Посветени на хуманността
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ACADEMIC STANDART

FOR THE COURSE "PHARMACETICAL CHEMISTRY"

The academic standard for the course "Pharmaceutical chemistry" was approved by the Department council with Protocol № 05/14.07.2026, and Faculty council with Protocol № 07/15.07.2026.

1. Objective of the course study:

The course "Pharmaceutical Chemistry" is essential for Pharmacy education and a state exam is taken on it. This special scientific field, characteristic only of education in the Faculties of Pharmacy, represents an intersection of several fundamental scientific disciplines. The objective of the course study is to prepare qualified, creative, and motivated master pharmacists, with thorough knowledge on pharmacological groups, international nonproprietary names, relationship between chemical structure, physical and chemical properties and pharmacological action, mechanism of action, therapeutic indications, metabolism, elimination, stability, and synthesis of pharmaceutical drugs.

The objective aligns with the mission and concept of the university; the volume and credit rating of the specialty (as determined by ECTS); the qualification characteristics of the specialty and of the Master's degree; the discipline's place in the specialty in terms of relevance and chronology in the curriculum. As a special discipline, it provides the basis for training in Pharmaceutical Analysis.

2. Content of the course

The topics and classes of lectures, exercises and self-study questions are listed on the University's website.

The content is arranged chronologically so that each subsequent lecture and related exercises use already acquired knowledge and concepts.

3. Prerequisites

The student must have basic knowledge of inorganic and organic chemistry, biology, biochemistry, anatomy, and physiology to successfully start and complete their training in pharmaceutical chemistry.

4. Academic resources

The academic staff of the Department with Permanent employment contract includes four habilitated lecturers and non-habilitated lecturers. The habilitated lecturers in the pharmaceutical chemistry course are two. The lectures are delivered by two habilitated lecturers with a scientific degree (PhD) in Pharmaceutical Chemistry, as well as postgraduate degree in "Pharmaceutical Drug Analysis". Practical classes are conducted by non-habilitated lecturers.

5. Material resources

For teaching the course "Pharmaceutical Chemistry" the department provides three training laboratories and two scientific laboratories in Pharmaceutical chemistry and analysis.

6. Lectures

The lectures are developed and delivered in the form of multimedia presentations. The content and size of the lectures are a matter of the lecturer's choice. All lectures are made available to the students via SharePoint.

7. Practical exercises

Practical exercises are conducted in groups. Both independent as well as group tasks are assigned. The student's readiness and the learning outcomes (acquired knowledge and skills) achieved during the specific practical exercise are assessed. Students may be assigned individual tasks consisting of a presentation on a subject that the lecturer has outlined in a previous class. A discussion is then held with the rest of the students with questions directed at the presenter.

8. Information resources. Basic literature. Websites.

The lecturer presents a list of basic recommended literature for the discipline and for each of its components (lectures and exercises) with stress on the most readily available resources (defined as main sources). Internet sources may also be listed for further study by students. Students primarily rely on the lectures and seminar materials available on the SharePoint platform for independent study.

Textbooks:

- Medicinal Chemistry, W. Foye, Th. Lemke, D. Williams, Williams&Wilkins, 1995.
- An Introduction to Medicinal Chemistry, G. Patrick, Oxfort University Press, 2001.

- Textbook of Organic and Pharmaceutical Chemistry, J. Delgado, W. Remers, Lippincott-
  Raven, 1998.
- Pharmaceutical Chemistry, H. Roth, A. Kleeman, T. Beisswenger, John Wiley&Sons, 1988.
- Drug Actions, E. Mutschler, H. Derendort, 1995.

9. Tests

Students are introduced to the subject dynamically and intensely throughout the semester. It is presumed that the methods used in their education are of paramount importance to the depth and applicability of the knowledge and skills they acquire. A periodical assessment in the form of term tests is applied at least twice every semester. Students are duly informed about the results of the test (during the next exercise), which should assist their further studies. Within 3 (three) days of the announcement of the results the students have the right to examine their work. The results of these examinations are included as a part in the final course grade.

10. Independent preparation and extracurricular work

The student's independent work is directed by the lecturer (the assistant) who guides them on how to utilize the information provided by the literary sources.

11. Lecturer-student collaboration

The collaboration consists of:

- The teacher's commitment to the students and their preliminary preparation; eliminating any difficulties in mastering the material and an optional individual schedule for greater results.
- Providing consultation hours.
- Involving students in teams working on scientific and research projects, etc.

12. Examination

Two written colloquiums are held each semester.

The semester exam is written and oral. It is held after the second semester.

13. Grading standards

The successful completion of the course in Pharmaceutical Chemistry is evaluated as the sum of grades divided into two main components:

The first one is the assessment of the student's academic activity throughout the semester and the grade from continuous assessments.

The second one involves the grade from the final exam on the subject, which is conducted in accordance with the established regulations.

The discipline has clearly defined grading standards.

The extent of reproduction and usage of the acquired knowledge by the students are defined as information-reproductive, technologically-productive, problem-productive and innovative-creative. Based on the above, each assessment of the theoretical component of the exam is determined by a grading characteristic:

Poor (2): Indicates that the student has insufficient knowledge that cannot be used as a base for further advancement in the course study.

Average (3): Indicates knowledge reproduced in a crude and mechanical manner, while missing the main points of the topic at hand; it shows a lack of competence and a lack of individual approach in the application of professional skills. Poor use of technical terminology and lack textual consistency.

Good (4) Indicates a fairly detailed knowledge of the topic in question but lacks an individual approach in the use of technical and professional skills. Fair textual integrity but with certain inaccuracies.

Very Good (5) Indicates the use of an individual approach to solving the problems in question and an innovative way for applying scientific data. The student's thesis is clearly defined and well argued. Good use of terminology with minor inconsistencies. Good use of language.

Excellent (6) Indicates a creative, logical, and independent representation of the student's thesis; sound and precise use of scientific data; readiness for the practical application of the acquired skills. Great use of terminology and linguistic coherence.

Upon starting the course students should be acquainted with the grading standards, the examination procedure and how to get feedback for their progress during the semester.

14. Forming the final grade

Types of assessment:

Assessment of students' knowledge and evaluation of their academic achievements are carried out through continuous assessment (scheduled and unscheduled) and a semester exam.

Continuous assessment is a mandatory component of the educational process and is intended to determine the extent to which students have acquired the required knowledge and practical skills throughout the semester and the academic year. The results of continuous assessment are recorded in the student's academic record, taken into account, and incorporated into the final examination grade in Pharmaceutical Chemistry in accordance with the assessment system established in the course academic standard.

- The scheduled continuous assessment consists of two colloquia in each semester, requiring prior preparation on the major topics covered in the course. These colloquia are conducted during regular class sessions according to a predetermined schedule.

- The unscheduled continuous assessment includes quizzes, oral discussions covering lecture and practical class topics, and individual assignments completed during practical laboratory sessions.

The results of the continuous assessment determine the semester grades, and the average of these semester grades constitutes the student's final continuous assessment grade.

• The semester exam consists of both a written and an oral component. The student is required to provide written answers to two examination questions randomly selected from the current syllabus published on the university website. This is followed by an oral examination conducted by the examination committee, covering the material included in the syllabus.

Grade formation:

The results from the course are calculated based on the grade received during the lectures and exercises, and the grade received after the final exam.

The Final Complex Score (FCS) of the acquired skills and knowledge is shown with the following expression the result of which is rounded to an integer:

FCS = 0,2*OAG + 0,8*FEG

where: **OAG** – is the ongoing assessment grade from the process of studying the course (should not be "Poor 2"); **FEG** – is the grade from the final exam (should not be "Poor 2").

In case that the grade from OAG is "Poor 2" or the grade for FEG is "Poor 2", the final score is "Poor 2".

The final grade is rounded towards an integer and is written down into the academic records.

Semester Exam:

The semester exam is written and oral.

Aspects of the evaluation grade:

During the Pharmaceutical Chemistry semester exam, students are expected to demonstrate their knowledge of the key aspects of the two examination topics they have drawn. They are required to have a thorough understanding of the pharmacological classes of medicinal substances, their classification, International Nonproprietary Names (INNs), structural formulas, chemical nomenclature, mechanisms of action, relationship between the chemical structure, physicochemical properties and pharmacological activity, therapeutic indications, metabolism, elimination, stability, etc. Students' knowledge is assessed in accordance with the assessment criteria specified in the Academic Standard for the course.

15. Documentation, storage of results and control over assessment activities

- The assessed students have the right and obligation to be informed of the regulations, procedures and results of the assessment, to make claims and complaints in the event of non-compliance with these rules.

- The student's right within the meaning of the preceding subparagraph shall be valid in the case of technical deficiencies or errors (for example, in miscalculation or drawing up the grades), as well as on serious grounds for discrepancies between the actual knowledge, skills and competences shown, and the final evaluation for them.

- Adjustments to the grades in the cases referred to in the previous subparagraph in the student record book, examination report or in the general ledger account are allowed only by the lead lecturer of the course study.

- Possible disputes and claims on the part of the students are addressed in writing to the assessment team, who should give a reasoned answer by the end of the next business day.

- In case of established and proven cases of serious violations of the rights of the students in assessing their knowledge, skills, and competences they should refer with a written complaint to the Vice Rector for Quality and Accreditation.

- The exam papers are stored, and the students are given the opportunity to get acquainted with them and the assessment rules according to the procedure and procedure announced in advance. The period during which students have access to the examination papers and results is no longer than 3 (three) working days after the exam date.

- The characteristic of the course is presented to the students at the beginning of the course. This is in the accordance with the HEA Art. 56. Para. 1 “Teachers are obligated to develop and publicize, in an appropriate manner, a description of the lecture course they provide, including the titles and sequence of the topics of the course content, reference literature, the formation of the final assessment and the form of evaluating knowledge and skills.”