion exchange chromatography.
Gas chromatography.
Multidimensional techniques (2D HPLC, SPE-HPLC)
Combining HPLC with advanced detection techniques (HPLC-MS, HPLC-MS / MS)
Separation analytical methods of electromigration:
Electrophoresis in planar arrangement, electromigration techniques in capillary arrangement.
Capillary zone electrophoresis (CZE).
Capillary isotachophoresis (ITP).
Isoelectric focusing (IEF).
Electrokinetic chromatography (EKC).
Capillary gel electrophoresis (CGE).
Capillary electrochromatography (CEC).
Multidimensional techniques (2D CE, 3D CE)
CE coupling with advanced detection techniques (CE-LIF, CE-MS, CE-MS / MS).
Separation preparative chromatographic and electromigration methods:
(semi) preparative liquid chromatography.
Preparative isotachophoresis.
Spectral analytical methods:
Emission spectral analysis
Fluorescence analysis
Atomic absorption spectrophotometry
Molecular absorption spectroscopy in the visible and ultraviolet region of the spectrum
Infrared spectroscopy
Raman spectroscopy.
Mass spectrometry.
Nuclear magnetic resonance.
Non-spectral optical methods:
Refractometry.
Polarimetry.
X-ray crystallographic and diffraction analysis (XRC, XRD).

Electron paramagnetic resonance (EPR).
Detectors:
Optical spectrometric detectors - absorption, fluorescence, MS, non-spectrometric
Electrochemical detectors,
Radiometric detectors
Nuclear analytical methods:
Nuclear analytical indicator methods - radiochromatography, isotope dilution analysis, radioimmunoassay and their use.
Nuclear analytical methods based on natural radioactivity.
Activation analysis.
Nuclear analytical methods - non-activation interaction analysis.
Beta-dispersion analysis.
Radionuclide X-ray fluorescence analysis.
Identification of β and γ radiation.
Other analytical methods:
Methods based on light scattering analysis.
Electron microscopy.
Statistical processing of analytical results and validation of analytical methods and procedures:
Validation parameters (precision, accuracy, linearity, sensitivity, LOD, LLOQ, LOQ, selectivity, robustness, stability, recovery, matrix effect, sample throughput, carry over).
Testing statistical hypotheses.
Validation protocols (ICH, FDA).

State exam syllabus:

Recommended literature:

Mikuš, P., Piešťanský, J., Dokupilová, S.: Kvapalinová chromatografia, hmotnostná spektrometria a ich kombinácie vo farmaceutickej a biomedicínskej analýze, VEDA, Bratislava, 2018. 365s.
Mikuš, P., Piešťanský, J.: Kapilárna elektroforéza, hmotnostná spektrometria a ich kombinácie vo farmaceutickej a biomedicínskej analýze, VEDA, 2014. 310 s.
Mikuš, P., Maráková, K.: HYPHENATED ELECTROPHORETIC TECHNIQUES IN ADVANCED ANALYSIS, Bratislava, KARTPRINT, 2012. 217 s.
Mikuš, P., Hanko, M., Piešťanský, J., Maráková, K., Dokupilová, S., Mikulová, M.: Analytical chemistry: Instrumental analysis. Bratislava : VEDA, in preparation.
Mikuš, P., Mikušová, V.: Analytical chemistry: Chemical analysis. Bratislava : VEDA, 2022.
Tekeľ, J., Mikuš , P.: Vybrané kapitoly z analytickej chémie. Analýza látok v biologických systémoch. Bratislava : UK, 2004, 192 s
Světlík, J.: Molekulová spektroskopia a optické metódy. Bratislava : UK, 2006. 81 s.
Garaj, J., Bustin, D., Hladký, Z.: Analytická chémia. Bratislava, Alfa 1989. 740 s.
Havránek, E. a kol.: Laboratórne cvičenia z analytickej chémie III. Fyzikálno-chemické metódy. Bratislava : UK, 2007. 91 s.
Křenek, P.: Analýza organických látok. Bratislava : UK, 2007. 80 s.
Vybrané kapitoly budú poskytnuté v elektronickej forme.

Languages necessary to complete the course:
Slovak language

Notes:
Teacher: prof. RNDr. Peter Mikuš, PhD., prof. RNDr. Emil Havránek, CSc., PharmDr. Katarína Maráková, PhD., PharmDr. Juraj Piešťanský, PhD.

Last change: 03.04.2022
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/404-PhD/11	**Course title:** Authorship of teaching aids and texts
Educational activities: **Type of activities:** **Number of hours:** **per week: per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 20	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements: completed the evaluation with a credit value after submitting the teaching aid or text (source cover, imprint letters with ISBN or ISSN) to the trainer.	
Learning outcomes: The doctoral student, led by the supervisor, demonstrated the ability to work in the preparation and writing of teaching aids and texts.	
Class syllabus: Doktorand po konzultácii so školiteľom spolupracuje na príprave a písaní učebných pomôcok textov so spoluautormi a s redakciou vydavateľa.	
Recommended literature: Current sources on the presented issues.	
Languages necessary to complete the course: Slovak language	
Notes:	
Past grade distribution Total number of evaluated students: 1	

ABS	NEABS
100,0	0,0

Lecturers:
Last change: 11.02.2022
Approved by:

STATE EXAM DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/506-PhD/11	**Course title:** Biochemistry
Number of credits: 0	
Educational level: III.	
Course requirements: Successful completion of the exam.	
Learning outcomes: After completing selected chapters in biochemistry, the PhD.-student can manage (i) basic biochemical and molecular-biological analyzes, (ii) methodical procedures related to protein analysis techniques, and (iii) enzymological studies on cellular and molecular levels. The student will obtain knowledge about metabolic pathways and their regulation at the level of (i) signaling molecules, (ii) localization at a subcellular level, and (iii) monitoring of gene expression, which creates the precondition for studying the drug mechanism of individual pharmacotherapeutic groups.	
Class syllabus: # Dynamic concept of properties and functions of the biological system. # DNA, RNA: composition, bonds and stability, biological significance. # Biomembranes, respiratory chain, generation of energy. # Metabolism of nutrients – interrelationship, thermodynamic aspect, energetical aspect, biological oxidations. # Enzymology of nutrient metabolism – catabolism and anabolism – carbohydrates, simple and complex lipids, amino acids, nucleotides, proteins. # Enzyme kinetics. # Basic issues of xenobiochemistry and its attributes. # Integration of metabolism in terms of physiological and pathological conditions of the organism. # Experimantal techniques with animal and plant cell cultures. # Plant biochemistry: nitrogen metabolism, enzymology of secondary metabolites, signalling cascades.	
State exam syllabus:	
Recommended literature: D. Voet, J. Voet: Biochemistry, 4th ed., John Wiley & Sons, 2010. D. Dobrota a kol.: Lekárska biochémia, Osveta, Martin, 2016. G. Litwack: Human Biochemistry, 1st ed., Elsevier, 2017. Selected chapters will be provided in electronic form.	
Languages necessary to complete the course: Slovak language	
Notes: Lecturers: doc. Mgr. Andrea Bilková, PhD.; doc. Mgr. Martina Hrčka Dubničková, PhD.; doc. PharmDr. Marek Obložinský, PhD.; RNDr. František Bilka, PhD.; Ing. Ľudmila Pašková, PhD.	

Last change: 11.04.2022
Approved by:

STATE EXAM DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/503-PhD/11	**Course title:** Bioorganic chemistry
Number of credits: 0	
Educational level: III.	
State exam syllabus:	
Last change:	
Approved by:	

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/426-PhD/11	**Course title:** Citation SCI, SSCI
Educational activities: **Type of activities:** **Number of hours:** **per week: per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 5	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	
Past grade distribution Total number of evaluated students: 67	

ABS	NEABS
100,0	0,0

Lecturers:
Last change:
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/427-PhD/11	**Course title:** Citation other
Educational activities: **Type of activities:** **Number of hours:** **per week: per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 3	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	

Past grade distribution
Total number of evaluated students: 9

ABS	NEABS
100,0	0,0

Lecturers:
Last change:
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/405-PhD/11	Co-authorship of teaching aids and texts

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

Number of credits: 10

Recommended semester:

Educational level: III.

Prerequisites:

Course requirements:
He / She completed the evaluation with a credit value after submitting the teaching aid or text (source cover, imprint letters with ISBN or ISSN) to the trainer.

Learning outcomes:
The doctoral student, led by the supervisor, demonstrated the ability to cooperate and co-participate in the preparation and writing of teaching aids and texts.

Class syllabus:
The doctoral student, in consultation with the supervisor, participates in the preparation and writing of teaching aids with the author and other co-authors.

Recommended literature:
Current sources on the presented issues.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 16

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 11.02.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/410-PhD/11	**Course title:** Co-supervisor of the final work of bachelor study
Educational activities: **Type of activities:** **Number of hours:** **per week: per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 10	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	
Past grade distribution Total number of evaluated students: 25	

ABS	NEABS
100,0	0,0

Lecturers:
Last change:
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/407-PhD/11	**Course title:** Co-supervisor of the work to attend to Student´s scientific conference
Educational activities: **Type of activities:** **Number of hours:** **per week:** **per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 10	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	

Past grade distribution
Total number of evaluated students: 37

ABS	NEABS
100,0	0,0

Lecturers:
Last change:
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/429-PhD/11	**Course title:** Completion of a defined stage of the scientific program of the PhD student
Educational activities: **Type of activities:** **Number of hours:** **per week:** **per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 5	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	

Past grade distribution
Total number of evaluated students: 85

ABS	NEABS
98,82	1,18

Lecturers:
Last change:
Approved by:

STATE EXAM DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/300-PhD/11	**Course title:** Dissertation Work Thesis Defense
Number of credits: 0	
Educational level: III.	
State exam syllabus:	
Last change:	
Approved by:	

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/430-PhD/11	**Course title:** Dissertation writting, if was taken to the defense
Educational activities: **Type of activities:** **Number of hours:** **per week: per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 30	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	
Past grade distribution Total number of evaluated students: 110	

ABS	NEABS
99,09	0,91

Lecturers:
Last change:
Approved by:

COURSE DESCRIPTION

<table>
<tr><td colspan="2">Academic year: 2021/2022</td></tr>
<tr><td colspan="2">University: Comenius University Bratislava</td></tr>
<tr><td colspan="2">Faculty: Faculty of Pharmacy</td></tr>
<tr><td>Course ID:
FaF/400-PhD/11</td><td>Course title:
Foreign language exam</td></tr>
<tr><td colspan="2">Educational activities:
Type of activities:
Number of hours:
per week: per level/semester:
Form of the course: on-site learning, distance learning</td></tr>
<tr><td colspan="2">Number of credits: 10</td></tr>
<tr><td colspan="2">Recommended semester:</td></tr>
<tr><td colspan="2">Educational level: III.</td></tr>
<tr><td colspan="2">Prerequisites:</td></tr>
<tr><td colspan="2">Course requirements:</td></tr>
<tr><td colspan="2">Learning outcomes:</td></tr>
<tr><td colspan="2">Class syllabus:</td></tr>
<tr><td colspan="2">Recommended literature:</td></tr>
<tr><td colspan="2">Languages necessary to complete the course:</td></tr>
<tr><td colspan="2">Notes:</td></tr>
<tr><td colspan="2">Past grade distribution
Total number of evaluated students: 210</td></tr>
<tr><td colspan="2"><table>
<tr><td>ABS</td><td>NEABS</td></tr>
<tr><td>99,52</td><td>0,48</td></tr>
</table></td></tr>
<tr><td colspan="2">Lecturers: Mgr. Oľga Hollá, PhDr. Darina Kližanová, PaedDr. Viera Žufková, PhD., Ing. Mgr. Erika Jurišová, PhD.</td></tr>
<tr><td colspan="2">Last change:</td></tr>
<tr><td colspan="2">Approved by:</td></tr>
</table>

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/402-PhD/11	Individual study of the scientific literature

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

Number of credits: 5

Recommended semester:

Educational level: III.

Prerequisites:

Course requirements:
The doctoral student obtains the evaluation completed with a credit value after submitting a written version thematically corresponding to the topic of the dissertation, research, theoretical introduction or project to the supervisor, the doctoral student obtains the evaluation completed with a credit value. The supervisor will give the evaluation to the doctoral student in the AIS and in the study report.

Learning outcomes:
The doctoral student under the guidance of the supervisor will demonstrate the ability to develop a search, theoretical introduction or project that thematically corresponds to the topic of the dissertation.

Class syllabus:
1. The doctoral student prepares a research, theoretical introduction or project corresponding to the main topic of the dissertation under the guidance of the supervisor
2. The doctoral student presents a case study corresponding to the main topic of the dissertation in the presence of the supervisor

Recommended literature:
Current sources on the studied issues.

Languages necessary to complete the course:
Slovak language, English language

Notes:

Past grade distribution
Total number of evaluated students: 618

ABS	NEABS
99,51	0,49

Lecturers:

Last change: 11.02.2022
Approved by:

STATE EXAM DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/501-PhD/11	**Course title:** Inorganic Chemistry
Number of credits: 0	
Educational level: III.	
Course requirements: Successfully passed exam	
Learning outcomes: Upon the subject completion, PhD student gains a more detailed knowledge of inorganic chemistry that is related to both inorganic chemistry basics as well as current trends with the emphasis on inorganic nanoparticles, their physico-chemical properties and potential biological activity.	
Class syllabus: Properties, electronic structure and chemical reactivity of transition metals that are a basis for the formation of inorganic nanoparticles. The basic principles of coordination chemistry and coordination chemistry of metals. Chemistry of selected p-block elements in relation to modern nanotechnology applications. Inorganic nanoparticles in pharmacy. Synthesis of metal nanoparticles and their physical properties. Experimental methods for the characterisation of nanoparticles. Stabilisation of nanoparticles. Biological activity of nanoparticles and applications.	
State exam syllabus:	
Recommended literature: J. Krätsmár-Šmogrovič a kol.: Všeobecná a anorganická chémia., Osveta Martin (2007). R. Chang: General Chemistry: The Essential Concepts, McGraw Hill; 7. vydanie (2013). C. Housecroft, A. Sharpe: Inorganic Chemistry, Pearson, 5. vydanie (2018). C. Altavilla, E. Ciliberto: Inorganic Nanoparticles. Synthesis, Applications, and Perspectives, CRC Press (2010).	
Languages necessary to complete the course: Slovak lankuage, partly English for the study of literature	
Notes: Teachers: doc. Ing. Martin Pisárčik, CSc., Ing. Ladislav Habala, PhD.	
Last change: 03.04.2022	
Approved by:	

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/424-PhD/11	**Course title:** Involvement in the resolution of another research project
Educational activities: **Type of activities:** **Number of hours:** **per week: per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 5	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	
Past grade distribution Total number of evaluated students: 361	

ABS	NEABS
100,0	0,0

Lecturers:
Last change:
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/423-PhD/11	**Course title:** Obtaining of "Grant FaF UK for young scientists" (Co-investigator of grant) 5)
Educational activities: **Type of activities:** **Number of hours:** **per week:** **per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 10	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	

Past grade distribution
Total number of evaluated students: 29

ABS	NEABS
100,0	0,0

Lecturers:
Last change:
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/422-PhD/11	**Course title:** Obtaining of "Grant FaF UK for young scientists" (Principal Investigator) 5)
Educational activities: **Type of activities:** **Number of hours:** **per week:** **per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 15	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	

Past grade distribution
Total number of evaluated students: 243

ABS	NEABS
100,0	0,0

Lecturers:
Last change:
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/421-PhD/11	**Course title:** Obtaining of "University Grant for Young Researchers" (Co - investigator of grant) 5)
Educational activities: **Type of activities:** **Number of hours:** **per week: per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 10	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	

Past grade distribution
Total number of evaluated students: 24

ABS	NEABS
100,0	0,0

Lecturers:
Last change:
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/420-PhD/11	**Course title:** Obtaining of "University Grant for Young Researchers" (Principal Investigator) 5)
Educational activities: **Type of activities:** **Number of hours:** **per week:** **per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 20	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	

Past grade distribution
Total number of evaluated students: 180

ABS	NEABS
100,0	0,0

Lecturers:
Last change:
Approved by:

STATE EXAM DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/502-PhD/11	**Course title:** Organic Chemistry
Number of credits: 0	
Educational level: III.	
Course requirements: Completion of prescribed PhD lectures and seminars; passing the exam.	
Learning outcomes: After completing the course, the PhD student is able to work independently in all areas of drug development and not only where knowledge of organic chemistry is required. The course provides a comprehensive preparation of theoretical organic chemistry, as well as practical training in the field of organic synthesis focusing on the field of selected pharmaceutically important compounds. The gained knowledge and skills are necessary for the completion of the other chemical courses and are also needed for the pharmaceutically oriented courses, e.g. Pharmaceutical Chemistry, Biochemistry, Analytical Chemistry, Pharmacology, Toxicology, Pharmaceutical Technology.	
Class syllabus: The theoretical teaching contains basic principles of chemical bonds origin and the spatial structure of organic compounds with a reflection on their physical-chemical properties. The main attention is paid to the individual sorts of stereoisomerism, electron effects, acid-based characteristics and salt forming, to the development and significance of conjugated and aromatic systems, and, first and foremost in terms of reactivity and behaviour in biological systems. The main attention is also paid to systematic organic chemistry. According to each group of compounds the course deals with their physical-chemical characteristics, properties, reactivity, types and mechanisms of reactions with emphasis on the importance in chemistry of pharmaceuticals and other following chemical courses of pharmaceutical study. As for natural substances only basic knowledge is provided. When teaching the subject emphasis is placed on the use of acquired knowledge of organic chemistry in pharmacy and medicine.	
State exam syllabus:	
Recommended literature: 1. Devínsky, F., Ďurinda, J., Lacko, I., Valentová J.: Organická chémia pre farmaceutov. Martin : Osveta, 2013. 805 s. (učebnica); 2. Favre a, Powell, H.: Nomenclature of Organic Chemistry, Royal Society of Chemistry, 2014,1068 s. , Lukáč M., Devínsky F.: Organická syntéza. Laboratórny manuál.. Bratislava, UK, 2015. 144 s.	
Languages necessary to complete the course: Slovak language	
Notes: Lecturers: doc. PharmDr. Miloš Lukáč, PhD., doc. PharmDr. Jindra Valentová, PhD.	
Last change: 10.04.2022	

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/406-PhD/11	**Course title:** Participation in the management of the thesis in Master's degree
Educational activities: **Type of activities:** **Number of hours:** **per week: per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 15	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements: The course is successfully completed if the trained graduate in AIS-2 is enrolled in the evaluation of the course: Preparation of Diploma Thesis 1 or Preparation of Diploma Thesis 2 or Preparation of Diploma Thesis 3.	
Learning outcomes: The doctoral student will gain experience and acquire the skills necessary for leading the final work of a selected professional issue in the academic space at the 2nd level of university study within the field of study.	
Class syllabus: 1. The doctoral student methodically and professionally guides the student from the choice of topic to the successful defense of the final (diploma) thesis under the supervision of the thesis supervisor. 2. During the entire supervision of the final (diploma) thesis, the doctoral student is responsible for the administration of all requisites related to the final (diploma) thesis in AIS under the supervision of the thesis supervisor. 3. The doctoral student will prepare a certificate of completion of the final (diploma) thesis, which can be confirmed by the head of the department. The evaluation must be accompanied by evaluation assessments of the works. The confirmation signed by the head of the department serves as proof of successful fulfillment of the conditions for completing the course for the supervisor, who on the basis of it will award the evaluation (graduated) to the doctoral student in AIS and in the study report.	
Recommended literature: Current sources on the studied issues.	
Languages necessary to complete the course: Slovak language	
Notes:	

Past grade distribution Total number of evaluated students: 440	
ABS	NEABS
100,0	0,0
Lecturers:	
Last change: 14.02.2022	
Approved by:	

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/403-PhD/11	Passing other subject of the offer 2) of other university faculties

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

Number of credits: 0

Recommended semester:

Educational level: III.

Prerequisites:

Course requirements:
Upon presentation of confirmation of completion of the course at another faculty of the university, the doctoral student is evaluated according to the specific credit evaluation of the course at the faculty.

Learning outcomes:
The doctoral student will gain knowledge of the subject at another faculty of the university.

Class syllabus:
The doctoral student is completing a designated subject at another faculty of the university at which he / she did not complete his / her second degree.

Recommended literature:
Current sources on the presented issues

Languages necessary to complete the course:
Slovak language

Notes:

Past grade distribution
Total number of evaluated students: 13

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 11.02.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/401-PhD/11	**Course title:** Passing prescribed doctoral lectures and seminars 1)
Educational activities: **Type of activities:** **Number of hours:** **per week: per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 10	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	
Past grade distribution Total number of evaluated students: 569	

ABS	NEABS
99,3	0,7

Lecturers:
Last change:
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/411-PhD/11	**Course title:** Passing the Dissertation exam
Educational activities: **Type of activities:** **Number of hours:** **per week: per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 20	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	

Past grade distribution
Total number of evaluated students: 203

ABS	NEABS
99,51	0,49

Lecturers:
Last change: 18.01.2022
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/409-PhD/11	**Course title:** Pedagogical activities - seminars
Educational activities: **Type of activities:** **Number of hours:** **per week: per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 15	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	
Past grade distribution Total number of evaluated students: 237	

ABS	NEABS
99,58	0,42

Lecturers:
Last change:
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/408-PhD/11	**Course title:** Pedagogical activity - exercises
Educational activities: **Type of activities:** **Number of hours:** **per week: per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 10	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	
Past grade distribution Total number of evaluated students: 471	

ABS	NEABS
99,79	0,21

Lecturers:
Last change:
Approved by:

STATE EXAM DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/500-PhD/11	**Course title:** Pharmaceutical Chemistry
Number of credits: 0	
Educational level: III.	
Course requirements: Successful passing of the exam	
Learning outcomes: Expansion and intensification of knowledge from pharmaceutical chemistry the can be used by the student to formulate scientific hypotheses to create a basis for the analytical part of the dissertation and to formulate conclusions following the obtained results.	
Class syllabus: Pharmaceutical/Medicinal Chemistry is a science unto itself, a central science positioned to provide a molecular bridge between basic science of biology and clinical science of medicine (analogous to chemistry being the (central) science between traditional disciplines of biology and physics). From a very broad perspective, a drug design may be divided into two phases fundamental concepts about: a) drugs, receptors, and drug–receptor interactions; b) drug–receptor interactions applied to human disease. Pharmaceutical/Medicinal Chemistry is interdisciplinary, drawing very suitably on Theoretical Chemistry, Organic Chemistry, Analytical Chemistry, Molecular Biology, Pharmacology, and Biochemistry. Despite these complexities, Pharmaceutical/ Medicinal Chemistry has its own clear line – the design and discovery of drug molecules with a comprehensive and precise definition and characterization of their properties, taking into account i) structural integrity of the drug molecules (in pharmaceutical, pharmacokinetic and pharmacodynamic phase, respectively), ii) their structural fragments (pharmacophore, toxicophore, metabophore, biophore, etc.; interchangeable bioisosteres), iii) structural properties, iv) physicochemical features (solubility, surface activity, acid-base and lipohydrophilic properties, stability), v) shape properties (geometric, conformational, topological, steric), vi) stereochemical properties (optical isomers, enantiomers, geometric isomers), estimation of binding affinities (in vitro ligand binding assays) and impact of the drugs - enantiomers and isomers to relevant biological targets), vii) electronic properties. Following that knowledge, structure–biological activity relationships and/or structure-pharmacokinetics relationships and/or structure-toxicity relationships are comprehensively investigated (SAR, STR, QSAR).	
State exam syllabus:	
Recommended literature: Chackalamannil, S., Rotella, D., & Ward, S. (2017). Comprehensive Medicinal Chemistry III, 3. Vyd. Elsevier, Amsterdam, Holandsko, 4536 s. Patrick, G.L. (2017). An Introduction to Medicinal Chemistry. 6. Vyd. Oxford University Press, New York, USA, 832 s. Remko, M. (2019). Základy medicínskej a farmaceutickej chémie, 3. Vyd. Remedika, Bratislava, SR, 480 s.	

Roche, V.F., Zito, S.V., Lemke, T.L., & Williams, D.A. (2019). Foye´s Principles of Medicinal Chemistry, 8. Vyd. Wolters Kluwer Health Adis (ESP), Baltimore, USA, 1168 s.
Silverman, R.B., & Holladay, M.W. (2015). The Organic Chemistry of Drug Design and Drug Action. 3. Vyd. Elsevier, Waltham, USA, 521 s.
Wermuth, C., Aldous, D., Raboisson, P., & Rognan, D. (2015). The Practice of Medicinal Chemistry. 4. Vyd. Academic Press (Elsevier), San Diego, CA, USA; Kidlington, Oxford, Veľká Británia, 903 s

Languages necessary to complete the course:
Slovak language

Notes:
Lecturers: prof. RNDr. Peter Mikuš, PhD, prof. Ing. Vladimír Frecer, DrSc., doc. PharmDr. Ivan Malík, PhD., doc. Mgr. Fils Andriamainty, PhD., Dr.h.c. prof. RNDr. Jozef Čižmárik, PhD., doc. PharmDr. Miroslava Sýkorová, PhD., PharmDr. Vladimír Garaj, PhD.

Last change: 11.04.2022

Approved by:

STATE EXAM DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/800-PhD/11	**Course title:** Pharmacology
Number of credits: 0	
Educational level: III.	
Course requirements: Successful passing of the exam	
Learning outcomes: Expansion and intensification of knowledge from pharmacology the can be used by the student to formulate scientific hypotheses to create a basis for the analytical part of the dissertation and to formulate conclusions following the obtained results.	
Class syllabus: The focus is on one or more of the following areas of pharmacology: - pharmacodynamics with respect to the mechanism of action of drugs - pharmacokinetics - pharmacogenomics - adverse effects of drugs - drug overdose - therapeutic use of drugs Special pharmacology - pharmacology of drugs with effect on the central nervous system - pharmacology of drugs with effect on the autonomous nervous system - pharmacology of drugs with effect on the smooth muscles - pharmacology of drugs with effect on the cardiovascular system and kidneys - pharmacology of blood, inflammation - pharmacology of drugs with effect on the respiratory system - pharmacology of drugs with effect on the gastrointestinal system - pharmacology of drugs with effect on the endocrine system - pharmacology of anti-infective drugs - pharmacology of anticancer drugs - new directions of therapy of diseases using biological drugs	
State exam syllabus:	
Recommended literature: Brunton LL, Hilal-Dandan R, Knollmann BC et al. Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13e, McGraw-Hill Education 2018 Golan D. E., Tashjian Jr A. H.., Armstrong E. J., Armstrong A. Wet al. .: Principles of Pharmacology: The Pathophysiologic Basis of Drug Therapy, 3rd 4th Edition. Lippincott Williams&Wilkins, 20172 Katzung BG, Vanderah TW et al. : Basic & Clinical Pharmacology, 15e, McGraw Hill 2021 Rang, H.P., Dale, M.M. a kol.: Rang and Dale´s Pharmacology, 7th ed. London, Churchill Livingstone, Elsevier, 2012	

Ritter JM. et al.: Rang and Dale's Pharmacology E-Book, Elsevier, 9th ed., 2018

Languages necessary to complete the course:
Slovak language, English language

Notes:
Lecturers: prof. PharmDr. Adriana Ďuriš Adameová, PhD.; prof. PharmDr. Ján Klimas, PhD., MPH.; doc. Peter Křenek, PhD.; doc. PharmDr. Anna Paul Hrabovská, PhD.; doc. PharmDr. Marek Máťuš, PhD.; Mgr. Peter Vavrinec, PhD.; Mgr. Diana Vavrincová, PhD

Last change: 11.04.2022

Approved by:

STATE EXAM DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/505-PhD/11	**Course title:** Physical Chemistry
Number of credits: 0	
Educational level: III.	
Course requirements: final exam	
Learning outcomes: The course is intended to provide the necessary theoretical background for understanding of physicochemical principles in specialized areas: preparation and optimization of drugs formulae, analysis and testing of drugs, mechanism of drug action at molecular level, drug absorption, transport across biological membranes, pharmacodynamics and pharmacokinetics. Physical background of experimental methods used for development of new drugs and mechanisms of their action is emphasized.	
Class syllabus: Physical chemistry builds upon the knowledge from physics and mathematics and is linked with additional chemical, biological and pharmaceutical areas. The scope of the subject: Structure of atoms and molecules. Chemical bonds, intermolecular interactions. Thermodynamics, phase transitions, solutions, partition equilibria, condensed systems. Electrochemistry, solutions of electrolytes, potentiometry. Chemical kinetics, reaction rates and orders, mechanism of chemical reactions. Catalysis, enzymatic catalysis. Kinetics of drug release from drug formulae. Colloidal systems, dispersions, surface phenomena, membrane phenomena. Physical chemistry of biological membranes. Membrane channels. Passive and active transport. Lipids in drug delivery. Lyotropic and thermotropic polymorphism of lipids and methods for its study. Lipid-based nanoparticles in targeted drug delivery. Experimental methods: UV-VIS, fluorescence, IR, Raman, NMR spectroscopy, diffraction, DSC calorimetry, mass spectrometry.	
State exam syllabus:	
Recommended literature: Atkins, P. W.: Fyzikálna chémia: časť 1, 2a, 2b, 3. Bratislava: STU 1999. W.J. Moore: Fyzikální chemie, SNTL, Praha 1981 Cevc G.: Phospholipids handbook. Marcel Dekker, Inc. New York (1993) Mouritsen O.G.: Life – as a matter of fat. The emerging science of lipodomics. Springer – Verlag Berlin Heidelberg (2005) Kováč Š, Leško J.: Spektrálne metódy v organickej chémii, Bratislava, Alfa, 1980 Serdyuk I.N., Zaccai N.R., Zaccai J.: Methods in Molecular Biophysics. Structure, Dynamics, Function. Cambridge University Press, 2007	
Languages necessary to complete the course: Slovak language	

Notes: Lecturers: prof. Ing. Vladimír Frecer, DrSc., prof. RNDr. Daniela Uhríková, CSc., doc. RNDr. Jana Gallová, CSc., RNDr. Alexander Búcsi, PhD., Mgr. Mária Klacsová, PhD., Mgr. Norbert Kučerka, DrSc.
Last change: 11.04.2022
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/428-PhD/11	**Course title:** Presentation at the conference of young scientists
Educational activities: **Type of activities:** **Number of hours:** **per week: per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 5	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	
Past grade distribution Total number of evaluated students: 132	

ABS	NEABS
100,0	0,0

Lecturers:
Last change:
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/417-PhD/11	**Course title:** Professional publications in domestic journal
Educational activities: **Type of activities:** **Number of hours:** **per week: per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 4	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	

Past grade distribution
Total number of evaluated students: 71

ABS	NEABS
98,59	1,41

Lecturers:
Last change:
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/416-PhD/11	Professional publications in international journals

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

Number of credits: 7

Recommended semester:

Educational level: III.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 15

ABS	NEABS
100,0	0,0

Lecturers:

Last change:

Approved by:

STATE EXAM DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/508-PhD/11	**Course title:** Stereochemistry
Number of credits: 0	
Educational level: III.	
State exam syllabus:	
Last change:	
Approved by:	

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/415-PhD/11	**Course title:** The original publication in non current contents domestic journals or conference proceedings
Educational activities: **Type of activities:** **Number of hours:** **per week:** **per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 7	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	

Past grade distribution
Total number of evaluated students: 147

ABS	NEABS
99,32	0,68

Lecturers:
Last change:
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/414-PhD/11	**Course title:** The original publication in non current contents international journals or conference proceedings
Educational activities: **Type of activities:** **Number of hours:** **per week:** **per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 15	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	

Past grade distribution
Total number of evaluated students: 77

ABS	NEABS
100,0	0,0

Lecturers:
Last change:
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/413-PhD/11	**Course title:** The original publication in peer-reviewed domestic journals
Educational activities: **Type of activities:** **Number of hours:** **per week: per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 30	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	
Past grade distribution Total number of evaluated students: 11	

ABS	NEABS
100,0	0,0

Lecturers:
Last change:
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/412-PhD/11	**Course title:** The original publication in peer-reviewed international journals
Educational activities: **Type of activities:** **Number of hours:** **per week: per level/semester:** **Form of the course:** on-site learning, distance learning	
Number of credits: 35	
Recommended semester:	
Educational level: III.	
Prerequisites:	
Course requirements:	
Learning outcomes:	
Class syllabus:	
Recommended literature:	
Languages necessary to complete the course:	
Notes:	
Past grade distribution Total number of evaluated students: 226	

ABS	NEABS
99,12	0,88

Lecturers:
Last change:
Approved by: