250 years of EXCELLENCE in medical education, research & innovation and healthcare

SEMMELWEIS UNIVERSITY

Semmelweis University

Doctoral School of Pharmaceutical Sciences

TRAINING PLAN

2020

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I. Purpose, structure and design principles of the training

"The European Union's stated goal since 2000 is to create the conditions for a competitive, knowledge-based, innovative European economy and society." (Csehó, 2009, p. 57) The points of the ten principles of Salzburg described in the previous workshop study, which analyze the broad perspectives of doctoral training and affect the goals and training strategy of doctoral training, are cited as a reference:

„1. Principle: The creation of novel scientific results through original research remains a key element of doctoral training, but it must be borne in mind that doctoral training must increasingly meet the expectations of the labour market outside the academy ”(Csehó, 2009. p. 59).

2. Integration into institutional strategies and policies: Universities, as institutions, must take responsibility for ensuring that the doctoral programs and research courses they offer are designed to meet new challenges and offer appropriate professional career development opportunities for participants.

The training program of the Doctoral School of Pharmaceutical Sciences is in line with the objectives of the European Research Area (ERA), the present self-assessment I.1.2. to the domestic and international perspectives set out in point 1, identified with the aims and training strategies of Semmelweis University as a research elite university. The Preamble and the first paragraph of the Doctoral Regulations of the Semmelweis University (hereinafter DSz) concerning doctoral training set out the aims of doctoral training and degrees and at the same time declare identification with the first Salzburg principle:

„1. § The aim of the doctoral training is to train highly competent professionals with high quality and international standards, who have the knowledge and experience necessary to achieve first-class scientific performance, and in their doctoral dissertation, resp. (…) By awarding a doctoral degree, “the University recognizes and certifies that the person with the doctoral degree is suitable for independent research, for the high-quality cultivation of a given discipline/field of study/research enriching new results”. (DSz, Preamble)

The course offer of our doctoral school within the programs determines the training structure, and the training process of our school is uniformly laid down in the university's Doctoral Regulations and Operational Regulations. In accordance with the publicity principle of the training program, our training plan, which presents our courses in a structured way, is available on the doctoral training website of Semmelweis University and on the interface of doktori.hu containing our school.

Out of the “ten principles” of doctoral training in Salzburg, we have developed our course offerings and the time limits and content of their completion in accordance with the points concerning the training program.

Principle 7: “Length of training: the length of doctoral training must remain within an appropriate time limit (3-4 years for full-time training.

8. Support for innovative solutions: creating the conditions for interdisciplinary training; Incorporating transferable skills training into doctoral programs."

9. Increasing mobility: Doctoral programs should look for ways to support mobility, both geographically and across disciplines, as well as across sectors, as well as international cooperation. All this within an integrated framework based on cooperation between universities and other partners (Csehó, 2009, 59-60).

The training period is 3 academic years for students who entered the system before 1 September 2016, and 4 academic years for students who entered doctoral training after 1 September 2016.

Our Doctoral Regulations provide for this in the chapter entitled The structure of doctoral training:
„4. § .1. Doctoral training consists of a training and research phase as well as a research and dissertation phase. The training time - if the Nftv. unless otherwise provided - eight semesters, which means the duration of the two phases of the training and the fulfilment of the study obligations, the completion of the research work and the payment of the doctoral scholarship".
In accordance with the interdisciplinary training principle, our training plan reflects the HAC classification (HAC Decisions 2012/7 / III / 9, 2014/7 / VI / 1, 2018/8 / VI and 2018/10 / VIII / 3)
http://old.mab.hu/web/index.php?option=com_content&view=article&id=387&Itemid=894&lang=hu) within the field of medicine , which is embodied in the course offerings of the two programs within the school - 3/1 Modern Research Areas in Pharmaceutical Sciences and 3/2 Experimental and Clinical Pharmacology - within training time limits. We seek to implement the requirement of interdisciplinary mobility of Salzburg Principle 9 in the pursuit of coherence in training programs.
The legal background of the doctoral program of the Doctoral School of Pharmaceutical Sciences is provided by the Doctoral Regulations of Semmelweis University, which determine the number of credits required for the graduate, the type of credits that can be obtained and the number of credits that can be obtained within 4 semesters.

§ 4. 4. At least 240 credits must be obtained in doctoral training. A doctoral student who has fulfilled his / her study obligations obtains the required credits in the doctoral program. Students participating in organized training - Hungarian state scholarship, non-state scholarship and self-paid - must meet the same conditions for obtaining the final certificate (pass) in order to complete the training and research, as well as the research and dissertation phase (courses, research work). The conditions are contained in these Regulations.
§ 6. 3. 240 credit points can be obtained in 8 semesters. The EDT may grant an exemption from this upon individual request, if permitted by law; in this case, the 240 credits can be completed in less than half a semester.
7. § .5. Doctoral schools must draw up a 2-year training (course) plan, which must be updated each year for an additional year. Students starting their studies at a doctoral school should be given the opportunity to plan their studies for two years in advance.

Reference:
Julianna Csehó: Doctoral courses, the situation of young researchers - European dimension, In. Higher Education Workshop, 2009 pp. 57-70. https://matarka.hu/cikk_list.php?fusz=102004

I. Training plan

The 240 credit points to be completed during the training period must be collected according to the rules set out in the following Doctoral Regulations:
- a minimum of 16 study credits for completing courses (Section 7.9. “During the training, the student must complete at least 16 study credits (units).)
- a maximum of 45 credit points for educational activities (Section 9 .1 "The number of educational credits during the entire training cycle may not exceed 45".
- a maximum of 179 credit points must be collected for research work. (Section 8 .1. The justified (possible) number of research credits in the given semester shall be calculated on the basis of the other two credits (supplemented to 30). ”)

The theoretical structure of our sample curriculum (distribution of **240 credits**) is the following:

1-4. semester (**120** credits in total)
Completion of courses: **4 credits**
Research work, teaching work **26 credits**
Total**: 30 credits/semester**
5-8. semester (**120 credits** in total)
Research work, teaching work Total**: 30 credits** / **semester**

Completion of study credits (**16 credits in total during the 2 academic years**) is possible with courses, of which a maximum of one credit can be obtained by successfully answering the test questions of the University PhD Science Days.

Within the Doctoral School of Pharmaceutical Sciences, we have an extensive course database, which is planned to be published every semester within the 2-year time structure, displaying our central compulsory electives as well as elective courses within the programs.
From the course database, all our PhD students choose the course they find most useful for their research topic in consultation with their supervisor, so they have relative freedom in completing their study credits. At the same time, the Doctoral Regulations provide uniform guidelines for all our programs on the distribution of the study credits to be obtained at the end of the first four semesters - the training and research phase – i.e. before the complex exam.

Completion of the courses is assessed by the course leaders after the final exam of the course and certified in the doctoral student's textbook. 9. §.1.
The supervisor evaluates in writing the progress and results of his / her doctoral student. The report is part of the complex examination application, one copy of which is sent by the student to the head of the doctoral school of the discipline, while the other is forwarded to the Doctoral Office.
In the second semester of each academic year, the recommended condition for acceptance of the semester is participation in the annual conference of the Semmelweis University PhD Science Days with a presentation (poster/ oral presentation).

Research credits are credited by the supervisor each semester, taking into account the research plan. "The justified (possible) number of research credits in a given semester shall be calculated based on the other two credits (supplemented to 30)." 8. §.1-2.
Thesis report: the doctoral student reports on the results of his/her research work at an institutional or research group seminar.

The principles and recommendations laid down in the Code of Ethics of the Hungarian Academy of Sciences in connection with the ethical aspects of scientific research and publication carried out within the framework of the DI are the guiding principles.
Prerequisite for applying for a complex exam: The doctoral student is obliged to prepare a detailed report on the completed research work at the end of the second academic year, which must include:
- courses are taken and completed, with result and credit points,
- educational activity, indicating the number of hours and credit points,
- the main results of the research,
- his presentations,
- published, accepted, submitted.

The value of the cumulative impact factor expected when submitting the dissertation to the Doctoral School of Pharmaceutical Sciences in accordance with Section 19, Clauses 4 and 5 [Conditions for obtaining a degree related to publication] is as follows:

Theoretical disciplines: 3.5 (except for the following)
Pharmacognosy: 2.0
Drug analysis: 2.0
Pharmaceutical technology: 2.0
Forensic medicine: 2.0
Clinical pharmacology: 2.0
Preventive medicine, public health: 2.0
Organic synthetic and Pharmaceutical chemistry: 2.0
Pharmacy administration: 1.0

The publication requirements can be fulfilled with the publications published in the topic of the dissertation in the different fields of specialization of all three disciplines, the fulfilment must be certified with a library data sheet.
At the Doctoral School of Pharmaceutical Sciences, up to 10% of the IF amount determined in accordance with the discipline. 15% of the indicated IF amount can be triggered by 2 articles published in a professionally recognized international journal without an impact factor (Appendix 27 of the D.Sz.)

Types of our courses
Compulsory elective KV courses at the university level
Compulsory courses within the programs
Compulsory elective courses within the programs
Optional courses

APPENDIX 1: LIST OF THE COURSES

Courses of Doctoral School of Pharmaceutical Sciences

Code	Title, course leader and credit number of the course	Hours
	Compulsory elective KV courses at the university level	
00132-KVA	Literature searching, efficient publishing strategy 3 credit **(Dr. Vasas Lívia)**	**45**
0075KVA	Scientific writing in English 2 credit **(Dr. Fogarasi-Nuber Katalin)**	**28**
0078-KVA	PhD Scientific Days 2020-1 **(Dr. Benyó Zoltán**) 1 credit	**28**
0008-KVA-1	**E-LEARNING** Introduction to biostatistics 1 credit **(Dr. Dinya Elek)**	**15**
0068-KVA	Statistical data analysis (**Dr. Tóthfalusi László)** 1 credit	**16**
0088-KVA	PhD Summer School 1 credit **(Dr. Varga János Tamás)**	**16**
0012-KVA	Experimental animals – animal experiments 4 credit **(Dr. Szabó Györgyi, Dr. Wéber György)**	**80**
	Compulsory courses within the program No.2	
3117-K-A	Pharmacodynamics I. 2 credit **(Dr. Zádori Zoltán)**	**30**
3117-2-KA	Pharmacodynamics II. 2 credit **(Dr. Tekes Kornélia)**	**28**

Code	Title and credit number of the course	Hours
	Compulsory elective courses within the programs	
3101-A	Industrial pharmaceutical technology **(Dr. Antal István)** 3 credit	**45**
3133-A	Pharmaceutical applications of NIR spectroscopy 3 credit **(Dr. Antal István)**	**45**
3106-A	Phytochemistry (**Dr. Lemberkovics Éva; Dr. Kursinszki László)** 3 credit	**45**
3152-A	Therapeutical activity, side effects and interactions in phytotherapy **(Dr. Kéry Ágnes, Dr. Alberti-Dér Ágnes)** 2 credit	**30**
3121-A	Evidence synthesis to support coverage decisions of medical technologies 2 credit **(Dr. Vokó Zoltán)**	**30**
3122-A	Health economic aspects of pharmaceutical R&D decisions 2 credit **(Dr. Kaló Zoltán)**	**30**
3163-A	Chiral analysis 2 credit (**Dr. Tóth Gergő)**	**28**
3243-A	Introduction to pharamacological research **(Dr. Zelles Tibor)** 2 credit	**28**
3159-A	An overview of the principles of the discovery and develpoment planning of medicines 1 credit **(Dr. Ferdinandy Péter)**	23

Optional courses:
Accredited courses of the Doctoral Schools of Semmelweis University and the Doctoral Schools of Pharmaceutical Sciences of the partner universities, as well as the courses of the Doctoral School of ELTE and BME can be considered optional courses. It is also an option to take online courses at foreign universities and to have the credit recognized on the basis of a certificate issued by the university announcing the course.