

PROGRAMME OF THE MUG FIRST DOCTORAL SCHOOL

Study cycle: 2020/21 to 2023/24

I. COMPULSORY COURSES MODULE – ALL DISCIPLINES

YEAR: I - 2020/21

Course	Semester	Total No. of hours	Course form			Course crediting form	Educational outcomes: P8S_
			L	S	PT		
Statistical Methods in Scientific Research	I	15	-	10	5	exam	WG, UW, UK +
Ethics in Science	I	5	-	5	-	credit test	KR +++ WK ++ UK, UO, KO +
Bibliographic Aspects of Scientific Publications	I	3	-	-	3	credit test	WG, UW, UK, KR +
Methodology of Conducting Research, Scientific Discourse	I/II	20	5	15	-	credit test	WG, UW, UK, UO +++ KK ++ WK, , UU, KR +
Methodology of the Teaching Process and Psychology of Learning	I/II	15	-	15	-	credit test	WG, UK, UO ++ WK, UW, UU, KK, KO, KR +
Methodology of Presentation and Dissemination of the Research Results	II	10	-	10	-	graded credit test	UK +++ WG +
Methodology of Compiling Applications for Financing the Research	II	15	-	15	-	credit test	UW, UO, UU, KK +
Stylistics of Scholarly Publications in the English Language	II	10	-	-	10	credit test	UK +++ WG, UW +
Doctoral seminar in individual disciplines of science	II	5	-	5	-	credit test	UK, KK +++ WG, UW ++ WK, KR +
Total		98					

Practical vocational training	Total No. of hours	Course crediting form	Educational outcomes: P8S_
Teaching students – co-participation in teaching	60	credit test	UU +++ WG, UW, UK, UO, KK, KO, KR +

Additional requirements pursuant to the Law of Higher Education and Science Act and the Regulations of the Doctoral School:

- Appointment of the supervisor – within 3 months after the commencement of studies.
- Submission of the individual research plan – within 12 months after the commencement of studies.

YEAR: II - 2021/22

Course	Semester	Total No. of hours	Course form			Course crediting form	Educational outcomes: P8S_
			L	S	PT		
Law in Science	I	5	-	5	-	credit test	WK +++ UW ++ WG, KO, KR +
Philosophy of Science	I	10	10	-	-	credit test	WK ++ WG, UK, UO, KR +
History of Medicine and Pharmacy	I	10	10	-	-	credit test	WK, KR +
Methodology of Conducting Research, Scientific Discourse	I-II	15	-	15	-	credit test	WG, UW, UK, UO +++ KK ++ WK, , UU, KR +
Advanced Statistical Methods in Research	II	15	-	5	10	exam	WG, UW, UK +
Interdisciplinary Doctoral Seminar	II	15	-	15	-	credit test	UK, KK +++ WG, UW ++ WK, KR +
Total		70					

Practical vocational training	Total No. of hours	Course crediting form	Educational outcomes: P8S_
Teaching students	60 ¹⁾	credit test	UU +++ WG, UW, UK, UO, KK, KO, KR +

1) It is the recommended number of hours. On request from the doctoral student and on consent from the Director, FDS, it is possible to agree a different apportionment of the teaching hours over the years, provided that 180 hours are taught over the 3-year period of studies.

Additional requirements pursuant to the Law of Higher Education and Science Act and the Regulations of the Doctoral School: Doctoral student's mid-term assessment

YEAR: III - 2022/23

Course	Semester	Total No. of hours	Course form			Course crediting form	Educational outcomes: P8S_
			L	S	PT		
Intellectual Property Protection	I	5	-	5	-	credit test	WG, KR +++ WK, UW, UO, UU +
Commercialisation of Research Results	I-II	20	-	20	-	credit test	KO +++ WK ++ UW, KK +
Methodology of Conducting Research, Scientific Discourse	I-II	15	-	15	-	credit test	WG, UW, UK, UO +++ KK ++ WK, , UU, KR +
Doctoral Seminar in Individual Disciplines of Science	II	5	-	5	-	credit test	UK, KK +++ WG, UW ++ WK, KR +
Total		45					

Practical vocational training	Total No. of hours	Course crediting form	Educational outcomes: P8S_
Teaching students	60 ¹⁾²⁾	credit test	UU +++ WG, UW, UK, UO, KK, KO, KR +

1) It is the recommended number of hours. On request from the doctoral student and on consent from the Director, FDS, it is possible to agree a different apportionment of the teaching hours over the years, provided that 180 hours are taught over the 3-year period of studies.

2) Not applicable to doctoral students employed as the academic teaching staff members.

YEAR: IV - 2023/2024

Course	Semester	Total No. of hours	Course form			Course crediting form	Educational outcomes: P8S_
			L	S	PT		
Methodology of Conducting Research, Scientific Discourse	I-II	15	-	15	-	credit test	WG, UW, UK, UO +++ KK ++ WK, , UU, KR +
Interdisciplinary Doctoral Seminar	II	15	-	15	-	credit test	UK, KK +++ WG, UW ++ WK, KR +
Total		30					

Practical vocational training	Total No. of hours	Course crediting form	Educational outcomes: P8S_
Teaching students	60 ¹⁾²⁾	credit test	UU +++ WG, UW, UK, UO, KK, KO, KR +

- 1) It is the recommended number of hours. On request from the doctoral student and on consent from the Director, FDS, it is possible to agree a different apportionment of the teaching hours over the years, provided that 180 hours are taught over the 3-year period of studies.
- 2) Not applicable to doctoral students employed as the academic teaching staff members.

Additional requirements pursuant to the Law of Higher Education and Science Act and the Regulations of the Doctoral School: Submission of the doctoral dissertation, in accordance with the approved schedule.

II. COMPULSORY COURSE MODULE – INDIVIDUAL DISCIPLINES:

45 hours of compulsory courses specific for the discipline, spread over years I-III of studies.

1) DISCIPLINE OF MEDICAL SCIENCES

Course	Total No. of hours	Course form			Course crediting form	Educational outcomes: P8S_
		L	S	PT		
Foundations of Medicine *	15	-	15	-	credit test	WG +++ WK, UK ++ UW, KK, KR +
Rudiments of General Pathology *	15	-	15	-	credit test	WG +++ WK, UW, UK, KK +
Modern Therapies in Medicine **	15	-	15	-	credit test	WG, UW, KR ++ WK, UK, UO, UU, KK +
Translational Immunology **	15	-	15	-	credit test	WG, UW, KR ++ WK, UK, UO, UU, KK +
Rudiments of Biogerontology **	15	-	15	-	credit test	WG +++ WK ++
Modern Methods in Surgery **	15	-	15	-	credit test	WG ++ WK, UW, UK, UU, KK, KR +

*Compulsory courses for non-physician doctoral students of medical sciences.

**Compulsory courses to be selected by all doctoral students in the discipline of medical sciences.

2) DISCIPLINE OF PHARMACEUTICAL SCIENCES

Course	Total No. of hours	Course form			Course crediting form	Educational outcomes: P8S_
		L	S	PT		
Rudiments of Pharmacology *	15	-	15	-	credit test	UW ++ WG, UU, KK +
Tablets and Capsules – Preformulation Studies *	15	-	15	-	credit test	UW +++ WG, UU, KK, KO +
Chemometrics – Practical Application **	15	-	15	-	credit test	UW ++ WG, UU, KK, KO +
Validation of Analytical Methods **	15	-	15	-	credit test	UW ++ WG, UU, KK, KO +
Molecular Background of Diseases and Its Significance in Modern Therapy **	15	-	15	-	credit test	UW ++ WG, UU, KK +
Pharmacokinetics and Pharmacodynamics of Drugs – Modelling**	15	6	9	-	credit test	UW ++ WG, UU, KK +
Organic Chemistry of Biologically Active Compounds with Elements of Molecular Modelling**	15	-	15	-	credit test	UW ++ WG, UU, KK +
Overview of Scientific Papers **	15	-	15	-	credit test	WG, KK ++ WK, UW, UK, UO, UU +

* Compulsory courses for non-pharmacist doctoral students of pharmaceutical sciences.

** Compulsory courses to be selected by all doctoral students in the discipline of pharmaceutical sciences.

3) DISCIPLINE OF HEALTH SCIENCES

Course	Total No. of hours	Course form			Course crediting form	Educational outcomes: P8S_
		L	S	PT		
The English Language in Science *	15	-	-	15	credit test	UK +++
Statistics in Health Sciences *	15	-	-	15	credit test	WG, UW ++
Clinical Psychology *	15	-	15	-	credit test	WG, UU +
Economics in Medical Sciences *	15	-	15	-	credit test	UW, KO ++ WG, WK +

* Compulsory courses to be selected by all doctoral students in the discipline of health sciences.

III. ELECTIVE COURSE MODULE:

Students are obliged to take 60 hours of elective courses over the entire course of studies. The elective classes to be selected by the doctoral students include:

- 1) elective courses offered in Module III
- 2) courses of Module II in any discipline of science other than the discipline studied by the doctoral student
- 3) elective courses offered under POWER projects

SUMMARY OF HOURS:

	Compulsory courses		Elective courses (module III)	Practical training	Total*
	shared (module I)	Discipline-specific (module II)			
Year I	98	45	60	60	188
Year II	70			60	160
Year III	45			60	135
Year IV	30			0	60
Total	288		60	240	588

* To calculate the total number of hours in specific years, an even distribution of hours was assumed, as follows:

- 45 hours of compulsory courses for individual disciplines, i.e. 15 hours per year/ years I-III,
- 60 hours of elective courses, i.e. 15 hours per year/ years I-IV.

Attainment of the educational outcomes in individual courses:

Module I	P8S_WG	P8S_WK	P8S_UW	P8S_UK	P8S_UO	P8S_UU	P8S_KK	P8S_KO	P8S_KR
Bibliographic Aspects of Scientific Publications – year I	+		+	+					+
Ethics in Science – year I		++		+	+			+	+++
Philosophy of Science – year II	+	++		+	+				+
History of Medicine and Pharmacy – year II		+							+
Interdisciplinary Doctoral Seminar – years II and IV	++	+	++	+++			+++		+
Commercialisation of Research Results – year III		++	+				+	+++	
Methodology of Presentation and Dissemination of the Research Results – year I	+			+++					
Methodology of the Teaching Process and Psychology of Learning – year I	++	+	+	++	++	+	+	+	+
Methodology of Conducting Research, Scientific Discourse – years I-IV	+++	+	+++	+++	+++	+	++		+
Methodology of Compiling Applications for Financing the Research – year I			+		+	+	+		
Statistical Methods in Research – year I	+		+	+					
Intellectual Property Protection – year III	+++	+	+		+	+			+++
Law in Science – year II	+	+++	++					+	+
Doctoral Seminar in Individual Disciplines of Science – years I and III	++	+	++	+++			+++		+
Stylistics of Scholarly Publications in the English Language – year I	+		+	+++					
Advanced Statistical Methods in Research – year II	+		+	+					
Teaching students – years I-IV	+		+	+	+	+++	+	+	+

Module II MEDICAL SCIENCES	P8S_WG	P8S_WK	P8S_UW	P8S_UK	P8S_UO	P8S_UU	P8S_KK	P8S_KO	P8S_KR
Translational Immunology	++	+	++	+	+	+	+		++
Modern Methods in Surgery	++	+	+	+		+	+		+
Modern Therapies in Medicine	++	+	++	+	+	+	+		++
Rudiments of Biogerontology	+++	++							
Rudiments of General Pathology	+++	+	+	+			+		
Foundations of Medicine	+++	++	+	++			+		+

Module II PHARMACEUTICAL SCIENCES	P8S_WG	P8S_WK	P8S_UW	P8S_UK	P8S_UO	P8S_UU	P8S_KK	P8S_KO	P8S_KR
Organic Chemistry of Biologically Active Compounds with Elements of Molecular Modelling	+		++			+	+		
Chemometrics – Practical Application	+		++			+	+	+	
Pharmacokinetics and Pharmacodynamics of Drugs – Modelling	+		++			+	+		
Molecular Background of Diseases and Its Significance in Modern Therapy	+		++			+	+		
Rudiments of Pharmacology	+		++			+	+		
Overview of Scientific Papers	++	+	+	+	+	+	++		
Tablets and Capsules – Preformulation Studies	+		+++			+	+	+	
Validation of Analytical Methods	+		++			+	+	+	

Module II HEALTH SCIENCES	P8S_WG	P8S_WK	P8S_UW	P8S_UK	P8S_UO	P8S_UU	P8S_KK	P8S_KO	P8S_KR
Economics in Medical Sciences	+	+	++					++	
English Scientific Terminology				+++					
Clinical Psychology	+					+			
Statistics in Health Sciences	++		++						

Description of level two outcomes			
Category of the outcome description	Descriptive category Aspects of major significance	8 PRK	Outcome symbol
Knowledge: the student knows and understands	the scope, depth, and completeness of the cognitive perspective and interdependencies	<ul style="list-style-type: none"> to the degree enabling revision of the existing paradigms; the global output including the theoretical foundations, as well as general issues and selected specific issues typical for the given discipline of science; major developmental trends in the studied scientific discipline methodology of research the rules of disseminating the results of research activities, public access included 	P8S_WG
	the context, determinants, effects	<ul style="list-style-type: none"> the fundamental dilemmas of modern civilisation economic, legal, ethical, and other major determinants of research major principles of transferring knowledge to business and the society, and of commercialisation of the research results and the know-how related thereto 	P8S_WK
Skills: the student can	application of knowledge; the problems solved and tasks performed	<ul style="list-style-type: none"> use knowledge of different fields of science to creatively identify, formulate, and solve complex problems in an innovative way or perform tasks of research nature, and in particular: <ul style="list-style-type: none"> define the goal and subject matter of research, formulating the research hypothesis develop the research methods, techniques, and tools and apply them creatively draw conclusions from the research results perform critical analysis and assessment of the research results, expert reviews, and other works of creative nature, and of their contribution to the development of knowledge transfer the results of research to business and the society 	P8S_UW
	Communication; reception and creation of an utterance, dissemination of knowledge in the research circles, and use of a foreign language	<ul style="list-style-type: none"> discuss specialist topics to a degree enabling active participation in the international research circles disseminate the results of research, also in popular forms initiate a debate participate in scientific discourses use a foreign language at the level corresponding with level B2 of the Common European Framework of Reference for Languages to a degree enabling participation in international research and professional life 	P8S_UK
	work organisation and planning, team work	<ul style="list-style-type: none"> plan and carry out individual and team projects of research or creative nature, also in the international environment 	P8S_UO
	Learning; planning one's own and other people's development	<ul style="list-style-type: none"> independently plan own development and act to achieve it, as well as inspire and arrange the development of others plan classes or class groups and hold them using modern methods and tools 	P8S_UU
Social skills: the student is prepared to	assessment critical approach	<ul style="list-style-type: none"> carry out critical assessment of the output in a specific discipline of science carry out critical assessment of his/her own contribution to the development of the specific discipline of science recognise the significance of knowledge in solving cognitive and practical problems 	P8S_KK
	responsibility fulfillment of social obligations and taking actions in public interest	<ul style="list-style-type: none"> fulfil social obligations of researchers and creators initiate actions in public interest think and act in an entrepreneurial way 	P8S_KO
	Professional role independence and development of the ethos	<ul style="list-style-type: none"> maintain and develop the ethos of the research and creative circles, including: <ul style="list-style-type: none"> pursuing research independently respecting the rule of public ownership of the research results, taking into account the rules of intellectual property protection 	P8S_KR