Course descriptions

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COURSE DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/457-PhD/21	**Course title:** Active Participation in the Scientific Events 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: 4	
Recommended semester: 1., 2.., 3., 4.., 5., 6.., 7., 8..	
Educational level: III.	
Prerequisites:	
Course requirements: The doctoral student obtains the rating completed with a credit value after submitting the program of scientific events (in which he / she is an active participant) to the supervisor, which is also evidenced by confirmations of the organizers of scientific events about active performance.	
Learning outcomes: the doctoral student under the guidance of the supervisor has demonstrated the ability to work scientifically, ie to create scientific texts that meet the criteria of expertise, scientific and methodological relevance and then present these texts to the audience at a scientific event (conference, scientific seminar, congress).	
Class syllabus: 1. The doctoral student, after consultation with the supervisor, shall develop scientific texts that meet the criteria of professionalism, scientific and methodological relevance. 2. The doctoral student will individually ensure participation in a scientific event (conference, scientific seminar, congress), at which he / she will actively present and present the results of his / her own scientific activity. 3. The doctoral student respects the ethics of publishing, each scientific text is original and the doctoral student presents it only once, while the translation of the content of the original scientific text is not considered as another original scientific text and it is inadmissible for the doctoral student to present it repeatedly.	
Recommended literature: Current sources on the presented issues.	
Languages necessary to complete the course: the language in which the conference is organized	
Notes: Teacher: supervisor	

Past grade distribution
Total number of evaluated students: 30

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 18.04.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/458-PhD/21	**Course title:** Active Participation in the Scientific Events 2
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: 1., 2.., 3., 4.., 5., 6.., 7., 8..	
Educational level: III.	
Prerequisites:	
Course requirements: The doctoral student obtains the rating completed with a credit value after submitting the program of scientific events (in which he / she is an active participant) to the supervisor, which is also evidenced by confirmations of the organizers of scientific events about active performance.	
Learning outcomes: the doctoral student under the guidance of the supervisor has demonstrated the ability to work scientifically, ie to create scientific texts that meet the criteria of expertise, scientific and methodological relevance and then present these texts to the audience at a scientific event (conference, scientific seminar, congress).	
Class syllabus: 1. The doctoral student, after consultation with the supervisor, shall develop scientific texts that meet the criteria of professionalism, scientific and methodological relevance. 2. The doctoral student will individually ensure participation in a scientific event (conference, scientific seminar, congress), at which he / she will actively present and present the results of his / her own scientific activity. 3. The doctoral student respects the ethics of publishing, each scientific text is original and the doctoral student presents it only once, while the translation of the content of the original scientific text is not considered as another original scientific text and it is inadmissible for the doctoral student to present it repeatedly.	
Recommended literature: Current sources on the presented issues.	
Languages necessary to complete the course: the language in which the conference is organized	
Notes: Teacher: supervisor	

Past grade distribution
Total number of evaluated students: 38

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 18.04.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/468-PhD/21	**Course title:** Active Participation in the Scientific Events 3
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: 1., 2.., 3., 4.., 5., 6.., 7., 8..	
Educational level: III.	
Prerequisites:	
Course requirements: The doctoral student obtains the rating completed with a credit value after submitting the program of scientific events (in which he / she is an active participant) to the supervisor, which is also evidenced by confirmations of the organizers of scientific events about active performance.	
Learning outcomes: the doctoral student under the guidance of the supervisor has demonstrated the ability to work scientifically, ie to create scientific texts that meet the criteria of expertise, scientific and methodological relevance and then present these texts to the audience at a scientific event (conference, scientific seminar, congress).	
Class syllabus: 1. The doctoral student, after consultation with the supervisor, shall develop scientific texts that meet the criteria of professionalism, scientific and methodological relevance. 2. The doctoral student will individually ensure participation in a scientific event (conference, scientific seminar, congress), at which he / she will actively present and present the results of his / her own scientific activity. 3. The doctoral student respects the ethics of publishing, each scientific text is original and the doctoral student presents it only once, while the translation of the content of the original scientific text is not considered as another original scientific text and it is inadmissible for the doctoral student to present it repeatedly.	
Recommended literature: Current sources on the presented issues.	
Languages necessary to complete the course: the language in which the conference is organized	
Notes: Teacher: supervisor	

Past grade distribution
Total number of evaluated students: 22

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 18.04.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/469-PhD/21	**Course title:** Active Participation in the Scientific Events 4
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: 1., 2.., 3., 4.., 5., 6.., 7., 8..	
Educational level: III.	
Prerequisites:	
Course requirements: The doctoral student obtains the rating completed with a credit value after submitting the program of scientific events (in which he / she is an active participant) to the supervisor, which is also evidenced by confirmations of the organizers of scientific events about active performance.	
Learning outcomes: the doctoral student under the guidance of the supervisor has demonstrated the ability to work scientifically, ie to create scientific texts that meet the criteria of expertise, scientific and methodological relevance and then present these texts to the audience at a scientific event (conference, scientific seminar, congress).	
Class syllabus: 1. The doctoral student, after consultation with the supervisor, shall develop scientific texts that meet the criteria of professionalism, scientific and methodological relevance. 2. The doctoral student will individually ensure participation in a scientific event (conference, scientific seminar, congress), at which he / she will actively present and present the results of his / her own scientific activity. 3. The doctoral student respects the ethics of publishing, each scientific text is original and the doctoral student presents it only once, while the translation of the content of the original scientific text is not considered as another original scientific text and it is inadmissible for the doctoral student to present it repeatedly.	
Recommended literature: Current sources on the presented issues.	
Languages necessary to complete the course: the language in which the conference is organized	
Notes: Teacher: supervisor	

Past grade distribution
Total number of evaluated students: 12

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 18.04.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/480-PhD/21	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: 1., 2.., 3., 4.., 5., 6.., 7., 8..

Educational level: III.

Prerequisites:

Course requirements:
The doctoral student obtains the rating completed with a credit value after submitting the teaching aid or text (source cover, circulation letters with ISBN or ISSN) to the supervisor.

Learning outcomes:
the doctoral student under the guidance of the supervisor demonstrated the ability to work in the preparation and writing of teaching aids and texts.

Class syllabus:
The doctoral student, after consultation with the supervisor, works on the preparation and writing of teaching aids with the co-authors and the editorial staff.

Recommended literature:
Current sources on the presented issues.

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

Notes:
Teacher: supervisor

Past grade distribution
Total number of evaluated students: 0

ABS	NEABS
0,0	0,0

Lecturers:

Last change: 18.04.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

STATE EXAM DESCRIPTION

Academic year: 2023/2024	
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:

COURSE DESCRIPTION

Academic year: 2023/2024

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/478-PhD/21	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: 1., 2.., 3., 4.., 5., 6.., 7., 8..

Educational level: III.

Prerequisites:

Course requirements:
The doctoral student obtains the rating completed with a credit value after submitting the sections (source cover, circulation letters with ISBN or ISSN, source content, paper), in which there is another citation of the doctoral student's scientific work such as SCI and SSCI.

Learning outcomes:
the doctoral student under the guidance of a supervisor has demonstrated the ability of quality scientific work and self-presentation.

Class syllabus:
As part of his / her scientific work, the doctoral student establishes cooperation with scientific authorities of domestic and foreign origin and supports the promotion of the results of his / her own scientific publishing activity in the scientific area, while monitoring the citation of his / her outputs in other databases except SCI and SSCI.

Recommended literature:
Current sources on the presented issues.

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

Notes:
Teacher: supervisor

Past grade distribution
Total number of evaluated students: 0

ABS	NEABS
0,0	0,0

Lecturers:

Last change: 18.04.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/477-PhD/21	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: 1., 2.., 3., 4.., 5., 6.., 7., 8..

Educational level: III.

Prerequisites:

Course requirements:
The doctoral student obtains the rating completed with credit value after submitting the sections (source cover, circulation letters with ISBN or ISSN, source content, paper), which contains a citation of the doctoral student's scientific work defined as SCI and SSCI.

Learning outcomes:
the doctoral student under the guidance of a supervisor has demonstrated the ability of quality scientific work and self-presentation.

Class syllabus:
As part of his / her scientific work, the doctoral student establishes cooperation with scientific authorities of domestic and foreign origin and supports the promotion of the outputs of his / her own scientific publishing activity in the scientific area, while monitoring the citation response of his / her outputs in the relevant databases.

Recommended literature:
Current sources on the presented issues.

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

Notes:
Teacher: supervisor

Past grade distribution
Total number of evaluated students: 40

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 18.04.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

STATE EXAM DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/910-PhD/11	**Course title:** Clinical Pharmacology and Pharmaco-Therapy
Number of credits: 0	
Educational level: III.	
Course requirements: Passing of the exam.	
Learning outcomes: By completing the course, the PhD student markedly expands and deepens basic information about therapeutic options and possible adverse drug reactions of selected pharmacotherapeutic groups of medicines. Student gains an advanced overview of the latest recommendations for the rational use of medicines in pharmacotherapy. Student gets the latest information on the issue of over-the-counter medicines. Completion of the course will contribute to better employment of PhD graduates in clinical practice as partners of doctors when solving common pharmacotherapeutic problems.	
Class syllabus: ATC codes A – V: - the most current problems of therapeutic use of medicines, - standard therapeutic procedures, - identification and solving of pharmacotherapeutic problems, - recommendations for the rational use of medicines in pharmacotherapy. The issue of over-the-counter medicines in relation to high-risk groups of patients, - interactions of over-the-counter medicines, - prescription from the perspective of non-rational pharmacotherapy - pharmacotherapeutic problems, first aid, therapy, case reports: - the most common diseases of the gastrointestinal tract, diarrhea, constipation, - insomnia and fear, - cough, shortness of breath, - fever, - headache, - bleeding disorders, - minor fungal and viral infections, - ENT diseases, - selected diseases of the mucous membrane - obesity, dyslipidemia, diabetes and cardiovascular diseases, nutritional supplements for good practice,. - particular symptoms of CNS disease, - the most common skin damage, - basics of patient examination, characteristics and first aid: - stomachache, - chest pain and back pain, - dizziness and vomiting,	

- shock and unconsciousness.

State exam syllabus:

Recommended literature:

Kuželová, M., Švec, A., Švec, P.: Kapitoly zo všeobecnej klinickej farmakológie pre farmaceutov. Bratislava : Famaceutická fakulta UK, 2011. 196 s.
Kuželová, M., Švec, A., Švec, P.: Vybrané kapitoly z klinickej farmakológie pre farmaceutov. Bratislava : Famaceutická fakulta UK, 2010. 152 s.
Kuželová M., Kovácsová B., Švec P.: Farmakológia antiinfekčných liečiv. Osveta, 2010. 184s.
Begg EJ. Instant clinical Pharmacology. Blackwell Publishing Ltd. 2003. 112 p.
Katzung BG, Masters SB, Trevor AJ: Basic and clinical pharmacology. The McGraw-Hill Companies, Inc. 2012, 1245 p.
Ritter JM, Lewis LD, Mant TGK, Ferro M: A Textbook of Clinical Pharmacology and Therapeutics. Hodder Arnold Hachette Livre UK. 2008. 476 p
Wawruch M., Laššánová M., Tisoňová J.: Kapitoly z klinickej farmakológie, Univerzita Komenského v Bratislave, 2012, 176 s.
Kriška, M. a kol.: Memorix klinickej farmakológie. Bratislava : SAP, 2002. 879 s.
Kriška, M. a kol.: Riziko liekov v medicínskej praxi. Bratislava : SAP, 2000. 474 s.

Languages necessary to complete the course:
Slovak, English

Notes:
Teachers: prof. PharmDr. Ján Klimas, PhD., MPH., prof. RNDr. Magdaléna Kuželová, CSc., doc. PharmDr. Anna Paul Hrabovská, PhD., PharmDr. Gabriel Dóka, PhD., PharmDr. Stanislava Kosírová, PhD.

Last change: 02.04.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/481-PhD/21	**Course title:** 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: 1., 2.., 3., 4.., 5., 6.., 7., 8..	
Educational level: III.	
Prerequisites:	
Course requirements: The doctoral student obtains the rating completed with a credit value after submitting the teaching aid or text (source cover, circulation letters with ISBN or ISSN) to the supervisor.	
Learning outcomes: the doctoral student under the guidance of 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, after 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: Slovak language, English language	
Notes: Teacher: supervisor	
Past grade distribution Total number of evaluated students: 0	
ABS	NEABS
0,0	0,0
Lecturers:	
Last change: 18.04.2022	
Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.	

COURSE DESCRIPTION

Academic year: 2023/2024

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/488-PhD/21	Completing Other Subject of the Offer 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: 1., 2.., 3., 4..

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 will complete 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, English language

Notes:

Past grade distribution
Total number of evaluated students: 8

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 13.04.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/451-PhD/21	Completing Prescribed Doctoral Lectures and Seminars 1

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

Number of credits: 10

Recommended semester: 1.

Educational level: III.

Prerequisites:

Course requirements:
The doctoral student obtains the rating completed with a credit value after submitting a written version of the list of completed prescribed doctoral lectures and seminars, which thematically correspond to the topic of the dissertation and the subjects of the dissertation examination to the supervisor. The supervisor will give the evaluation to the doctoral student in the AIS and in the study report.

Learning outcomes:
Expansion and deepening of basic knowledge of doctoral students in scientific disciplines, which will be used in formulating hypotheses as a basis for the analytical part of the dissertation and in formulating conclusions for practice resulting from the results achieved.

Class syllabus:
The doctoral student completes the designated lectures and seminar teaching in the range of subjects approved by the guarantor of the study program, from the offer of subjects for doctoral study. The choice of subjects depends on the flexibility of learning trajectories and the achievement of learning outcomes. There are topics to choose from:
- Analytical chemistry
- Analytical monitoring of drug levels in practice
- Inorganic chemistry
- Applied biochemistry
- Biochemistry
- Pharmaceutical botany
- Pharmaceutical chemistry
- Pharmacognosy
- Pharmacology
- Pharmaceutical technology
- Physical chemistry
- Physiology
- Immunology
- Clinical pharmacy

- Clinical pharmacology and pharmacotherapy
- Retail pharmacy and social pharmacy
- Molecular biology
- Molecular biology of plants
- Current trends in preparations of natural origin
- Organic chemistry
- Pathological physiology
- Biological drug technology
- Toxicology
- Public health and pharmaceutical care

Recommended literature:
Current sources on the presented issues.

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

Notes:

Past grade distribution
Total number of evaluated students: 18

ABS	NEABS
100,0	0,0

Lecturers: doc. PharmDr. Szilvia Czigle, PhD., prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD., doc. PharmDr. Silvia Bittner Fialová, PhD., prof. Ing. Vladimír Frecer, DrSc., prof. Ing. Miroslav Habán, PhD., PharmDr. Katarína Maráková, PhD., prof. Ing. Milan Nagy, CSc., doc. PharmDr. Juraj Piešťanský, PhD., doc. Mgr. Fils Andriamainty, PhD., PharmDr. Vladimír Garaj, PhD., Ing. Ladislav Habala, PhD., doc. PharmDr. Ivan Malík, PhD., doc. Ing. Martin Pisárčik, CSc., doc. PharmDr. Miroslava Sýkorová, PhD., doc. PharmDr. Marek Máťuš, PhD., PharmDr. Veronika Mikušová, PhD., doc. PharmDr. Daniela Mináriková, PhD., doc. PharmDr. Anna Paul Hrabovská, PhD., prof. PharmDr. Tomáš Tesař, PhD., MBA, RNDr. František Bilka, PhD., doc. Mgr. Andrea Bilková, PhD., PharmDr. Gabriel Dóka, PhD., doc. Mgr. Martina Hrčka Dubničková, PhD., doc. PharmDr. Peter Křenek, PhD., doc. PharmDr. Marek Obložinský, PhD., doc. PharmDr. Miloš Lukáč, PhD., RNDr. Alexander Búcsi, PhD., doc. RNDr. Jana Gallová, CSc., Mgr. Mária Klacsová, PhD., prof. RNDr. Daniela Uhríková, CSc., Dr.h.c. prof. RNDr. Jozef Čižmárik, PhD., prof. RNDr. Emil Havránek, PhD., Ing. Ľudmila Pašková, PhD., doc. RNDr. Miroslava Šupolíková, PhD., doc. Mgr. Peter Vavrinec, PhD., doc. PharmDr. Stanislava Kosírová, PhD., Mgr. Ondrej Sprušanský, PhD., doc. Mgr. Diana Vavrincová, PhD., PharmDr. Eva Kráľová, PhD., doc. PharmDr. Tomáš Rajtík, PhD.

Last change: 18.04.2022

Approved by: prof. PharmDr. Ján Klimas, PhD., MPH, prof. PharmDr. Adriana Duriš Adameová, PhD., prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/452-PhD/21	**Course title:** Completing Prescribed Doctoral Lectures and Seminars 2
Educational activities: **Type of activities:** lecture / seminar **Number of hours:** **per week:** 1 / 2 **per level/semester:** 14 / 28 **Form of the course:** on-site learning, distance learning	
Number of credits: 10	
Recommended semester: 2.	
Educational level: III.	
Prerequisites:	
Course requirements: The doctoral student obtains the rating completed with a credit value after submitting a written version of the list of completed prescribed doctoral lectures and seminars, which thematically correspond to the topic of the dissertation and the subjects of the dissertation examination to the supervisor. The supervisor will give the evaluation to the doctoral student in the AIS and in the study report.	
Learning outcomes: Expansion and deepening of basic knowledge of doctoral students in scientific disciplines, which will be used in formulating hypotheses as a basis for the analytical part of the dissertation and in formulating conclusions for practice resulting from the results achieved.	
Class syllabus: The doctoral student completes the designated lectures and seminar teaching in the range of subjects approved by the guarantor of the study program, from the offer of subjects for doctoral study. The choice of subjects depends on the flexibility of learning trajectories and the achievement of learning outcomes. There are topics to choose from: - Analytical chemistry - Analytical monitoring of drug levels in practice - Inorganic chemistry - Applied biochemistry - Biochemistry - Pharmaceutical botany - Pharmaceutical chemistry - Pharmacognosy - Pharmacology - Pharmaceutical technology - Physical chemistry - Physiology - Immunology - Clinical pharmacy - Clinical pharmacology and pharmacotherapy - Retail pharmacy and social pharmacy - Molecular biology - Molecular biology of plants - Current trends in preparations of natural origin - Organic chemistry - Pathological physiology - Biological drug technology - Toxicology - Public health and pharmaceutical care	
Recommended literature: Current sources on the presented issues.	
Languages necessary to complete the course: Slovak language, English language	
Notes:	

Past grade distribution
Total number of evaluated students: 18

ABS	NEABS
100,0	0,0

Lecturers: RNDr. František Bilka, PhD., doc. Mgr. Andrea Bilková, PhD., doc. PharmDr. Marek Obložinský, PhD., Ing. Ľudmila Pašková, PhD., doc. Mgr. Martina Hrčka Dubničková, PhD., prof. RNDr. Peter Mikuš, PhD., doc. PharmDr. Juraj Piešťanský, PhD., PharmDr. Katarína Maráková, PhD., doc. PharmDr. Silvia Bittner Fialová, PhD., doc. PharmDr. Szilvia Czigle, PhD., RNDr. Peter Gál, PhD., MBA, prof. Ing. Miroslav Habán, PhD., prof. PharmDr. Pavel Mučaji, PhD., prof. Ing. Milan Nagy, CSc., doc. Mgr. Fils Andriamainty, PhD., doc. PharmDr. Miroslava Sýkorová, PhD., Dr.h.c. prof. RNDr. Jozef Čižmárik, PhD., Ing. Jaroslav Galba, PhD., PharmDr. Vladimír Garaj, PhD., doc. PharmDr. Ivan Malík, PhD., prof. RNDr. Daniela Uhríková, CSc., RNDr. Alexander Búcsi, PhD., doc. RNDr. Jana Gallová, CSc., Mgr. Mária Klacsová, PhD., Mgr. Norbert Kučerka, DrSc., Mgr. Ondrej Sprušanský, PhD., doc. PharmDr. Marek Máťuš, PhD., doc. Mgr. Diana Vavrincová, PhD., doc. Mgr. Peter Vavrinec, PhD., PharmDr. Gabriel Dóka, PhD., doc. PharmDr. Anna Paul Hrabovská, PhD., prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, doc. PharmDr. Tomáš Rajtík, PhD., doc. PharmDr. Stanislava Kosírová, PhD., PharmDr. Eva Kráľová, PhD., doc. PharmDr. Peter Křenek, PhD., doc. RNDr. Miroslava Šupolíková, PhD., PharmDr. Veronika Mikušová, PhD., Ing. Ladislav Habala, PhD., doc. Ing. Martin Pisárčik, CSc., doc. PharmDr. Jindra Valentová, PhD., doc. PharmDr. Miloš Lukáč, PhD., doc. PharmDr. Daniela Mináriková, PhD., prof. PharmDr. Tomáš Tesař, PhD., MBA, prof. RNDr. Magdaléna Kuželová, CSc., prof. Ing. Vladimír Frecer, DrSc.

Last change: 18.04.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/453-PhD/21	Completing Selected Doctoral Lectures and Seminars

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

Number of credits: 10

Recommended semester: 3.

Educational level: III.

Prerequisites:

Course requirements:
The doctoral student obtains the rating completed with a credit value after submitting a written version of the list of completed prescribed doctoral lectures and seminars, which thematically correspond to the topic of the dissertation and the subjects of the dissertation examination to the supervisor. The supervisor will give the evaluation to the doctoral student in the AIS and in the study report.

Learning outcomes:
Expansion and deepening of knowledge of doctoral students in scientific disciplines, which will be used in formulating hypotheses as a basis for the analytical part of the dissertation and in formulating conclusions for practice resulting from the results achieved.

Class syllabus:
The doctoral student completes the designated lectures and seminar teaching in the range of subjects approved by the guarantor of the study program, from the offer of subjects for doctoral study. The choice of subjects depends on the flexibility of learning trajectories and the achievement of learning outcomes. There are topics to choose from:
- Analytical chemistry
- Analytical monitoring of drug levels in practice
- Inorganic chemistry
- Applied biochemistry
- Biochemistry
- Pharmaceutical botany
- Pharmaceutical chemistry
- Pharmacognosy
- Pharmacology
- Pharmaceutical technology
- Physical chemistry
- Physiology
- Immunology
- Clinical pharmacy

- Clinical pharmacology and pharmacotherapy
- Retail pharmacy and social pharmacy
- Molecular biology
- Molecular biology of plants
- Current trends in preparations of natural origin
- Organic chemistry
- Pathological physiology
- Biological drug technology
- Toxicology
- Public health and pharmaceutical care

Recommended literature:
Current sources on the presented issues.

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

Notes:

Past grade distribution
Total number of evaluated students: 17

ABS	NEABS
100,0	0,0

Lecturers: RNDr. František Bilka, PhD., doc. Mgr. Andrea Bilková, PhD., doc. PharmDr. Marek Obložinský, PhD., Ing. Ľudmila Pašková, PhD., doc. Mgr. Martina Hrčka Dubničková, PhD., prof. RNDr. Peter Mikuš, PhD., doc. PharmDr. Juraj Piešťanský, PhD., prof. RNDr. Emil Havránek, PhD., PharmDr. Katarína Maráková, PhD., doc. PharmDr. Silvia Bittner Fialová, PhD., doc. PharmDr. Szilvia Czigle, PhD., RNDr. Peter Gál, PhD., MBA, prof. Ing. Miroslav Habán, PhD., prof. PharmDr. Pavel Mučaji, PhD., prof. Ing. Milan Nagy, CSc., Dr.h.c. prof. RNDr. Jozef Čižmárik, PhD., prof. Ing. Ferdinand Devínsky, DrSc., prof. RNDr. Magdaléna Kuželová, CSc., doc. Mgr. Fils Andriamainty, PhD., doc. PharmDr. Miroslava Sýkorová, PhD., Ing. Jaroslav Galba, PhD., PharmDr. Vladimír Garaj, PhD., doc. PharmDr. Ivan Malík, PhD., prof. RNDr. Daniela Uhríková, CSc., RNDr. Alexander Búcsi, PhD., doc. RNDr. Jana Gallová, CSc., Mgr. Mária Klacsová, PhD., Mgr. Norbert Kučerka, DrSc., Mgr. Ondrej Sprušanský, PhD., doc. PharmDr. Marek Máťuš, PhD., doc. Mgr. Diana Vavrincová, PhD., doc. Mgr. Peter Vavrinec, PhD., doc. PharmDr. Anna Paul Hrabovská, PhD., prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, doc. PharmDr. Tomáš Rajtík, PhD., doc. PharmDr. Stanislava Kosírová, PhD., doc. PharmDr. Peter Křenek, PhD., doc. RNDr. Miroslava Šupolíková, PhD., PharmDr. Veronika Mikušová, PhD., Ing. Ladislav Habala, PhD., doc. Ing. Martin Pisárčik, CSc., doc. PharmDr. Jindra Valentová, PhD., doc. PharmDr. Miloš Lukáč, PhD., doc. PharmDr. Daniela Mináriková, PhD., prof. PharmDr. Tomáš Tesař, PhD., MBA

Last change: 18.04.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/489-PhD/21	Completion of a Defined Stage of the PhD Scientific Program

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: 7., 8..

Educational level: III.

Prerequisites:

Course requirements:
The doctoral student obtains the rating completed with a credit value upon submission of all required outcomes achieved during the doctoral study.

Learning outcomes:
After evaluating the results achieved, the doctoral student demonstrates the supervisor's ability to perform scientific work, ie to create scientific texts that meet the criteria of expertise, scientific and methodological relevance and then present these texts to the audience at a scientific event and demonstrates the ability to cooperate with domestic and foreign scientific authorities.

Class syllabus:
After consulting with the supervisor, the doctoral student will present the achieved results of his / her study, which meet the criteria of professionalism, scientific knowledge and methodological relevance in the given field of study.

Recommended literature:

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

Notes:
Teacher: supervisor

Past grade distribution
Total number of evaluated students: 21

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 18.04.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

STATE EXAM DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/302-PhD/22	**Course title:** Dissertation Thesis and its Defence
Number of credits: 30	
Educational level: III.	
Recommended prerequisites: Defined in the individual study plan of the doctoral student and in the Study Regulations of FPHARM CU.	
Course requirements: The doctoral student will obtain the rating completed with credit value after successfully defending the dissertation thesis. Fulfillment of required conditions according to regulations and submission of dissertation thesis.	
Learning outcomes: after a successful defense he / she will obtain a title PhD.	
Class syllabus: 1) The doctoral student will prepare a dissertation thesis. Through the dissertation, the student demonstrates the ability and readiness for independent scientific and creative activity in the field of research or development or for independent theoretical and creative activity. It should be characterized by a high degree of analysis and synthesis of knowledge, as well as a sufficient overview of the existing literature. The work must be original, created by the author in compliance with the rules of working with information sources. The school work must not have the character of plagiarism, nor must it infringe the copyrights of other authors. The author is obliged to thoroughly cite the information sources used, to name the specific and specific research results of other authors or authors, by citing the relevant source, to accurately describe the methods and working procedures of other authors or collectors, to document laboratory results and field research of other authors or collectives. The citation technique is guided by the practice in the given scientific field, respecting the relevant standards and norms. 2) The doctoral student will briefly state the essential content of his / her dissertation, its concept, results and contribution in the defense of the dissertation. 3) The doctoral student will take a position on the opinions of the opponents, in particular he will comment on all objections and comments and answer their questions. 4) During the discussion, the doctoral student will answer all questions and take a stand on all suggestions and objections of its participants.	
State exam syllabus:	
Recommended literature: Current sources on the studied issues	
Languages necessary to complete the course: Slovak language, in case of the consent of the dean and the consent of the chairman of the commettee of the doctoral study on the proposal of the doctoral student also in another world language, preferably English.	
Last change: 18.04.2022	

Approved by:

COURSE DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/456-PhD/21	**Course title:** Elaboration of a Manuscript of a Scientific Publication in a Foreign Language as the First Author
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: 5., 6..	
Educational level: III.	
Prerequisites:	
Course requirements: The doctoral student obtains the rating completed with a credit value after submitting the manuscript of the scientific work in a foreign language to the supervisor, which documents the ability to create a scientific text for publication in a journal with IF. The student is the first author in the manuscript	
Learning outcomes: a doctoral student under the guidance of a supervisor demonstrates the ability to work scientifically, i. e. a scientific text that meets the criteria of professionalism, scientific and methodological relevance.	
Class syllabus: 1. The doctoral student, after consultation with the supervisor, shall develop scientific texts in a foreign language (English language is recommended) that meet the criteria of professionalism, scientific and methodological relevance. 2. The scientific text of the manuscripts consists of the basic parts: - abstract - introduction - material and methods - results and discussion - literature. 3. The doctoral student respects the ethics of publishing, each scientific text is original.	
Recommended literature: Current sources on the presented issues.	
Languages necessary to complete the course: foreign language, English is recommended	
Notes: Lecturer: supervisor	

Past grade distribution
Total number of evaluated students: 26

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 18.04.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/432-PhD/21	English Language and Foreign Language Exam

Educational activities:
Type of activities: seminar
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning, distance learning

Number of credits: 10

Recommended semester: 1.

Educational level: III.

Prerequisites:

Course requirements:
The doctoral student will receive a credit value evaluation after successfully passing the foreign language exam (min. 60%).

Learning outcomes:
The doctoral student will gain knowledge of academic language preparation in English at a terminological and grammatical level.

Class syllabus:
Demonstration of academic language competences at level B2 (according to the Common European Framework of Reference for Languages) in English in written and oral form.
Academic texts and tasks are focused on pharmacy practice, the role of pharmacist in contact with patient, description of basic laboratory equipment, knowledge of terminology of vitamins and minerals, first aid, hereditary factors, addictions, theoretical aspects of pharmacology and drug therapy and complementary medicine.

Recommended literature:
English for Pharmacists I. – IV.

Languages necessary to complete the course:
English language

Notes:

Past grade distribution
Total number of evaluated students: 18

ABS	NEABS
100,0	0,0

Lecturers: PhDr. Darina Kližanová, PaedDr. Viera Žufková, PhD.

Last change: 07.06.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

STATE EXAM DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/807-PhD/11	**Course title:** Immunology
Number of credits: 0	
Educational level: III.	
Course requirements: Successful passing the exam	
Learning outcomes: By completing the course, the doctoral student will expand his/her knowledge about the importance and function of the human immune system as well as about the mechanisms of its action. In a comprehensive view, he/she will obtain additional information on how drugs, when applied to the body, act on specific immune mechanisms that are essential in the prevention and treatment of diseases. Student will also understand the principles and ways of using the immunodiagnostic methods that the pharmacist encounters in practice.	
Class syllabus: The course Immunology deals with the knowledge of basic and clinical immunology. The student is acquainted with the composition and function of the human immune system, the mechanisms of cellular and humoral immunity, as well as the preventive, therapeutic and practical use of immunology in medicine and pharmaceutical practice. The basic part of Immunology deals with inflammation, fever, structure and function of complement, cytokines, antigens and antibodies. Emphasis is placed on the preparation and use of monoclonal antibodies in pharmacy and medicine, without which modern diagnostics and therapy of diseases would not be possible. The clinical part of Immunology focuses on anti-infective, transplant and anti-tumor immunity and also deals with immunopathological diseases, as well as the latest immunostimulatory and immunosuppressive pharmaceuticals, preparation, application and use of vaccines and passive immunization products for disease prevention and therapy. The conclusion represent the principles of basic immunodiagnostic methods that pharmacists encounter in practice.	
State exam syllabus:	
Recommended literature: Buc M.: Základná a klinická imunológia. Bratislava: UK, 2009. 602 s. Kiňová Sepová H., Bilková A., Hrčka Dubničková M., Dudík B.: Imunologické metódy: princípy a návody na praktické cvičenia. Bratislava: UK, 2021. Doan, T., Melvold, R., Viselli, S., Waltenbaugh, C.: Lippincotts Illustrated Reviews Immunology. Wolters Kluwer Health, 2021	
Languages necessary to complete the course: Slovak, English	
Notes: Teacher: doc. Mgr. Andrea Bilková, PhD., doc. Mgr. Martina Hrčka Dubničková, PhD.	
Last change: 01.04.2022	

Approved by:

COURSE DESCRIPTION

Academic year: 2023/2024

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/470-PhD/21	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: 2

Recommended semester: 1., 2.., 3., 4.., 5., 6.., 7., 8..

Educational level: III.

Prerequisites:

Course requirements:
The doctoral student obtains the rating 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 provides the evaluation to the doctoral student by making an entry into the AIS and in the study records.

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: 95

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 18.04.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/455-PhD/21	Introduction to Scientific Research

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

Number of credits: 4

Recommended semester: 1.

Educational level: III.

Prerequisites:

Course requirements:
- active participation in seminars – seminar work (40%) - final test (60%). The student must achieve at least 60% of the total assessment to complete the course.
Scale of assessment (preliminary/final): 40/60

Learning outcomes:
After completing the seminars, the students can formulate their ideas, search for arguments, and conduct scientific interviews. They will learn to deal with evidence, be creative, inform, analyse, and understand the meaning of scientific research.

Class syllabus:
The focus covers the following areas of scientific research and education:
- University education
- Doctoral studies and PhD degree.
- Science, research and observation
- Selection of a scientific problem
- Scientific research and experience
- Experiment and experimenter
- The meaning of scientific research
- Scientific problem and its solution
- Objectives and methods of scientific research
- From observation to experiment
- Ethics in scientific work
- Science, pharmacy and clinical monitoring

Recommended literature:
Hulín I., Ostatníková D. et al. O vedeckom bádaní v medicíne, Bratislava, AEPress 2014, p. 240.
Bielik L. Methodology of Science an Introduction, Bratislava, Comenius University in Bratislava, 2019, p. 232.

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

Notes:

Past grade distribution
Total number of evaluated students: 15

ABS	NEABS
100,0	0,0

Lecturers: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, doc. PharmDr. Miloš Lukáč, PhD., prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD., prof. RNDr. Daniela Uhríková, CSc.

Last change: 07.06.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/454-PhD/21	Introduction to Scientific Writing in English Language

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

Number of credits: 4

Recommended semester: 2.

Educational level: III.

Prerequisites:

Course requirements:
- active participation in seminars - midterm test (15%) - final test (85%). The student must achieve at least 60% of the total assessment to complete the course.
Scale of assessment (preliminary/final): 15/85

Learning outcomes:
After completing the seminars, the students can formulate their ideas, search for arguments, and conduct scientific interviews through academic writing. They will learn to deal with evidence, be creative, inform, analyse, use professional terminology if necessary.

Class syllabus:
The seminars follow the deepening of communicative skills and the acquisition of specific terminology. In addition to selected texts from textbooks, texts from promotional materials, manuals and magazines are used. The following topics are covered: writing professional articles, reports, interviews, lectures, emails, creating abstracts and summaries, presentations on assigned topics.

Recommended literature:
Rejharová, V.: Letter – Writer. Praha: Academia, 1972,
Bates, M., Dudley, T.: Nucleus: General Science. London: Longman, 1992, Havlíčková, I., Dostálová, Š., Katerová, Z.: English for Pharmacy and Medical Bioanalytics. Karolinum Press, 2014, James, V. D.: Medicine. London: Prentice Hall, 1989

Languages necessary to complete the course:
English language

Notes:

Past grade distribution
Total number of evaluated students: 19

ABS	NEABS
100,0	0,0

Lecturers: PaedDr. Viera Žufková, PhD.

Last change: 07.06.2022
Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/483-PhD/21	**Course title:** Management of Student Scientific Activities
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: 1., 2.., 3., 4.., 5., 6.., 7., 8..	
Educational level: III.	
Prerequisites:	
Course requirements: The course is successfully completed upon presentation of a certificate of management of student scientific activities. The confirmation will be issued by the supervisor.	
Learning outcomes: the doctoral student will gain experience and acquire the skills necessary for the presentation of scientific work on selected professional issues in the academic space at the 1st and 2nd level of university study in the field.	
Class syllabus: 1. The doctoral student prepares the assignment, during the whole supervision of the work the doctoral student is responsible for the administration of all requisites related to this type of activity. 2. The doctoral student methodically and professionally guides the student from the choice of topic to the successful presentation of results. 3. The doctoral student will prepare a certificate of conducting the student's scientific work, which can be confirmed by the head of the department. The abstract of the presentation must be attached to the confirmation and the confirmation signed by the head of the department serves as proof of successful completion of the conditions for the supervisor, who on the basis of it will award an rating (completed).	
Recommended literature: Current sources on the presented issues.	
Languages necessary to complete the course: Slovak language, English language	
Notes: Teacher: supervisor	

Past grade distribution Total number of evaluated students: 6	
ABS	NEABS
100,0	0,0
Lecturers:	
Last change: 18.04.2022	
Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.	

STATE EXAM DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/803-PhD/11	**Course title:** Molecular Biology
Number of credits: 0	
Educational level: III.	
Course requirements: Successful completion of the exam.	
Learning outcomes: After completing of the subject the PhD. student will be able to understand the knowledge about the flow of genetic information and its possible influencing by drugs, about cell signaling systems due to the mechanisms of drug effects, and about the molecular-biological basis of some diseases and their therapy (f.e. influenza, AIDS, Alzheimer's disease). Also she/he will learn methodological procedures in molecular-biological laboratory (f.e. isolation of nucleic acids from biological material, electrophoretic procedures, PCR).	
Class syllabus: The flow of genetic information – the influencing possibilities of drugs: replication, transcription, translation and posttranslational modifications. Mutations and DNA repair mechanisms. Intracellular compartments and protein transport. Molecular-biological basis of some diseases. Principles of cell communication (cell signalling system). Networking of protein kinases and integration of signal processing. Transport processes in the cell. Principles of the DNA recombinant technology. Principles of gene manipulations. DNA and RNA vaccines. Epigenetics. Introduction to pharmacogenetics and pharmacogenomics.	
State exam syllabus:	
Recommended literature: Obložinsky M. a kol.: Molekulárna biológia účinku liečiv a biotechnológia pre farmaceutov. 1.vyd. Bratislava: Univerzita Komenskeho, 2010. Papachristodoulou D., Snape A., Elliott W.H., Elliott D.C.: Biochemistry and Molecular Biology. 6.vyd., Oxford University Press, 2018.	
Languages necessary to complete the course: Slovak language, English language	
Notes: Teachers: doc. PharmDr. Marek Obložinský, PhD., RNDr. František Bilka, PhD., doc. Mgr. Andrea Bilková, PhD., Mgr. Ondrej Sprušanský, PhD., Ing. Ľudmila Pašková, PhD.	
Last change: 08.04.2022	
Approved by:	

COURSE DESCRIPTION

Academic year: 2023/2024

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/473-PhD/21	Obtaining the "Grant FaF UK for Young Scientists" (Principal Investigator)

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: 1., 2.., 3., 4.., 5., 6.., 7., 8..

Educational level: III.

Prerequisites:

Course requirements:
The doctoral student obtains the rating completed with a credit value after submitting the acquisition of the grant.

Learning outcomes:
the doctoral student under the guidance of the supervisor demonstrated the ability to create, implement and administer a scientific project for young people.

Class syllabus:
1. The doctoral student, after consultation with the supervisor, will develop and submit a research project registered by the Faculty of Pharmacy Comenius University Bratislava. In the submitted author's project, the doctoral student appears as a principal investigator.
2. The doctoral student is obliged to inform the head of the department about the submitted project.
3. The doctoral student respects and complies with the currently valid Directive on the approval, registration and archiving of grant projects at Faculty of Pharmacy Comenius University Bratislava.

Recommended literature:
Current sources on the presented issues.

Languages necessary to complete the course:
Slovak language

Notes:
Teacher: supervisor

Past grade distribution
Total number of evaluated students: 28

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 18.04.2022
Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/474-PhD/22	Obtaining the "Grant FaF UK for Young Scientists" (Co-investigator of Grant)

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: 1., 2.., 3., 4.., 5., 6.., 7., 8..

Educational level: III.

Prerequisites:

Course requirements:
The doctoral student obtains the rating completed with a credit value after submitting the acquisition of the grant.

Learning outcomes:
the doctoral student under the guidance of the supervisor demonstrated the ability to participate in the creation, implementation and administration of a scientific project for young people.

Class syllabus:
1. The doctoral student, after consultation with the supervisor, co-authored in the elaboration and submission of a scientific project registered at Faculty of Pharmacy Comenius University Bratislava. The doctoral student appears as a co-investigator in the submitted author's project.
2. The doctoral student is obliged to inform the head of the department about the submitted project.
3. The doctoral student respects and complies with the currently valid Directive on the approval, registration and archiving of grant projects at Faculty of Pharmacy Comenius University Bratislava.

Recommended literature:
Current sources on the presented issues.

Languages necessary to complete the course:
Slovak language

Notes:
Teacher: supervisor

Past grade distribution
Total number of evaluated students: 0

ABS	NEABS
0,0	0,0

Lecturers:

Last change: 18.04.2022
Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/472-PhD/21	Obtaining the "University Grant for Young Researchers" (Co-investigator of Grant)

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: 1., 2.., 3., 4.., 5., 6.., 7., 8..

Educational level: III.

Prerequisites:

Course requirements:
The doctoral student obtains the rating completed with a credit value after submitting the acquisition of the grant.

Learning outcomes:
the doctoral student under the guidance of the supervisor demonstrated the ability to participate in the creation, implementation and administration of a scientific project for young people.

Class syllabus:
1. The doctoral student, after consultation with the supervisor, co-authored in the elaboration and submission of a scientific project registered at Comenius University Bratislava. The doctoral student appears as a co-investigator in the submitted author's project.
2. The doctoral student is obliged to inform the head of the department about the submitted project.
3. The doctoral student respects and complies with the currently valid Directive on the approval, registration and archiving of grant projects at Comenius University Bratislava.

Recommended literature:
Current sources on the presented issues.

Languages necessary to complete the course:
Slovak language

Notes:
Teacher: supervisor

Past grade distribution
Total number of evaluated students: 0

ABS	NEABS
0,0	0,0

Lecturers:

Last change: 18.04.2022
Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/471-PhD/21	Obtaining the "University Grant for Young Researchers" (Principal Investigator)

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: 1., 2.., 3., 4.., 5., 6.., 7., 8..

Educational level: III.

Prerequisites:

Course requirements:
The doctoral student obtains the rating completed with a credit value after submitting the acquisition of the grant.

Learning outcomes:
the doctoral student under the guidance of the supervisor demonstrated the ability to create, implement and administer a scientific project for young people.

Class syllabus:
1. The doctoral student, after consultation with the supervisor, will develop and submit a research project registered by the Comenius University Bratislava. In the submitted author's project, the doctoral student appears as a principal investigator.
2. The doctoral student is obliged to inform the head of the department about the submitted project.
3. The doctoral student respects and complies with the currently valid Directive on the approval, registration and archiving of grant projects at Comenius University Bratislava.

Recommended literature:
Current sources on the presented issues.

Languages necessary to complete the course:
Slovak language

Notes:
Teacher: supervisor

Past grade distribution
Total number of evaluated students: 24

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 18.04.2022
Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/476-PhD/21	**Course title:** Other Activities (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: 1., 2.., 3., 4.., 5., 6.., 7., 8..	
Educational level: III.	
Prerequisites:	
Course requirements: The doctoral student obtains the rating completed with credit value after submitting an invitation to the conference (in which he is a member of the scientific conference organizing committee) and a separate published article on the successful implementation of the conference or a copy of the published summary of papers at the scientific event in the form of proceedings. source cover, circulation letters with ISBN or ISSN, source content, contribution), or the doctoral student obtains the rating completed with a credit value after submitting a confirmation from the head of the pharmacy about the completion of practice in a pharmacy. Completion of pharmacy practice is possible with the holder of a permit to provide pharmacy care, which is a legal entity, and which is also a university providing higher education in the field of pharmacy. The student can complete the subject even if he participates in an internship at a workplace that operates in the field of pharmacy or medicine. A student can be awarded a grade for having passed while representing the faculty at various events organized by the faculty or the university.	
Learning outcomes: The doctoral student under the guidance of the supervisor will demonstrate the ability to prepare, organize and conduct a scientific conference, or the doctoral student under the guidance of a pharmacist or doctor demonstrates the ability to work professionally and scientifically in a pharmacy or in a workplace that operates in the field of pharmacy or medicine or the doctoral student demonstrates the ability to professionally and scientifically present studies and scientific activities carried out at the Faculty of Pharmacy of the Comenius University Bratislava.	
Class syllabus: The doctoral student shall actively participate in the preparation, organization and implementation of the conference in the position of chairman or member of the organizing committee of the scientific conference. 2. After the successful implementation of the conference, the doctoral student will prepare an article with photo documentation, which presents and promotes a scientific event in a journalistic, scientific periodical or proceedings. If a doctoral student completes an internship in a pharmacy, he actively participates in its operation and actively solves scientific questions related to the prescription and dispensing of medicines. If a doctoral student participates in an internship	

at a workplace that operates in the field of pharmacy or medicine, he actively solves professional and scientific topics that the workplace deals with. A doctoral student representing the faculty at events organized by the faculty or the university informs about the studies and scientific research activities carried out at the faculty. The student acquires skills in presenting professional topics.

Recommended literature:
Current sources on the presented issues.

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

Notes:
Teacher: supervisor

Past grade distribution
Total number of evaluated students: 20

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 19.03.2024

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/475-PhD/22	Participation in the Implementation 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: 3

Recommended semester: 1., 2.., 3., 4.., 5., 6.., 7., 8..

Educational level: III.

Prerequisites:

Course requirements:
The doctoral student obtains the rating completed with a credit value after submitting the participation in the grant.

Learning outcomes:
the doctoral student under the guidance of the supervisor has demonstrated the ability to create, implement and administer a scientific project.

Class syllabus:
1. The doctoral student, after consultation with the supervisor, collaborates as an author on the elaboration and submission of a scientific project registered by the Ministry of Education, Science, Research and Sport of the Slovak Republic. The doctoral student appears as a co-investigator in the submitted author's project.
2. The doctoral student has the obligation to inform the head of the department about the solution of partial tasks on the project.
3. The doctoral student respects and complies with the currently valid Directive on the approval, registration and archiving of grant projects at Comenius University Bratislava.

Recommended literature:
Current sources on the presented issues.

Languages necessary to complete the course:
Slovak language

Notes:
Teacher: supervisor

Past grade distribution
Total number of evaluated students: 61

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 18.04.2022
Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/482-PhD/21	**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: 5	
Recommended semester: 1., 2.., 3., 4.., 5., 6.., 7., 8..	
Educational level: III.	
Prerequisites:	
Course requirements: The course is successfully completed if the trained student 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 undergraduate 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 consequently 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, English language	
Notes: Teacher: supervisor	

Past grade distribution
Total number of evaluated students: 99

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 13.04.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

STATE EXAM DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/431-PhD/21	**Course title:** Passing the Dissertation Exam
Number of credits: 20	
Educational level: III.	
Recommended prerequisites: Defined in the individual study plan of the doctoral student and in the Study Regulations of FPHARM CU.	
Course requirements: The doctoral student will obtain the rating completed with credit value after successfully passing the dissertation exam with the result passed	
Learning outcomes: At the dissertation exam, the student must demonstrate not only knowledge of the specified subjects of the exam, but also the ability under the supervision of the supervisor to submit a dissertation project proposal, method of solving experimental procedures, ability to form conclusions based on results and defend their project proposal before a committee of the doctoral study.	
Class syllabus: 1) The dissertation examination consists of a part consisting of a discussion of the written work for the dissertation examination - project proposal. 2) The dissertation examination consists of a part in which the doctoral student has to demonstrate theoretical knowledge in the specified subjects of the dissertation examination. 3) The subjects of the dissertation examination consist of the main subject and secondary subjects according to the characteristics of the study program of the doctoral degree in the field of study.	
State exam syllabus:	
Recommended literature: Current sources on the studied issues	
Languages necessary to complete the course: Slovak language, in case of the consent of the dean and the consent of the chairman of the commettee of the doctoral study on the proposal of the doctoral student also in another world language, preferably English.	
Last change: 18.04.2022	
Approved by:	

STATE EXAM DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/804-PhD/11	**Course title:** Pathological Physiology
Number of credits: 0	
Educational level: III.	
Course requirements: Successfully passing the exam.	
Learning outcomes: The participant of the course expands and completes the spectrum of syndromes and diseases from the individual organ systems, obtained within the study of the subject of pathology. Student learns in more detail recent and experimentally identified pathomechanisms leading to the damage of physiological functions of the cell, organs, and systems. Student will extend current knowledge about the disorders of metabolism, internal environment, adaptational mechanisms to the environmental changes and infectious diseases caused by bacteria, viruses, parasites, and fungi. Acquired advanced knowledge will be used in conjunction with other biomedically oriented subjects of pharmacological program.	
Class syllabus: Metabolic disorders, obesity, metabolic syndrome, dyslipidemia, disorders of vitamins and elements. Disorders of the internal environment, water and electrolyte management, acid-base homeostasis. Interaction of the organism with the environment. Adaptation, stress, cell death. Circulatory disorders in the cerebral circulation, pulmonary circulation, renal hypertension, ischemia in the mesenteric stream. Changes in cardiac function. Cardiomyopathy. Congenital heart diseases. Diseases of the valves. Skin diseases caused by infection, inflammation, allergies, skin efflorescences. Children's infectious diseases. Kidney and urinary tract diseases. Nephrotic syndrome, pyelonephritis, stones, incontinence. Pulmonary parenchymal diseases. Tuberculosis, pulmonary interstitial diseases, pneumoconiosis, fibrosis. Selected intestinal diseases. Malabsorption - celiac disease, inflammatory bowel diseases - Crohn's disease, ulcerative colitis, appendicitis. Changes in the function of the gallbladder and bile ducts. Infectious diseases - epidemiology, transmission, pathomechanisms, microbial flora, resistance, bacteria, parasites. Selected viral and fungal diseases. Pathophysiology of the musculoskeletal system. Diseases of joints and muscles.	
State exam syllabus:	
Recommended literature: Mellová Y. a kol.: Anatómia človeka pre nelekárske študijné programy. Vydavateľstvo: Osveta, 2010, 2018. 184 s. Merkunová A, Orel M., Anatomie a fyziologie člověka. Vydavateľstvo: Grada, Psyché. 2008, 304 s. Čalkovská A.: Fyziológia človeka pre nelekárske študijné odbory. Vydavateľstvo: Osveta, 2010	

Javorka, K. a kol.: Lekárska fyziológia. Učebnica pre lekárske fakulty. Martin: Osveta, 2014. 744 s.
Silbernagl, S., Despopoulos, A.: Atlas fyziologie člověka. 6. vyd. Praha: Grada Publishing, 2004, 448 s.
Silbernagl, S., Lang, F.: Atlas patofyziologie. Praha: Grada, 2016. 404 s.
Mohan, H.: Patológia.· Vydavateľstvo: Balneotherma, 2011.
Plank, L., Hanáček J. a kol.: Patologická anatómia a patologická fyziológia. ·Vydavateľstvo: Osveta, 2007.
Mačák J., Mačáková J., Dvořáčková J.. Patologie. 2.vydanie, Vydavateľstvo: Grada, 2012
Hulín, I. a kol.: Patofyziológia a klinická fyziológia pre magisterské a bakalárske štúdium. Bratislava: SAP, 2005. 593 s.

Languages necessary to complete the course:
Slovak language

Notes:
Teachers: prof. PharmDr. Ján Klimas, PhD., MPH, PharmDr. Tomáš Rajtík, PhD., PharmDr. Eva Kráľová, PhD., PharmDr. Stanislava Kosírová, PhD.

Last change: 08.04.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/485-PhD/21	**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: 7	
Recommended semester: 1., 2.., 3., 4.., 5., 6.., 7., 8..	
Educational level: III.	
Prerequisites:	
Course requirements: After submitting a certificate of completion of pedagogical activities, the doctoral student obtains the rating completed according to the specific credit evaluation of the subject.	
Learning outcomes: the doctoral student will gain experience and acquire the skills necessary for the presentation of selected professional issues in the academic space at the 1st or 2nd level of university studies within the field.	
Class syllabus: 1. The doctoral student prepares seminars, provides teaching and assessment at the end of the semester. 2. The doctoral student is responsible for the administration of pedagogical outputs in the AIS system. 3. In his / her pedagogical activities, the doctoral student respects and adheres to the valid guidelines applicable to all teachers of FPHARM CU Bratislava in the current academic year. 4. The full-time doctoral student implements pedagogical activities in full-time study to the extent specified by the implementing regulations of FPHARM CU Bratislava for doctoral studies, but if the course is also implemented in external form, the full-time doctoral student will ensure its implementation free of charge. 5. A doctoral student of an external form of study may carry out pedagogical activities without the right to a fee, while the form and scope of this activity shall be agreed with the management of FPHARM CU Bratislava. 6. The doctoral student will prepare a confirmation of the implementation of pedagogical activities. The confirmation signed by the head of the department where the pedagogical activity took place serves as proof of successful fulfillment of the conditions for completing the course for the supervisor, who on the basis of it will award (graduate) the doctoral student to AIS and to the study report.	
Recommended literature: Current resources on the topic of pedagogical activities.	

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

Notes:
Teacher: supervisor

Past grade distribution
Total number of evaluated students: 40

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 18.04.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/484-PhD/21	**Course title:** Pedagogical Activities - 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: 5	
Recommended semester: 1., 2.., 3., 4.., 5., 6.., 7., 8..	
Educational level: III.	
Prerequisites:	
Course requirements: After submitting a certificate of completion of pedagogical activities, the doctoral student obtains the rating completed according to the specific credit evaluation of the subject.	
Learning outcomes: the doctoral student will gain experience and acquire the skills necessary for the presentation of selected professional issues in the academic space at the 1st or 2nd level of university studies within the field.	
Class syllabus: 1. The doctoral student prepares exercises, provides teaching and evaluation at the end of the semester. 2. The doctoral student is responsible for the administration of pedagogical outputs in the AIS system. 3. In his / her pedagogical activities, the doctoral student respects and adheres to the valid guidelines applicable to all teachers of FPHARM CU Bratislava in the current academic year. 4. The full-time doctoral student implements pedagogical activities in full-time study to the extent specified by the implementing regulations of FPHARM CU Bratislava for doctoral studies, but if the course is also implemented in external form, the full-time doctoral student will ensure its implementation free of charge. 5. A doctoral student of an external form of study may carry out pedagogical activities without the right to a fee, while the form and scope of this activity shall be agreed with the management of FPHARM CU Bratislava. 6. The doctoral student will prepare a confirmation of the implementation of pedagogical activities. The confirmation signed by the head of the department where the pedagogical activity took place serves as proof of successful fulfillment of the conditions for completing the course for the supervisor, who on the basis of it will award (graduate) the doctoral student to AIS and to the study report.	
Recommended literature: Current resources on the topic of pedagogical activities.	

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

Notes:
Teacher: supervisor

Past grade distribution
Total number of evaluated students: 124

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 18.04.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

STATE EXAM DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/812-PhD/21	**Course title:** Pharmaceutical Technology
Number of credits: 0	
Educational level: III.	
Course requirements: Successful passing of the exam	
Learning outcomes: By passing the course, the PhD. student will have a complex theoretical knowledge of drugs as dispersion and application systems in terms of theoretical and practical preparation of innovative dosage forms.	
Class syllabus: Pharmaceutical preparations are of a dosage (application) form which depends on the means of administration and coexistence of relevant drugs and excipients. Pharmaceutical technology (galenics) deals with composition, formulation, production, evaluation, and quality assurance of individually prepared and manufactured pharmaceutical preparations. It studies conditions for formulation of drugs and excipients into pharm. preparations, rules governing these processes, relations of the preparation with the effect of contained drugs. The subject of the study are these areas: - Pharm. preparations as systems composed of drugs and excipients (constitutive, stabilizing, corrective, etc.), conditions for coexistence of components in pharm. preparation. - Procedures and devices for preparation and manufacturing of pharm. preparations - Evaluation and quality assurance of pharm. preparations in terms of composition, technology, structure - Relations between the pharm. preparation and bioavailability of administered drugs - Stability of pharm. preparations and its possible ensuring - Containers ‘materials, technique for pharm. preparations ‘containers, study of interactions between containers and drugs / excipients Current research is oriented to drug carriers (polymeric, lipid - liposomes) in the role of drug delivery systems as nanoparticles. It begins with the synthesis of the carrier, incorporation of the drug, continues with formulation of dosage form, stability studies of formulated particles and in vitro drug release study. At the end of this difficult process the biologic activity and in vivo bioavailability are evaluated in cooperation with other departments/institutions. Also, nanodispersion systems as e.g., micro- and nanoemulsions are studied, especially related to low soluble drugs (e.g., terbinafine, minoxidil, indomethacin, tretinoin) intended for topical application with local or systemic effect e.g., also using the mechanisms of transdermal passage. In the preparation of these systems, various types of polymers (e.g., chitosan, thermosensitive polymers) and specific excipients are used to create a specific structure of given formulation with improved properties (e.g., better bioadhesion, stability, capacity to release the low soluble drugs, improved permeation, and penetration to target tissues in required concentration).	
State exam syllabus:	
Recommended literature: Chalabala, M. a kol.: Technologie léků. 3. vyd. Praha: Galén, 2006. 399 s. Žabka, M. a kol: Moderné lieky vo farmaceutickej technológii. Bratislava: SAP, 1999. s.487 European	

Pharmacopoeia 10 th Ed. Strasbourg: EDQM, 2022 Aulton, M. E.: Aulton´s Pharmaceutics: the design and manufacture of medicines - Edinburgh: Churchill Livingstone, 2018 Mikušová, V.; Mikuš, P.: Advances in Chitosan-Based Nanoparticles for Drug Delivery. Int. J. Mol. Sci. 2021, 22, 9652. https://doi.org/10.3390/ijms22179652

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

Notes:
Lecturers: PharmDr. Veronika Mikušová, PhD., PharmDr. Juraj Piešťanský, PhD., doc. RNDr. Miroslava Šupolíková, PhD.

Last change: 11.04.2022

Approved by:

STATE EXAM DESCRIPTION

Academic year: 2023/2024	
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: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/802-PhD/11	**Course title:** Physiology
Number of credits: 0	
Educational level: III.	
Course requirements: Successful completion of the exam.	
Learning outcomes: The participant of the course, a doctoral student, expands and completes the knowledge about the functions and relationships between tissues, organs, and organ systems of the human body, acquired in the subject of physiology. He learns in more detail the newly or experimentally identified mechanisms of physiological functions of the cell, organs, and their systems. Participants acquire advanced knowledge about metabolism, internal environment, adaptation mechanisms and communication between various components of the body and their coordination and subsequent function. Participant will use such advanced knowledge in other biomedically oriented subjects of pharmaceutical studies.	
Class syllabus: Advanced insights to general Anatomy and Physiology of human body systems. Structural characteristics of the organs and tissue. Epithelial, connective tissues. Bones, skeleton. Muscular system. Types of muscle tissue. Excitation-Contraction Coupling (ECC). Mechanism of contraction. Nervous system - organization, structure, function. Physiology of Nerve. Central nervous system. Peripheral nervous system - somatic, autonomic. Somatic, visceral reflex arc. Special Senses. Physiology of vision, hearing, equilibrium, and orientation. Endocrine System. Organization and feedback system. Hormones. Glands and their hormones. Organization of cardiovascular system. Structure, function, and factors affecting heart, vessels, circulation. ECG. Autonomic regulation of vascular lumen diameter. Blood pressure. Blood composition, plasma, elements, and their role in the body. Blood clotting. Lymphatic system. Respiratory System. Respiratory Tract, Mechanics of Breathing, Gas Transport, Neurochemical Control of Breathing. Digestive System. Anatomy and Function of the Organs. Basic functional units. Enterohepatic circulation. Secretory function of stomach, liver, pancreas, intestine. Physiology of digestion. Nutrition. Regulation of Body Temperature. Urinary System. Anatomy and Functions of the Kidneys, Accessory Excretory Structures, Urine. Countercurrent multiplier. Mechanism of micturition. Acid-Base Balance. Body Fluids. Anatomy and Physiology of Reproductive System. Male and Female Reproductive Organs, hormones, menstrual cycle.	
State exam syllabus:	
Recommended literature: Trojan, S. a kol.: Lékařská fyziologie. 4. vyd. Praha: Grada Publishing, 2004. 772 s. Kittnar, O. a kol: Lékařská fyziologie. 1. vyd. Praha: Grada Publishing, 2011. 790 s. Silbernagl, S., Despopoulos, A.: Atlas fyziologie člověka. 6. vyd. Praha: Grada Publishing, 2004. 448 s. Javorka, K. a kol.: Lekárska fyziológia. Učebnica pre lekárske fakulty. Martin: Osveta,	

2009, 2014. 744 s. Merkunová A, Orel M., Anatomie a fyziologie člověka. Vydavateľstvo: Grada, Psyché. 2008, 304s.
Mellová Y. a kol. : Anatómia človeka pre nelekárske študijné programy. Vydavateľstvo: Osveta, 2010, 2018. 184 s.
Čalkovská A.: Fyziológia človeka pre nelekárske študijné odbory. Vydavateľstvo: Osveta, 2010.
Stankovicova T. a kol. 2019, Anatómia a fyziológia: teoretické a praktické návody na cvičenia pre farmaceutov. UK Bratislava, 2. vydanie, 300 strán. http://www.fpharm.uniba.sk/fileadmin/faf/Pracoviska-ubory/KFT/Anat_fyz/fyziologia_skripta_web.pdf

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

Notes:
Teacher: prof. PharmDr. Adriana Duriš Adameová, PhD., doc. PharmDr. Peter Křenek, PhD., prof. PharmDr. Ján Klimas, PhD., MPH., doc. PharmDr. Anna Paul Hrabovská, PhD., PharmDr. Tomáš Rajtík, PhD., PharmDr. Eva Kráľová, PhD.

Last change: 08.04.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/479-PhD/21	**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: 1., 2.., 3., 4.., 5., 6.., 7., 8..	
Educational level: III.	
Prerequisites:	
Course requirements: The doctoral student obtains the rating with a credit value after submitting the program of scientific events (in which he appears as an active participant) to the supervisor, which is also evidenced by confirmations of the organizers of scientific events about active performance	
Learning outcomes: the doctoral student under the guidance of the supervisor has demonstrated the ability to work scientifically, ie to create scientific texts that meet the criteria of expertise, scientific and methodological relevance and then present these texts to the audience at a scientific event (presentation at the event is limited by age).	
Class syllabus: 1. The doctoral student, after consultation with the supervisor, shall develop scientific texts that meet the criteria of professionalism, scientific and methodological relevance. expertise, scientific and methodological relevance. 2. The doctoral student will individually ensure participation in a scientific event for young researchers (conference, scientific seminar, congress), at which he / she will actively present the results of his / her own scientific activity. 3. The doctoral student respects the ethics of publishing, each scientific text is original and the doctoral student presents it only once, while the translation of the content of the original scientific text is not considered as another original scientific text and it is inadmissible for the doctoral student to present it repeatedly.	
Recommended literature: Current sources on the presented issues.	
Languages necessary to complete the course: Slovak language, English language	
Notes: Teacher: supervisor	

Past grade distribution Total number of evaluated students: 13	
ABS	NEABS
100,0	0,0
Lecturers:	
Last change: 18.04.2022	
Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.	

COURSE DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/465-PhD/21	**Course title:** Professional Publication in International or 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: 1., 2.., 3., 4.., 5., 6.., 7., 8..	
Educational level: III.	
Prerequisites:	
Course requirements: The doctoral student obtains the rating completed with a credit value after submitting separate (source cover, circulation letters with ISBN or ISSN, source content, paper) published texts to the supervisor.	
Learning outcomes: the doctoral student, under the guidance of the supervisor, demonstrates the ability to work scientifically, i. e. to create a scientific text that meets the criteria of professionalism, scientific and methodological relevance.	
Class syllabus: 1. The doctoral student, after consultation with the supervisor, shall develop scientific texts that meet the criteria of professionalism, scientific and methodological relevance. 2. The doctoral student will individually ensure the publication of the given texts in a international or domestic professional peer-reviewed periodical. 3. The doctoral student respects the ethics of publishing, each scientific text is original and the doctoral student publishes it only once, while the translation of the content of the original text is not considered as another original scientific text.	
Recommended literature: Current sources on published issues.	
Languages necessary to complete the course: Slovak language, English language	
Notes: Teacher: supervisor	
Past grade distribution Total number of evaluated students: 8	

ABS	NEABS
100,0	0,0

Lecturers:
Last change: 18.04.2022
Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/466-PhD/21	**Course title:** Published Abstract in English from a Scientific Event
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: 1., 2.., 3., 4.., 5., 6.., 7., 8..	
Educational level: III.	
Prerequisites:	
Course requirements: The doctoral student obtains the rating completed with a credit value after submitting an abstract in English from a scientific event	
Learning outcomes: the doctoral student under the supervision of a supervisor has demonstrated the ability to work scientifically, ie to create scientific texts in English that meet the criteria of expertise, scientific and methodological relevance and then publish these texts as an abstract in a book of abstracts from a scientific event (conference, scientific seminar, congress).	
Class syllabus: 1. The doctoral student, in consultation with the supervisor, shall prepare scientific texts in English that meet the criteria of professionalism, scientific and methodological relevance. 2. The doctoral student will individually ensure the sending of the scientific text to the organizers of the scientific event (conference, scientific seminar, congress), at which he / she will actively present the results of his / her own scientific activity. 3. The doctoral student respects the ethics of publishing, each scientific text is original and the doctoral student presents it only once, while the translation of the content of the original scientific text is not considered another original scientific text and it is inadmissible for the doctoral student to present it repeatedly to be.	
Recommended literature: Current sources on the presented issues.	
Languages necessary to complete the course: English	
Notes: Teacher: provided by the supervisor Recommended Study Semester: full length of study	

Past grade distribution
Total number of evaluated students: 36

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 18.04.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/487-PhD/21	Reviewing a Bachelor Thesis

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: 1., 2.., 3., 4.., 5., 6.., 7., 8..

Educational level: III.

Prerequisites:

Course requirements:
The course is successfully completed if the doctoral student submits relevant evidence of the peer review of the bachelor thesis, and the confirmation of entering the review into the AIS-2.

Learning outcomes:
The doctoral student, under the guidance of a supervisor, has demonstrated the ability to review a professional text.

Class syllabus:
1. The doctoral student will critically evaluate the professionalism of the text of the bachelor thesis.
2. The doctoral student, after consultation with the supervisor, will prepare a report for the bachelor's thesis.
3. The doctoral student enters the bachelor's thesis report into AIS-2.

Recommended literature:
Current sources on the presented issues.

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

Notes:
Lecturer: supervisor

Past grade distribution
Total number of evaluated students: 7

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 13.04.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/467-PhD/21	Reviewing the Manuscript of an Article Submitted to an Indexed Scientific Journal (Scopus, Wos)

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: 1., 2.., 3., 4.., 5., 6.., 7., 8..

Educational level: III.

Prerequisites:

Course requirements:
The course is successfully completed if the doctoral student submits relevant evidence of elaboration of the review on the manuscript of the article (e-mail or other confirmation from the editors).

Learning outcomes:
The doctoral student, under the guidance of a supervisor, has demonstrated the ability to review a professional text.

Class syllabus:
1. The doctoral student will critically evaluate the professionalism of the manuscript.
2. The doctoral student, after consultation with the supervisor, will prepare a review of manuscript.
3. The doctoral student will submit the review to the redaction of the journal.

Recommended literature:
Current sources on the presented issues.

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

Notes:
Lecturer: supervisor

Past grade distribution
Total number of evaluated students: 1

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 10.04.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/486-PhD/21	Supervision of the Final Bachelor's Thesis

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: 1., 2.., 3., 4.., 5., 6.., 7., 8..

Educational level: III.

Prerequisites:

Course requirements:
The course is successfully completed if a bachelor's program participant is in AIS-2 is provided with the subject: Preparation of bachelor thesis 1 or Preparation of bachelor thesis 2.

Learning outcomes:
The doctoral student will gain experience and acquire the skills necessary for leading the final work of a selected professional topic in the academic space at the 1st level of university study within the field of study.

Class syllabus:
1. The doctoral student will prepare in the AIS system, in the section Study records (VSES 057), the assignment of the final (bachelor's) thesis by entering the thesis title and annotation. During the entire supervision of the final (bachelor's) thesis, the doctoral student is responsible for the administration of all requisites related to the final (bachelor's) thesis in AIS.
2. The doctoral student methodically and professionally guides the bachelor's program student from the choice of topic to the successful defense of the final (bachelor's) thesis.
3. The doctoral student will prepare an evaluation of the final (bachelor's) thesis in the AIS, as well as in the form according to the instructions of the head of the corresponding department.
4. The doctoral student will prepare a certificate of completion of the final (bachelor's) thesis, which will be given to 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, based on the evaluation, provides the doctoral student with the grade "absolved" by entering it into AIS-2 and in the study record.

Recommended literature:
Current sources on the studied issues.

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

Notes:

Teacher: supervisor

Past grade distribution
Total number of evaluated students: 0

ABS	NEABS
0,0	0,0

Lecturers:

Last change: 13.04.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

STATE EXAM DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/813-PhD/21	**Course title:** Technology of Biological Drugs
Number of credits: 0	
Educational level: III.	
Course requirements: Passing of the exam.	
Learning outcomes: Passing the course, the PhD. student will expand his/her knowledge about the possibilities of drug preparation using current biotechnological procedures, based on the manipulation of nucleic acids and using recombinant DNA. Emphasis is placed on the up-stream and down-stream phase of the production process. The student will get acquainted with different types of cloning and expression vectors and their application in the production of specific biopharmaceuticals (e.g. r-hormones, r-cytokines, r-vaccines, r-enzymes and r-monoclonal antibodies). The course will also provide information on the actual therapeutic trends, such as gene therapy, therapeutic cloning and the use of stem cells in the treatment of specific diseases.	
Class syllabus: - Biological drugs - definition, characterization, classification. - Methods of recombinant DNA in biotechnology. - Application of recombinant DNA in the biopharmaceuticals production. Cloning and expression vectors. - Design and production of biological drugs I. Up-stream processes. - Design and production of biological drugs II. Down-stream processes. - Molecular-technological aspects in the field of biological drugs. Methods of quality control and analysis. Methods increasing the efficiency and stability of biologicals. Biosimilars. - Plant biotechnology in pharmacy. - Protein based biologicals I - recombinant enzymes, hormones, growth factors, cytokines and interferons. - Protein based biologicals II - recombinant vaccines. - Protein based biologicals III - monoclonal antibodies. - Biomedical engineering. Principles and mechanisms of gene therapy. Nucleic acid-based biological drugs. - Cloning - reproductive and therapeutic.. - Dispensing biopharmaceutical products. Economic consideration and legislative.	
State exam syllabus:	
Recommended literature: Obložinský M. a kol.: Molekulárna biológia účinku liečiv a biotechnológia pre farmaceutov. 1. vyd. Bratislava: Univerzita Komenského, 2010. Clark D.P. a Pazdernik N.J.: Biotechnology. Oxford: Academic Cell 2016. Daan J. A. Crommelin, Robert D. Sindelar, Bernd Meibohm: Pharmaceutical Biotechnology, Cahm: Springer 2019.	

Clark D.P. a Pazdernik N.J.: Biotechnology. Oxford: Academic Cell 2016.
Daan J. A. Crommelin, Robert D. Sindelar, Bernd Meibohm: Pharmaceutical Biotechnology, Cahm: Springer 2019.

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

Notes:
Teacher: doc. Mgr. Andrea Bilková, PhD.; doc. PharmDr. Marek Obložinský, PhD.; RNDr. František Bilka, PhD.; Ing. Ľudmila Pašková, PhD.

Last change: 11.04.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2023/2024

University: Comenius University Bratislava

Faculty: Faculty of Pharmacy

Course ID:	**Course title:**
FaF/460-PhD/21	The Original Publication in Current Contents 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: 35

Recommended semester: 1., 2.., 3., 4.., 5., 6.., 7., 8..

Educational level: III.

Prerequisites:

Course requirements:
The doctoral student obtaines the rating completed with a credit value after submitting separate (source cover, circulation letters with ISBN or ISSN, source content, paper) published texts to the supervisor.

Learning outcomes:
a doctoral student under the guidance of a supervisor demonstrates the ability to work scientifically, i. e. a scientific text that meets the criteria of professionalism, scientific and methodological relevance.

Class syllabus:
1. The doctoral student, after consultation with the supervisor, shall develop scientific texts that meet the criteria of professionalism, scientific and methodological relevance.
2. The doctoral student will individually ensure the publication of the given texts in a scientifically peer-reviewed periodical registered in the Current Contents database.
3. The doctoral student respects the ethics of publishing, each scientific text is original and the doctoral student publishes it only once, while the translation of the content of the original text is not considered as another original scientific text.

Recommended literature:
Current sources on published issues.

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

Notes:
Lecturer: supervisor

Past grade distribution
Total number of evaluated students: 27

ABS	NEABS
100,0	0,0

Lecturers:
Last change: 18.04.2022
Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/459-PhD/21	**Course title:** The Original Publication in Current Contents Journal – First Author
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: 40	
Recommended semester: 1., 2.., 3., 4.., 5., 6.., 7., 8..	
Educational level: III.	
Prerequisites:	
Course requirements: The doctoral student obtaines the rating completed with a credit value after submitting separate (source cover, circulation letters with ISBN or ISSN, source content, paper) published texts to the supervisor.	
Learning outcomes: a doctoral student under the guidance of a supervisor demonstrates the ability to work scientifically, i. e. a scientific text that meets the criteria of professionalism, scientific and methodological relevance.	
Class syllabus: 1. The doctoral student, after consultation with the supervisor, shall develop scientific texts that meet the criteria of professionalism, scientific and methodological relevance. 2. The doctoral student will individually ensure the publication of the given texts in a scientifically peer-reviewed periodical registered in the Current Contents database. 3. The doctoral student respects the ethics of publishing, each scientific text is original and the doctoral student publishes it only once, while the translation of the content of the original text is not considered as another original scientific text. 4. The doctoral student is the first author of the publication.	
Recommended literature: Current sources on published issues.	
Languages necessary to complete the course: Slovak language, English language	
Notes: Lecturer: supervisor	

Past grade distribution
Total number of evaluated students: 22

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 18.04.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/463-PhD/21	**Course title:** The Original Publication in non-Current Contents International or Domestic Journal Indexed in the SCOPUS Database (EPJ is Recommended)
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: 1., 2.., 3., 4.., 5., 6.., 7., 8..	
Educational level: III.	
Prerequisites:	
Course requirements: The doctoral student obtaines the rating completed with a credit value after submitting separate (source cover, circulation letters with ISBN or ISSN, source content, paper) published texts to the supervisor.	
Learning outcomes: a doctoral student under the guidance of a supervisor demonstrates the ability to work scientifically, i. e. a scientific text that meets the criteria of professionalism, scientific and methodological relevance.	
Class syllabus: 1. The doctoral student, after consultation with the supervisor, shall develop scientific texts that meet the criteria of professionalism, scientific and methodological relevance. 2. The doctoral student will individually ensure the publication of the given texts in non current contents international or domestic journal indexed in the SCOPUS database (European Pharmaceutical Journal is recommended) 3. The doctoral student respects the ethics of publishing, each scientific text is original and the doctoral student publishes it only once, while the translation of the content of the original text is not considered as another original scientific text.	
Recommended literature: Current sources on published issues.	
Languages necessary to complete the course: Slovak language, English language	
Notes: Teacher: supervisor	

Past grade distribution Total number of evaluated students: 5	
ABS	NEABS
100,0	0,0
Lecturers:	
Last change: 18.04.2022	
Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.	

COURSE DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/462-PhD/21	**Course title:** The Original Publication in non-Current Contents Journal with IF (Impact Factor)
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: 25	
Recommended semester: 1., 2.., 3., 4.., 5., 6.., 7., 8..	
Educational level: III.	
Prerequisites:	
Course requirements: The doctoral student obtaines the rating completed with a credit value after submitting separate (source cover, circulation letters with ISBN or ISSN, source content, paper) published texts to the supervisor.	
Learning outcomes: a doctoral student under the guidance of a supervisor demonstrates the ability to work scientifically, i. e. a scientific text that meets the criteria of professionalism, scientific and methodological relevance.	
Class syllabus: 1. The doctoral student, after consultation with the supervisor, shall develop scientific texts that meet the criteria of professionalism, scientific and methodological relevance. 2. The doctoral student will individually ensure the publication of the given texts in a scientifically peer-reviewed periodical with IF (impact factor). 3. The doctoral student respects the ethics of publishing, each scientific text is original and the doctoral student publishes it only once, while the translation of the content of the original text is not considered as another original scientific text.	
Recommended literature: Current sources on published issues.	
Languages necessary to complete the course: Slovak language, English language	
Notes: Lecturer: supervisor	

Past grade distribution Total number of evaluated students: 2	
ABS	NEABS
100,0	0,0
Lecturers:	
Last change: 18.04.2022	
Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.	

COURSE DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/461-PhD/21	**Course title:** The Original Publication in non-Current Contents Journal with IF (Impact Factor) - First Author
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: 1., 2.., 3., 4.., 5., 6.., 7., 8..	
Educational level: III.	
Prerequisites:	
Course requirements: The doctoral student obtaines the rating completed with a credit value after submitting separate (source cover, circulation letters with ISBN or ISSN, source content, paper) published texts to the supervisor.	
Learning outcomes: a doctoral student under the guidance of a supervisor demonstrates the ability to work scientifically, i. e. a scientific text that meets the criteria of professionalism, scientific and methodological relevance.	
Class syllabus: 1. The doctoral student, after consultation with the supervisor, shall develop scientific texts that meet the criteria of professionalism, scientific and methodological relevance. 2. The doctoral student will individually ensure the publication of the given texts in a scientifically peer-reviewed periodical with IF (impact factor). 3. The doctoral student respects the ethics of publishing, each scientific text is original and the doctoral student publishes it only once, while the translation of the content of the original text is not considered as another original scientific text. 4. The doctoral student is the first author of the publication.	
Recommended literature: Current sources on published issues.	
Languages necessary to complete the course: Slovak language, English language	
Notes: Lecturer: supervisor	

Past grade distribution
Total number of evaluated students: 4

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 18.04.2022

Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.

COURSE DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/464-PhD/21	**Course title:** The Original Scientific Publication in non-Current Contents and non-Indexed International or Domestic Journal or Conference Proceeding
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: 1., 2.., 3., 4.., 5., 6.., 7., 8..	
Educational level: III.	
Prerequisites:	
Course requirements: The doctoral student obtaines rating completed with a credit value after submitting separate (source cover, circulation letters with ISBN or ISSN, source content, paper) published texts to the supervisor.	
Learning outcomes: a doctoral student under the guidance of a supervisor demonstrates the ability to work scientifically, i. e. a scientific text that meets the criteria of professionalism, scientific and methodological relevance.	
Class syllabus: 1. The doctoral student, after consultation with the supervisor, shall develop scientific texts that meet the criteria of professionalism, scientific and methodological relevance. 2. The doctoral student will individually ensure the publication of the given texts in non current contents and non-indexed international or domestic journal or conference proceeding. 3. The doctoral student respects the ethics of publishing, each scientific text is original and the doctoral student publishes it only once, while the translation of the content of the original text is not considered as another original scientific text.	
Recommended literature: Current sources on published issues.	
Languages necessary to complete the course: Slovak language, English language	
Notes: Teacher: supervisor	

Past grade distribution Total number of evaluated students: 11	
ABS	NEABS
100,0	0,0
Lecturers:	
Last change: 18.04.2022	
Approved by: prof. PharmDr. Adriana Duriš Adameová, PhD., prof. PharmDr. Ján Klimas, PhD., MPH, prof. RNDr. Peter Mikuš, PhD., prof. PharmDr. Pavel Mučaji, PhD.	

STATE EXAM DESCRIPTION

Academic year: 2023/2024	
University: Comenius University Bratislava	
Faculty: Faculty of Pharmacy	
Course ID: FaF/805-PhD/11	**Course title:** Toxicology
Number of credits: 0	
Educational level: III.	
Course requirements: Successfully passing the exam.	
Learning outcomes: The class will enable the doctoral student to deepen and expand their knowledge about the toxic effects of xenobiotics on living organisms. The current boundaries of toxicology are considerably wide due to the number of chemical compounds in the environment, and toxic damage to the organism also occurs through long-term exposure to pollutants. It turns out that in today's developed societies there is a growing need for toxicologists; unfortunately, they are not specifically trained for this demand by any university. A well-educated pharmacist, who is constantly expanding their knowledge in the field of chemical-analytical and biological-pharmaceutical fields, could provide this need. In addition to toxicity, which is qualitatively influenced by dose, the second interesting property of chemical substances (drugs) is their storage in the body (accumulation).	
Class syllabus: Importance of toxicology for the field pharmacy. Factors influencing toxic effects. Basics of toxokinetics. Characteristics, course and complications of poisoning. Drug toxicology. Poisoning in children. Ethyl alcohol poisoning. Poisoning by addictive substances. Poisoning by substances of plant and animal origin. Chemical waste poisoning. Agricultural toxicology. Toxicology of ionizing radiation. Biological, chemical and radiation weapons. Antidote. Biological tests.	
State exam syllabus:	
Recommended literature: Tumová I.: Toxikológia pre farmaceutov, Herba, 2016 Mulder G.J.: Pharmaceutical toxicology, Pharmaceutical Press, 2006 Patočka J.: Úvod do obecné toxikológie. ISBN 80-86571-04-,Manus, Praha 2003 Horák J., Linhart I., Klusoň P.: Úvod do toxikológie a ekológie pro chemiky, 2004 Prokeš J.: Úvod do toxikológie, Praha, 2005 Prokeš J- et al. Základy toxikológie, Galén, 2005	
Languages necessary to complete the course: Slovak language, English language	
Notes: Lecturers: doc. PharmDr. Anna Paul Hrabovská, PhD.; doc. PharmDr. Marek Máťuš, PhD.; Mgr. Ondrej Sprušanský, PhD.; Mgr. Peter Vavrinec, PhD.; Mgr. Diana Vavrincová, PhD.	
Last change: 11.04.2022	
Approved by:	