Vilnius University

PHARMACEUTICAL CHEMISTRY

Programme type	Master's studies (university)
Field of study	Technological Sciences
Study area	Materials Technologies
Degree	Master in Technological Sciences
Duration	2 years (4 semesters)
Workload	120 ECTS credits
Language of instruction	Lithuanian/English
Location	Vilnius, Lithuania
Starting date	1st of September

PROGRAMME DESCRIPTION

The objective

To prepare qualified, motivated and creative specialists with deep knowledge of chemistry, pharmacy, biology and materials (bio)technologies and research skills, able to formulate and solve problems of pharmaceutical chemistry on an independent and academic level, seeking to work in research institutes and industry companies that develop, produce, investigate, and/or supply pharmaceutical products or to continue their studies in doctoral programs.

Career opportunities

The graduate pharmaceutical chemists could work in private (biotechnology or pharmaceutical companies) and in public sectors (universities, research institutes, hospital laboratories) as well as in integrated study, science and business centers.

Access to further studies

studies in doctoral programs of Technological, Biomedical and Physical sciences.

KEY LEARNING OUTCOMES

Pharmaceutical Chemistry combines the study of drug discovery and development, pharmacology, biology, analytical techniques, and drug chemistry. The chemical design process and evaluation of potential future medications will be a prime focus of the studies. Students will be able to apply knowledge gained from materials courses, hands-on lab experiences and faculty research to the pharmaceutical industry.

COURSE INFORMATION

The programme has the following structure:

Course Type	1st Semester	2nd Semester	3rd Semester	4th Semester
Compulsory Courses	Selected Topics in Organic and Bioorganic Chemistry (5 ECTS)	Chromatography (5 ECTS)	Pharmaceutical Biotechnology (5 ECTS)	Master Thesis (30 ECTS)
	Synthetic Drugs Design (5 ECTS)	Pharmacodynamics and Pharmacokinetics (5 ECTS)	Technological Practice in Pharmaceutical Company (15 ECTS)	
	Validation Processes and Their Application for Life Science Research and Industry (5 ECTS)	Mass Spectrometry (5 ECTS)		
	Research Project I (10 ECTS)	Research Project II (10 ECTS)		
Elective Courses	Herbal Medicinal Substances and Their Extraction Technologies (5 ECTS)	Polymers in Pharmaceutical Technologies (5 ECTS)	Bionanomaterials in Pharmacy and Their Technologies (5 ECTS)	
	Management in a Modern Pharmaceutical Company (5 ECTS)	Diagnostics and Therapy in Nanomedicine (Theranostics) (5 ECTS)	Heterocycles in Pharmaceutical Chemistry (5 ECTS)	
	Vibrational Spectroscopic Analysis of Pharmaceuticals (5 ECTS)	(Q)SAR Method in Computer-Aided Drug Design (5 ECTS)	Cell Biology (5 ECTS)	
		Medical Inorganic Chemistry (5 ECTS)	Biochemical Analysis in Pharmacy (5 ECTS)	

GRADUATION REQUIREMENTS

Studies are finished by defending of Final Master Degree Project.

EXAMINATION AND ASSESSMENT REGULATIONS

The main form of assessment is an examination. Every course unit is concluded with either a written or written-oral examination or pass/fail assessment. Student's knowledge and general performance during the examination are assessed by using the grading scale from 1 (very poor) to 10 (excellent).

ENTRY REQUIREMENTS

Academic entry qualification overview

Bachelor of Physical Sciences (Chemistry), Life Sciences (Biology or Biochemistry), Technological Sciences (Biotechnology) or Engineering Sciences (Chemical Engineering or Bioengineering).

English language proficiency – the level not lower than B2 (following the Common European Framework of Reference for Languages (CEFR).

APPLICATION AND SELECTION REQUIREMENTS

General chemistry, Analytical chemistry, Physical chemistry, Organic chemistry, Biochemistry.

Academic contact	Admission contact
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