

A COURSE SYLLABUS – DOCTORAL SCHOOL
REGARDING THE QUALIFICATION CYCLE FROM 2024/2025 TO 2027/2028

GENERAL INFORMATION ABOUT COURSE				
Course title	DOCTORAL LABORATORY			
Name of the unit running the course	Doctoral School at the University of Rzeszów			
Type of course (<i>obligatory, optional</i>)	obligatory subject			
Year and semester of studies	year I -IV, semester: I - VIII			
Discipline	Medical sciences			
Language of Course	Polish/English			
Name of Course coordinator	Dr David Aebisher, Professor at the University of Rzeszów			
Name of Course lecturer	Dr David Aebisher, Professor at the University of Rzeszów			
Prerequisites	A professional medical degree or advanced education in medicine – uniform master's degree programme. Knowledge of English enabling fluent reading of scientific texts and conducting scientific discussions in this language.			
BRIEF DESCRIPTION OF COURSE (100-200 words)				
<p>The aim of the Doctoral Workshop course is to prepare doctoral students to plan and carry out a research project that will form the basis for their doctoral thesis. As part of the course, doctoral students will acquire knowledge, skills and social competences in the field of preparing a literature review thematically consistent with the planned research in the scientific project. Next, they will formulate research hypotheses, on the basis of which a research project will be prepared. Scientific research will be conducted, the results will be compiled and, based on the available knowledge, an analysis of the obtained results will be performed. The obtained research results will be compared with the available works of experts. The material developed in this way will form the basis for an objective assessment of the student's own work.</p>				
COURSE LEARNING OUTCOMES AND METHODS OF EVALUATING LEARNING OUTCOMES				
Learning outcome	The description of the learning outcome defined for the course	Relation to the degree programme outcomes (symbol)	Learning Format (Lectures, classes,...)	Method of assessment of learning outcomes (e.g. test, oral exam, written exam, project,...)
Knowledge (no.)	knows and understands, has knowledge			
P8S_WG1	Has extensive theoretical knowledge in the field of medical science being studied and is familiar with general issues in related disciplines, is knowledgeable about current scientific achievements, including those worldwide, and understands the significance of its place in the scientific system in comparison with other fields.	P8S_WG	conversation	report
P8S_WG2	Knows the latest global trends in development and the latest discoveries in scientific research in the discipline of medical sciences and related sciences,	P8S_WG	conversation	report

	thematically related to the doctoral student's scientific research.			
P8S_WG3	Knows and communicates using specialist terminology in the discipline of medical sciences and related disciplines, in Polish and in a foreign language.	P8S_WG	conversation	report
P8S_WG4	Issues in the methodology of conducting scientific research in the chosen scientific discipline of medical sciences, knows the principles of planning and conducting scientific research, using interdisciplinary techniques and research tools.	P8S_WG	conversation	report
Skills (no.)	can			
P8S_UW1	Based on available knowledge in the fields of medical sciences and health sciences, they are able to identify and solve research problems, define research objectives, formulate hypotheses and research topics, develop research techniques, methods and tools, and draw conclusions based on the results of scientific research.	P8S_UW	conversation	report
P8S_UW2	The doctoral student is able to use the available global scientific literature to properly diagnose and solve research problems and innovative activities in connection with their scientific work, as well as apply the appropriate tools to create new elements of scientific output.	P8S_UW	conversation	report
P8S_UW3	The doctoral student is able to independently acquire knowledge, broaden analytical skills, and stimulate critical sensitivity to the recognition of dilemmas when conducting scientific research and performing the role of an academic teacher and social activist.	P8S_UW	conversation	report
Social competence (no.)	is ready to			
P8S_KK1	The doctoral student is prepared to face critical assessment of their achievements within their chosen scientific discipline: medical sciences, and critical evaluation of the contribution of	P8S_KK	conversation	report

	their own research to the development of this discipline.					
LEARNING FORMAT – NUMBER OF HOURS						
Semester (no.)	Lectures	Seminars	Lab classes	Internships	others	ECTS
I - VIII	-	8 x 15 hrs. – 120 hrs.	8 x 15 hrs. – 120 hrs.	-	-	24
METHODS OF INSTRUCTION						
<ul style="list-style-type: none"> - TRADITIONAL SEMINARS AND LABORATORIES; - CLASSES WITH MULTIMEDIA PRESENTATIONS; - PROJECTS; - DISCUSSIONS; - INTERPRETATION OF SOURCE TEXTS; - CONDUCTING EXPERIMENTS; - CONDUCTING RESEARCH; 						
COURSE CONTENT						
<p>Curriculum content covered in semesters I to VIII for the subject: Doctoral workshop, form of classes: laboratories/seminar</p> <ol style="list-style-type: none"> 1. Discussion of the principles of reliability and specificity of conducting scientific research in the field of medical sciences. 2. Selection of available literature on the subject of research. 3. Development of a general research plan relevant to the completion of a doctoral dissertation based on previously formulated research hypotheses and research objectives (general and specific objectives) 4. Implementation of research methods, techniques and tools for the effective implementation of the developed general research plan as part of the doctoral dissertation. 5. Conducting a pilot study. Discussion of the results of the pilot study. 6. Conducting scientific research related to the topic of the doctoral dissertation. 7. Analysis and interpretation of the obtained results. 8. Preparation of manuscripts of scientific articles based on the obtained research results. 9. Work on the preparation of individual chapters of the doctoral dissertation. 10. Preparation of a shortened multimedia presentation of the doctoral dissertation. 						
COURSE ASSESSMENT CRITERIA						
<p>The doctoral student's continuous work in each semester and academic year is assessed in terms of: literature studied, knowledge expansion, research implementation, commitment and progress in the preparation of the doctoral thesis. Possible semester grades are: 2.0, 3.0, 3.5, 4.0, 4.5, 5.0.</p> <p>Percentage requirements for the grading scale:</p> <ul style="list-style-type: none"> - up to 50% - unsatisfactory (the doctoral student is not making progress in scientific research, is not expanding their knowledge, is not studying the literature, is not participating in substantive discussions, is not fulfilling their scientific obligations); - 51% - 60% - satisfactory (the doctoral student makes negligible progress in scientific research, expands their knowledge, studies basic literature, the discussion is limited to a narrow range of substantive knowledge, fulfils basic scientific duties); - 61% - 70% - satisfactory plus (the doctoral student makes progress in scientific research, expands their knowledge, studies basic literature, participates substantively in discussions, fulfils their scientific duties); - 71% - 80% - good (the doctoral student makes significant progress in scientific research, expands their knowledge, studies basic and supplementary literature, participates substantively in discussions, fulfils all scientific duties); - 81% - 90% - good plus (the doctoral student makes significant progress in scientific research, systematically expands their knowledge, studies basic and supplementary literature, participates substantively in discussions, fulfils all scientific duties); 						

- 91% - 100% - very good (the doctoral student makes significant progress in scientific research, systematically expands their knowledge, studies basic, supplementary and advanced literature, participates substantively in discussions, fulfils all scientific duties);

TOTAL PhD STUDENT WORKLOAD REQUIRED TO ACHIEVE THE INTENDED LEARNING OUTCOMES – NUMBER OF HOURS AND ECTS CREDITS

Activity	Number of hours
Scheduled course contact hours	8 x 30 hrs. – 240 hrs.
Other contact hours involving the teacher (consultation hours, examinations)	10
Non-contact hours – student’s own work (preparation for classes or examinations, project, etc.)	470
Total number of hours	720
Total number of ECTS credits*	24

INSTRUCTIONAL MATERIALS

Compulsory literature:	<p>Medical databases (PubMed, Scopus, Web of Science)</p> <p>Photodynamic Therapy in Oncology by Ana Rita Barcessat Paperback Book, Nasza Wiedza Publishing House, 2024</p> <p>Combination Therapies Involving Photodynamic Therapy By Oluwatobi Samuel Oluwafemi, Sandile Phinda Songca , Wydawnictwo Royal Society of Chemistry ,2023</p>
Complementary literature:	<p>Michael R. Hamblin, Imaging in Photodynamic Therapy, Wydawnictwo Taylor & Francis Inc, luty 2017</p>

*(1 ECTS CREDIT CORRESPONDS TO 25 - 30 HOURS OF THE TOTAL WORKLOAD OF A DOCTORAL STUDENT, NEEDED TO ACHIEVE THE ESTABLISHED EFFECTS).

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Date and signature of the Course lecturer

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Approved by the Head of the Department or an authorised person