

**A COURSE SYLLABUS – DOCTORAL SCHOOL
REGARDING THE AUALIFICATION CYCLE FROM 2022 TO 2026**

GENERAL INFORMATION ABOUT THE COURSE				
Course title	Doctoral seminar			
Name of the unit running the course	Doctoral School at the University of Rzeszów			
Type of course (<i>obligatory, optional</i>)	obligatory			
Year/semester of studies	I-II / I-IV			
Discipline	Sciences			
Language of course	Polish			
Name of the course coordinator	Prof. dr hab. Andriy Sybirnyy			
Name of the coursw lecturer	Prof. dr hab. Andriy Sybirnyy Dr hab. Justyna Ruchała, prof. UR			
Prerequisites	The scope of knowledge resulting from the study program in the field of biological sciences, knowledge of English to the extent that allows the use of sources of knowledge, scientific information, skills and competences at level 7 of the Polish Qualifications Framework			
BRIEF DESCRIPTION OF COURSE (100-200 words)				
<p>The aim of the doctoral seminar is:</p> <ul style="list-style-type: none"> • preparation of the doctoral student to conduct scientific work in the subject of the doctoral project, which is carried out by shaping skills and competences in the field of: <ul style="list-style-type: none"> • formulating a research problem and the resulting hypotheses • determination of the scope of research, including through the selection of response methods, techniques and research tools • research planning • analysis of literature in the scope of the doctoral dissertation, as well as its critical analysis • preparation of a doctoral dissertation • creation of scientific works, including respect for intellectual property works • preparation of doctoral student to present the results of own research using modern IT tools • Preparedge doctoral student to develop scientific projects and submit research grant applications in appropriate calls. 				
LEARNING OUTCOMES FOR THE SUBJECT AND ASSESSMENT METHODS				
Learning outcome 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: Knows and understands				
EK_1	Theoretical basis of the topic of the doctoral thesis	P8S_WG1	seminar	Analysis of the literature on

	on the production of biofuels and high-value substances by unconventional yeast, understands the purposefulness of the topic and possible directions of research development in the field of biological sciences			the subject of the doctoral dissertation
EK_2	The latest achievements in the subject of the doctoral dissertation on the construction of manufacturers of antibiotics and valuable substances, including techniques, methods and research tools used to achieve the assumed research hypotheses	P8S_WG2	seminar	Development of research methodology
EK_3	Polish and English-language terminology used in the discipline of biological sciences, and also understands the need for its constant updating	P8S_WG3	seminar	Preparation of the oral presentation
Skills: Able to				
EK_4	Determine the purpose of research, as well as formulate hypotheses and, based on the results of own research, as well as through the analysis of scientific literature, correctly verify the level of own achievements in the field of production of antibiotics and high-value substances by yeast	P8S_UW1	seminar	Development of theoretical foundations as well as methodology of the doctoral thesis Preparation of the oral presentation Development of a scientific project
EK_5	Based on the latest literature on the subject, demonstrate the desirability of their	P8S_UW2	seminar	Development of an oral presentation

	research in the subject of their doctoral thesis on the production of antibiotics by yeast and propose their implementation			Development of a scientific project Preparation of a manuscript of a scientific article		
EK_6	Critically analyze the results of own research based on the available literature in the field of unconventional yeast biotechnology	P8S_UW3	seminar	Development of an oral presentation Development of a scientific project Preparation of a manuscript of a scientific article		
Social competence: Ready to						
EK_7	Critical analysis of their research achievements and confrontation of their research results with those obtained by other research groups in topics similar to their doctoral thesis	P8S_KK1	seminar	Development of an oral presentation Preparation of a manuscript of a scientific article		
EK_8	Systematic updating of one's knowledge by getting acquainted with the latest scientific literature in the subject of the doctoral thesis	P8S_KK3	seminar	Development of an oral presentation Preparation of a manuscript of a scientific article		
LEARNING FORMAT – NUMBER OF HOURS						
Semester (no.)	Lectures	Seminars	Lab classes	Internships	Other	ECTS
I-IV	-	-	-	-	60	8
METHODS OF INSTRUCTION						
<ul style="list-style-type: none"> • multimedia presentation • working with text • analysis of test results 						

- discussion
- research project

COURSE CONTENT

1. Analysis of available literature on the subject of the doctoral thesis
2. Determination of the purpose of research and hypotheses in the subject of the doctoral dissertation, including the general research plan
3. Planning the research methodology, as well as determining the techniques and tools thanks to which it will be possible to achieve the goals planned in the doctoral thesis
4. Analysis of the results of own research with a discussion based on the results presented in the available, latest scientific literature
5. Procedures for disseminating own research results – principles of scientific integrity
6. Review of available grant programs – discussion of the principles of preparing a scientific project

COURSE ASSESSMENT CRITERIA

I semester: Analysis of scientific literature in the subject of the doctoral dissertation, determination of the subject, goals and hypotheses of the doctoral thesis

II semester: Continuation of literature analysis, development of a detailed research plan, implementation of scientific research, analysis of own research results based on available scientific literature

III semester: Continuing the analysis of literature, carrying out scientific research, presenting the results of own research at a scientific conference, preparing and submitting a research project

IV semester: Continuing the analysis of literature, carrying out scientific research, presenting the results of own research at a scientific conference, preparing a manuscript of a scientific article

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	60
Other contact hours involving the teacher (consultation hours, examinations)	20
Non-contact hours – student`s own work (preparation for classes or examinations, project, etc.)	95
TOTAL NUMBER OF HOURS	175
TOTAL NUMBER OF ECTS CREDITS	8

INSTRUCTIONAL MATERIALS

Compulsory literature:	1. Databases of scientific publications
Complementary literature:	1. Databases of scientific publications