



JAGIELLONIAN UNIVERSITY
MEDICAL COLLEGE

Study programme

Organizational unit:	Doctoral School of Medical and Health Sciences
Programme:	Interdisciplinary program in Medical and Health Sciences
Level of study:	third-cycle program
Academic year:	2024/25

Table of contents

Programme	3
Effects	5
Plan	8

Education program at the Doctoral School of Medical and Health Sciences

Basic assumptions of the education program:

1. Educational program at the Doctoral School of Medical and Health Sciences (DS) was developed in accordance with the Act of July 20, 2018, Law on Higher Education and Science and the guidelines applicable at the Jagiellonian University in Krakow.
2. Education at DS lasts 8 semesters and is based on the Education Program (EP) and the Individual Research Plan (IRP).
3. Education at DS is offered within the disciplines in which the Jagiellonian University Medical College is authorized to award doctoral degrees.
4. The rules for submitting the IRP and changing it are specified in the DS Regulations.
5. The DS education program leads to the achievement of learning outcomes for qualifications at level 8 of the Polish Qualifications Framework.
6. EP is interdisciplinary in nature, covering the discipline of medical sciences, the discipline of pharmaceutical sciences and the discipline of health sciences. Individual disciplines are represented in EP in the form of educational paths chosen by the doctoral student.
7. The doctoral student follows the EP path consistent with the scientific discipline in which the doctoral thesis is being carried out. The selection of optional subjects within the EP path takes place before the start of the 2nd year of education.
8. Information regarding individual EP subjects is included in the course syllabus.
9. The languages in which the EP is conducted are Polish and English. The language of teaching in a given subject is determined by the syllabus.
10. Completion of the subject in English requires the doctoral student to present a document confirming knowledge of English at the B2 level or obtaining credit for the subject "English in medical scientific research" at the B2 level of language education, conducted in the first year of education at DS. Documents confirming knowledge of English at CEFR level B2 are: IETLS Academic and General Training certificate - min. 5.5 points or TOEFL iBT min. 72 points or Cambridge Assessment English B2 First or higher - min. 160 points. The exam date cannot be earlier than 4 years before the start of education. A doctoral student who is a citizen of a country where English is the main official language or who is a graduate of a university in a country where English is the main official language is exempt from the need to present a document confirming knowledge of English.
11. The education program is managed by the EP Head.
12. Doctoral students in particular disciplines are supervised by EP path coordinators appointed by the DS Director in consultation with the DS Council and the Jagiellonian University Doctoral Students' Association. EP path coordinators work in cooperation with the EP Head.
13. The number of ECTS points assigned to the program is a minimum of 40 ECTS.
14. A doctoral student may pursue electives in other doctoral schools of the Jagiellonian University, apart from the Jagiellonian University Medical College, in a number not exceeding 3 ECTS points.
15. Detailed requirements and qualification criteria for the educational program are specified in the regulations regarding the Rules of Recruitment to DS approved by the Senate of the Jagiellonian University.
16. In justified cases, a doctoral student may apply to the Director of DS for an individual course of study. The conditions for applying for an individual course of education will be determined by the Director of DS in the form of an ordinance published on the DS website.

Method of assessing the implementation of the education program:

1. Supervision over the EP and IRP activities carried out by the doctoral student is provided by the PhD supervisor.
2. The implementation of the IRP is subject to periodic evaluation by the doctoral committee and, if it is not appointed, by the evaluation team consisting of the supervisor or supervisors and the Head of the EP and a representative of the DS Council, based on the report submitted by the doctoral student. If the Head of the EP is also the PhD student's supervisor, the report is additionally approved by the DS Director. If the function of the EP Head is held by a person who is also the Director of DS, in the situation referred to in the preceding sentence, the report is approved by the Chairman of the DS Council. The report template is specified by the DS Director in the form of a message published on the DS website.
3. The first assessment is carried out no later than 12 months from the start of education. Subsequent evaluations are carried out at least once every 12 months on the dates specified in the IRP, except for the year in which the mid-term evaluation is carried out.
4. The Head of the EP, at the request of the doctoral student, based on the opinion of the PhD Supervisor or PhD Supervisors, the Program Committee, taking into account the opinion of the members of the Doctoral Committee in the event of its appointment, may make a decision on the acceptance of courses or classes not specified in the EP as

- part of the doctoral student's duties (with the appropriate allocation of ECTS points).
5. The method of conducting the mid-term evaluation is specified in the DS Regulations.
 6. Completion of the year of education is based on the obtained credits for compulsory subjects and the submitted report on the implementation of the IRP referred to in section 2. If the compulsory subjects are not passed for a maximum of 3 ECTS, it is permissible to apply to the Director of DS for conditional registration for the next year of education, with the obligation to complete the subject in the next year of education.
 7. Completion of the educational program is based on: obtaining credit for all compulsory subjects, obtaining by the doctoral student at least 40 ECTS points, credit for a foreign internship, credit for professional practice in higher education teaching.
 8. Education at DS ends with the submission of a doctoral dissertation. Submitting a doctoral dissertation is possible at the earliest after a positive result of the mid-term evaluation.

Acquired competences:

As part of participation in the DS, the doctoral student acquires the following competences:

1. competences covering advanced theoretical issues specific to the scientific profile of DS and methodological competences preparing to conduct and publish scientific research;
2. academic competences (e.g. scientific publications, scientific communication, obtaining funds for research, ethics of conducting scientific research, popularization of scientific research results, etc.);
3. professional competences and soft competences (e.g. career planning, preparation for teaching work, project management, managerial competences, business communication, etc.).

Description of the Education Program:

The DS of Medical and Health Sciences Education Program includes:

Compulsory subjects (part of the obligations from which the doctoral student obtains a total of 24 ECTS points, including the obligation to complete one subject in the field of research methodology and ethics (for at least 2 ECTS) and advanced biostatistical methods (for at least 2 ECTS).);

Specialized subjects in the field of scientific research methodology in a given scientific discipline (optional classes, the doctoral student is obliged to choose subjects worth a minimum of 4 ECTS points in total) and workshops with a supervisor in an appropriate scientific discipline, a total of 6 ECTS points);

Subjects related to additional vocational education and soft skills (optional classes, the doctoral student is obliged to choose subjects worth a minimum of 2 ECTS points in total).

If a doctoral dissertation is submitted before the 8th semester of education, it is permissible to take an additional 2 ECTS points from optional subjects for each year of education instead of completing the "Individual workshops with a supervisor" course in the 3rd or 4th year of education.

A mandatory course is introduced into the Doctoral School Education Program research internship, at least two weeks, conducted at the center foreign. The internship will be financed under available programs implemented by the Jagiellonian University under bilateral or other agreements programs, including Erasmus Plus. The internship will be carried out after evaluation mid-term. After consultation with the PhD Supervisor, the PhD student independently applies to a foreign center and applies for financial support for the trip. The conditions for completing the foreign internship will be determined by the Director after receiving the opinion of the DS Council.

Effects

Knowledge

General

PhD student knows and understands:

Code	Contents	PRK
SD_W01	PhD student knows and understands a scientific research methodology covering theoretical foundations and general issues related to the represented discipline of medical and health sciences taught at the doctoral school.	P8S_WG
SD_W02	PhD student knows and understands scientific research methodology covering selected detailed issues relevant to the discipline in which the doctoral dissertation is prepared to the degree that allows for a revision of the existing paradigms.	P8S_WG
SD_W03	PhD student knows and understands economic, legal and ethical determinants of research activity and its aspects.	P8S_WK
SD_W04	PhD student is familiar with the knowledge transfer and commercialization of research results.	P8S_WK
SD_W05	PhD student has basic knowledge of acquiring research projects: sources of funding and current procedures (application for grants, evaluation of applications).	P8S_WG
SD_W06	PhD student knows and understands the rules for scientific results dissemination, also in the open-access mode, and the basic principles for the knowledge transfer to the economic and social sphere, including the basic principles for the commercialization of scientific research activity and know-how related to these results.	P8S_WK
SD_W07	PhD student knows and understands modern concepts, methods and tools for teaching or training activity.	P8S_WK
SD_W08	PhD student knows and understands global achievements, including theoretical foundations, general issues and selected specific issues related to the discipline in which the doctoral dissertation is prepared.	P8S_WG
SD_W09	PhD student knows and understands the main development trends of scientific disciplines crucial for education in medical and health sciences.	P8S_WG
SD_W10	PhD student knows and understands selected paradigms in the field of science in which the doctoral programme is carried out.	P8S_WG
SD_W11	PhD student knows and understands basic rights and responsibilities in the field of health and safety in education and the rules applicable during classes	P8S_WK
SD_W12	PhD student knows and understands rules of safe conduct at the scene of an incident, including basic cardiopulmonary resuscitation and handling of an unconscious person	P8S_WK

Skills

General

PhD student can:

Code	Contents	PRK
SD_U01	PhD student using his/her knowledge can critically analyze and evaluate the results of scientific research achievements in the discipline represented and his/her contribution to its development; can formulate new solutions to problems within established and modified methodological paradigms; can creatively apply and develop methods, techniques and research tools appropriate for the conducted research; is able to make conclusions based on scientific research results.	P8S_UW
SD_U02	PhD student can disseminate or transfer the results of scientific activities also in popular forms.	P8S_UK
SD_U03	PhD student can prepare an application for funding of a research project.	P8S_UW
SD_U04	PhD student can speak a modern foreign language to the degree that enables participation in an international scientific and professional environment, in particular in connection with the involvement in conferences, seminars, workshops, etc., at home and abroad; can establish contacts for the exchange of experience and communicate on specialist topics at the B2 level of the Common European Framework of Reference for Languages, with specialists in his/her scientific and professional discipline, as well as with people from outside these environments.	P8S_UK
SD_U05	PhD student can plan and implement an individual or team research or creative project, also in an international environment.	P8S_UO
SD_U06	PhD student can document and present research work results and prepare scientific publications, respecting applicable principles and intellectual property protection rules.	P8S_UW
SD_U07	PhD student can participate in the scientific discourse and initiate a debate.	P8S_UK
SD_U08	PhD student can independently plan and act for his/her own scientific and professional development as well as inspire and organize the development of other people.	P8S_UU
SD_U09	PhD student can develop and give classes within his/her scientific and professional activity and use modern methods and tools.	P8S_UU
SD_U10	PhD student can transfer the results of research work into the economic and social sphere; can analyze the potential for sharing research results to the economic and social sphere and initiate actions to implement such transfer.	P8S_UW
SD_U11	PhD student can define the purpose and subject-matter of the research, formulate a research hypothesis, develop methods, techniques and research tools and apply them creatively based on the research results.	P8S_UW
SD_U12	PhD student using his/her knowledge can critically analyze and evaluate research results, expert activities and other creative works and their contribution to the knowledge development.	P8S_UW
SD_U13	PhD student can use knowledge from a given scientific discipline to creatively identify, formulate and innovatively solve complex problems or perform research tasks.	P8S_UW
SD_U14	PhD student can critically refer to the current state of research in the discipline in which his/her doctoral project is implemented.	P8S_UW
SD_U15	PhD student is able identify potential threats to life and health during and outside of classes and behave adequately to the threat	P8S_UO
SD_U16	PhD student is able avoid endangering your own health and assess your own abilities when administering first aid	P8S_UO
SD_U17	The doctoral student can use a modern foreign language to the extent that enables effective communication in everyday life in written and spoken form.	P8S_UK

Social competence

General

PhD student is ready to:

Code	Contents	PRK
SD_K01	PhD student is ready for a critical evaluation of his/her scientific achievements and expert activities within the discipline in which the doctoral dissertation is prepared.	P8S_KK
SD_K02	PhD student is ready for a critical assessment of his/her contribution to developing the scientific discipline in which the doctoral dissertation is prepared.	P8S_KK
SD_K03	PhD student can define the role of methodological paradigms of his/her discipline and the disciplines in solving social problems.	P8S_KO
SD_K04	PhD student can identify the need to formulate new research paradigms within the discipline in which is his/her doctoral project is implemented.	P8S_KR
SD_K05	PhD student is ready to fulfil social obligations of researchers and creators and initiate public interest activities by properly disseminating information and opinions on scientific achievements to the public, training specialists, and other activities leading to the development of a knowledge-based society.	P8S_KO
SD_K06	PhD student is ready to think and act in an enterprising way, creating new ideas and seeking innovative solutions with representatives of other disciplines; is prepared for intellectual challenges in scientific/professional and public sphere and taking responsibility for his/her decisions.	P8S_KO
SD_K07	PhD student is ready to maintain and develop the ethos of research and creative environments, including independent researching, taking into account i.a. existing financial and infrastructural constraints; is prepared to respect the principle of public ownership of research results together with the principles of intellectual property protection.	P8S_KR
SD_K08	PhD student can recognize the importance of knowledge from other disciplines and domains (other than that the one in which the doctoral programme is implemented) in addressing cognitive and practical problems.	P8S_KR
SD_K09	PhD student is ready to take into account in his/her research the solutions proposed by other disciplines of knowledge.	P8S_KR
SD_K10	PhD student is ready to compliance with legal regulations in the field of health and safety in education and the need to update them due to the changing legal status	P8S_KO
SD_K11	PhD student is ready to comply with the rules of health and safety of education during and outside of classes, help other people and be responsible for their own life and health and that of others	P8S_KO

Plan

Name	Type of classes	ECTS	Examination method	Mandatory	Semester	Learning outcomes
Research methods	seminar: 20	2	graded credit	obligatory	1	SD_W01, SD_W06, SD_U01, SD_U11, SD_U06, SD_U08, SD_K09, SD_K01, SD_K02
Ethics of research with human participants in Biomedicine	seminar: 12	2	graded credit	obligatory	1	SD_W03, SD_U12, SD_K05
Effective teaching of medical education at a university	seminar: 5 classes: 10	1	graded credit	obligatory	1	SD_W07, SD_W11, SD_U09, SD_U08, SD_K10
English in biomedical research B2	foreign language course: 15 e-learning foreign language course: 15	3	graded credit	obligatory	1 2	SD_W08, SD_U04, SD_U17, SD_K01
Individual workshops with the Promotor	seminar: 30	2	credit	obligatory	1 2	SD_W01, SD_W03, SD_U11, SD_K01
Training in health and safety education	lecture: 4	0	credit	obligatory	1	SD_W11, SD_W12, SD_U15, SD_U16, SD_K10, SD_K11
Applying for funding for a research project	seminar: 24 workshop: 6	3	graded credit	obligatory	2	SD_W03, SD_U01, SD_U03, SD_U08, SD_K01, SD_K02, SD_K05, SD_K07, SD_K09, SD_K03, SD_K08
Biostatistics	classes: 25	3	graded credit	obligatory	2	SD_W01, SD_W06, SD_U01, SD_U06, SD_K01, SD_K02, SD_K08, SD_K09
Presentation of own research results	lecture: 5 workshop: 10	2	graded credit	obligatory	3	SD_W04, SD_W06, SD_W07, SD_W08, SD_U01, SD_U02, SD_U04, SD_U07, SD_U12, SD_K02, SD_K03, SD_K05
Scientific writing	seminar: 15	1	graded credit	obligatory	3	SD_W06, SD_W01, SD_W03, SD_W05, SD_U06, SD_U01, SD_U03, SD_U04, SD_U07, SD_K01, SD_K06, SD_K07, SD_K04
Professional training in medical Didactics	professional practice: 60	2	credit	obligatory	3 4 5 6	SD_W07, SD_U08, SD_U09, SD_K05
Current achievements in medical and health sciences	e-learning lecture: 6 e-learning seminar: 14	2	graded credit	obligatory	3 4	SD_W08, SD_W10, SD_W09, SD_U01, SD_K08
Protection of intellectual property. Patent and implementation rules	e-learning seminar: 8 e-learning lecture: 2	1	graded credit	obligatory	4	SD_W04, SD_W06, SD_W03, SD_U01, SD_U06, SD_U10, SD_U11, SD_K06, SD_K07

1st Group Complementary training in professional and soft skills 1st year

A PhD student is required to choose subject for a minimum of 1 ECTS.

Name	Type of classes	ECTS	Examination method	Mandatory	Semester	Learning outcomes
Introduction to R-programming	classes: 30	2	graded credit	elective	1 2	SD_W06, SD_U06, SD_U09, SD_K08
A critical review of the literature	seminar: 15	1	graded credit	elective	2	SD_W02, SD_U01, SD_U12, SD_U14, SD_U13, SD_U07, SD_K01, SD_K02
Activities of university and non-university research centres	lecture: 6 seminar: 24	1	graded credit	elective	2	SD_W08, SD_W03, SD_W09, SD_U12, SD_U13, SD_U11, SD_K08, SD_K09
Systematic reviews	seminar: 6 workshop: 9	1	graded credit	elective	2	SD_W02, SD_U01, SD_K02

2nd Group Methods and ethics of research

A PhD student is required to choose subjects one of three.

Name	Type of classes	ECTS	Examination method	Mandatory	Semester	Learning outcomes
Methods and ethics of research in humans	seminar: 18	2	graded credit	elective	2	SD_W01, SD_W02, SD_U01, SD_U11, SD_U05, SD_K08
Methods and ethics of research in animals	seminar: 18	2	graded credit	elective	2	SD_W03, SD_U02, SD_U09, SD_U05, SD_K04
Methods and ethics of health care system research	seminar: 18	2	graded credit	elective	2	SD_W03, SD_W01, SD_U01, SD_U05, SD_U11, SD_U12, SD_U14, SD_K03, SD_K04

3rd Group Advanced methods in biostatistics

A PhD student is required to choose subjects one of four.

Name	Type of classes	ECTS	Examination method	Mandatory	Semester	Learning outcomes
Regression models in biomedical science	classes: 20	2	graded credit	elective	3	SD_W01, SD_W09, SD_U01, SD_U13, SD_U06, SD_U11, SD_K01, SD_K08, SD_K09
Multidimensional models in data analysis	classes: 20	2	graded credit	elective	3	SD_W01, SD_W09, SD_U01, SD_U06, SD_U11, SD_K06, SD_K08, SD_K09
Linear model in experimental setup	classes: 20	2	graded credit	elective	3	SD_W01, SD_W02, SD_W09, SD_U01, SD_U06, SD_K08, SD_K09

Name	Type of classes	ECTS	Examination method	Mandatory	Semester	Learning outcomes
Statistical methods for practical management of omics data	classes: 20	2	graded credit	elective	3	SD_W01, SD_U11, SD_K08

Complementary training in professional and soft skills 3rd year

A PhD student is required in the third year to choose subjects for a minimum of 1 ECTS.

Name	Type of classes	ECTS	Examination method	Mandatory	Semester	Learning outcomes
Basics of interpersonal communication	seminar: 10 workshop: 5	1	graded credit	elective	5	SD_W09, SD_U13, SD_K08
Media in scientific work	seminar: 4 classes: 6	1	credit	elective	5	SD_W06, SD_U02, SD_K05
Science publications; submission for printing, sharing and popularization	seminar: 5 classes: 5	1	graded credit	elective	5	SD_W06, SD_W04, SD_U06, SD_U02, SD_U10, SD_K05
The lifecycle of a publication; from submission to open science and to promotion	seminar: 15 workshop: 15	2	graded credit	elective	5	SD_W06, SD_W08, SD_W09, SD_W10, SD_U02, SD_U05, SD_U06, SD_K07, SD_K08, SD_K09
English in biomedical research C1	foreign language course: 15 e-learning foreign language course: 15	3	graded credit	elective	5 6	SD_W08, SD_U04, SD_U17, SD_K01
Subgroup Second foreign language	foreign language course: 30	2	graded credit	elective	5 6	
Spanish language	foreign language course: 30	2	graded credit	elective	5 6	SD_W01, SD_U04, SD_U17, SD_K01
German language	foreign language course: 30	2	graded credit	elective	5 6	SD_W01, SD_U17, SD_K02
French language	foreign language course: 30	2	graded credit	elective	5 6	SD_W01, SD_U04, SD_U17, SD_K01
Principles of the international cooperation in scientific projects	seminar: 25 workshop: 5	2	graded credit	elective	6	SD_W03, SD_W04, SD_W05, SD_W07, SD_U03, SD_U04, SD_U05, SD_K08

Name	Type of classes	ECTS	Examination method	Mandatory	Semester	Learning outcomes
Academic entrepreneurship	lecture: 6 seminar: 4	1	graded credit	elective	6	SD_W04, SD_W06, SD_U02, SD_U08, SD_U10, SD_K06
Artificial intelligence in medical sciences	seminar: 10	1	graded credit	elective	6	SD_W01, SD_W02, SD_U01, SD_K04
New medical technologies and philosophy	lecture: 2 seminar: 8	1	graded credit	elective	6	SD_W01, SD_W02, SD_W03, SD_W08, SD_U01, SD_U02, SD_U03, SD_U05, SD_U06, SD_U07, SD_U08, SD_U09, SD_U11, SD_U12, SD_U10, SD_U13, SD_U14, SD_K01, SD_K03, SD_K04, SD_K05, SD_K06, SD_K09, SD_K07, SD_K08

Plan - Health sciences

Name	Type of classes	ECTS	Examination method	Mandatory	Semester	Learning outcomes
Individual workshops with the Promotor in health sciences	seminar: 90	6	credit	obligatory	3 4 5 6 7 8	SD_W01, SD_W02, SD_W03, SD_W05, SD_U01, SD_U06, SD_U11, SD_U13, SD_U14, SD_K01, SD_K02, SD_K06

Module in the discipline of health sciences 2nd year

A PhD student is required in the second year to choose subjects for a minimum of 2 ECTS.

Name	Type of classes	ECTS	Examination method	Mandatory	Semester	Learning outcomes
Methods of epidemiological studies	seminar: 15	1	graded credit	elective	3	SD_W01, SD_W02, SD_U05, SD_U11, SD_K03
Organization and financing of health care in Poland	seminar: 6 e-learning seminar: 9	1	credit	elective	4	SD_W02, SD_W08, SD_U07, SD_U14, SD_K08, SD_K09
Non-invasive biomarkers in human health studies	seminar: 15	1	graded credit	elective	4	SD_W01, SD_W07, SD_W08, SD_U01, SD_U07, SD_U11, SD_U12, SD_U13, SD_U14, SD_U04, SD_K05, SD_K07, SD_K08, SD_K10

Module in the discipline of health sciences 3rd year

A PhD student is required in the third year to choose subjects for a minimum of 2 ECTS.

Name	Type of classes	ECTS	Examination method	Mandatory	Semester	Learning outcomes
Exercise physiology and its importance in medicine and rehabilitation	seminar: 16	1	graded credit	elective	5	SD_W08, SD_W10, SD_W09, SD_U13, SD_U14, SD_U11, SD_K08, SD_K09
Research determinants in selected areas of health sciences	seminar: 15	2	graded credit	elective	5	SD_W01, SD_W02, SD_W09, SD_W08, SD_W06, SD_U01, SD_U05, SD_U06, SD_K01, SD_K02, SD_K06
European Health Systems	e-learning seminar: 5 e-learning classes: 10	1	graded credit	elective	6	SD_W08, SD_U07, SD_U12, SD_U14, SD_K08

Plan - Medical sciences

Name	Type of classes	ECTS	Examination method	Mandatory	Semester	Learning outcomes
Individual workshops with the Promotor in medical sciences	seminar: 90	6	credit	obligatory	3 4 5 6 7 8	SD_W01, SD_W02, SD_W03, SD_W05, SD_U01, SD_U06, SD_U11, SD_U13, SD_U14, SD_K01, SD_K02, SD_K06

Module in the discipline of medical sciences 2nd year

A PhD student is required in the second year to choose subjects for a minimum of 2 ECTS.

Name	Type of classes	ECTS	Examination method	Mandatory	Semester	Learning outcomes
Regenerative medicine from the bench to the bedside	seminar: 18 workshop: 12	2	graded credit	elective	3	SD_W01, SD_W09, SD_U13, SD_K08
Medical techniques in biomedicine	e-learning seminar: 15	1	graded credit	elective	4	SD_W01, SD_U01, SD_K01
Imaging methods in medical sciences	seminar: 12 workshop: 3	1	graded credit	elective	4	SD_W01, SD_W02, SD_W03, SD_U01, SD_U02, SD_K01, SD_K02, SD_K03

Module in the discipline of medical sciences 3rd year

A PhD student is required in the third year to choose subjects for a minimum of 2 ECTS.

Name	Type of classes	ECTS	Examination method	Mandatory	Semester	Learning outcomes
Imaging and biochemical biomarkers in clinical research	seminar: 15	1	credit	elective	5	SD_W02, SD_W08, SD_W10, SD_U05, SD_U12, SD_K01

Name	Type of classes	ECTS	Examination method	Mandatory	Semester	Learning outcomes
Cognitive neuroscience	seminar: 10 classes: 20	2	graded credit	elective	6	SD_W01, SD_W04, SD_W06, SD_U01, SD_U02, SD_U07, SD_K08, SD_K09
Clinical psychology	seminar: 10 workshop: 5	1	graded credit	elective	6	SD_W09, SD_U13, SD_K08

Plan - Pharmaceutical sciences

Name	Type of classes	ECTS	Examination method	Mandatory	Semester	Learning outcomes
Individual workshops with the Promotor in pharmaceutical sciences	seminar: 90	6	credit	obligatory	3 4 5 6 7 8	SD_W01, SD_W02, SD_W03, SD_W05, SD_U01, SD_U06, SD_U11, SD_U13, SD_U14, SD_K01, SD_K02, SD_K06

Module in the discipline of pharmaceutical sciences 2nd year

A PhD student is required in the second year to choose subjects for a minimum of 2 ECTS.

Name	Type of classes	ECTS	Examination method	Mandatory	Semester	Learning outcomes
Selected drug discovery technologies	seminar: 10 classes: 5	1	graded credit	elective	3	SD_W02, SD_W09, SD_U01, SD_U09, SD_U12, SD_K03
Nature therapy	seminar: 11 classes: 4	1	graded credit	elective	3	SD_W01, SD_W09, SD_W02, SD_W08, SD_W06, SD_W07, SD_U01, SD_U02, SD_U12, SD_U13, SD_U14, SD_U15, SD_K01, SD_K08, SD_K09, SD_K03, SD_K05, SD_K10
Biological and biosimilar medications. Generic medications	seminar: 13 classes: 2	1	graded credit	elective	4	SD_W01, SD_W03, SD_U01, SD_K01, SD_K08

Module in the discipline of pharmaceutical sciences 3rd year

A PhD student is required in the third year to choose subjects for a minimum of 2 ECTS.

Name	Type of classes	ECTS	Examination method	Mandatory	Semester	Learning outcomes
Selected aspects of pharmacotherapy safety	lecture: 6 seminar: 9	1	graded credit	elective	5	SD_W01, SD_W08, SD_W02, SD_U01, SD_U14, SD_U12, SD_U07, SD_K09, SD_K08

Name	Type of classes	ECTS	Examination method	Mandatory	Semester	Learning outcomes
Drug, food interactions, clinical aspects	seminar: 10 classes: 5	1	graded credit	elective	6	SD_W09, SD_W01, SD_U01, SD_U12, SD_U02, SD_K05
Bioinformatics databases in pharmaceutical sciences	seminar: 3 classes: 12	1	graded credit	elective	6	SD_W02, SD_U01, SD_K06