

**A COURSE SYLLABUS – DOCTORAL SCHOOL**  
REGARDING THE QUALIFICATION CYCLE FROM 2021 TO 2025

<b>GENERAL INFORMATION ABOUT COURSE</b>				
Course title	Doctoral seminar			
Name of the unit running the course	Doctoral School at University of Rzeszów			
Type of course ( <i>obligatory, optional</i> )	obligatory			
Year and semester of studies	I-IV/ sem. I-VIII			
Discipline	agriculture and horticulture			
Language of Course	Polish			
Name of Course coordinator	Dr hab. Jadwiga Stanek-Tarkowska, prof. UR			
Name of Course lecturer	Dr hab. Jadwiga Stanek-Tarkowska, prof. UR			
Prerequisites	Knowledge in the field of agricultural and horticultural sciences and soil biology, at the level of higher education (M.Sc.)			
<b>BRIEF DESCRIPTION OF COURSE</b> (100-200 words)				
<p>Types of scientific research (basic research, application research, development work) and institutions established to finance them. Principles of conducting scientific, observational and experimental research aimed at finding new solutions. Expanding knowledge related to the biological, chemical and physical properties of soil, acquiring the ability to independently perform soil analysis (its properties) and broadening the skills related to the determination of soil microorganisms (bacteria). Understanding the microbiological properties of soil under the influence of unconventional fertilization. Learning how to design an experiment and its conducting, taking samples and preparing them for analysis in the laboratory, analysis of the obtained results and their presentation in the form of: speeches at conferences, scientific articles. Learning to write projects (grants) in order to obtain external funds.</p>				
<b>COURSE LEARNING OUTCOMES AND METHODS OF EVALUATING LEARNING OUTCOMES</b>				
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,...)
<b>Knowledge (no.)</b>				
1	Basic concepts and processes taking place in the soil environment and what is their impact on plants and microorganisms	P8S-WG/1	Individual work with a PhD student	Project, Art. scientific, presentation at conference
2	Understands the need for interdisciplinary research, and in particular the development of agriculture and horticulture in the light of the latest research	P8S-WG/2	Individual work with a PhD student	Project, Art. scientific, presentation at conference
3	Knows the rules and understands the need to disseminate research, presentations at conferences and scientific publications as well as commercialize research, establish cooperation with the economic environment	P8S-WG/4 P8S-WK/3	Individual work with a PhD student	Project, Art. scientific, presentation at conference

4	Knows the methodology of scientific research in the discipline of agriculture and horticulture	P8S-WG/3	Individual work with a PhD student	Project, Art. scientific, presentation at conference		
<b>Skills (no.)</b>						
1	Can combine knowledge from various disciplines to conduct research, introduce research methods and techniques used in another discipline to his research	P8S-UW/1	Individual work with a PhD student	Project, Art. scientific, presentation at conference		
2	He can critically analyse the obtained research results, conduct discussions on specialist topics, actively participating in conferences, congresses and other public speeches. He can transfer his knowledge in a popular form and present the results	P8S-UW/3 P8S-UW/2 P8S-UK/1 P8S-UK/2	Individual work with a PhD student	Project, Art. scientific, presentation at conference		
3	Can initiate a discussion and actively participate in it	P8S-UK/3 P8S-UK/4	Individual work with a PhD student	Project, Art. scientific, presentation at conference		
4	Can independently plan for his own development and organize team research projects	P8S-UO P8S-UU/1	Individual work with a PhD student	Discussion		
<b>Social competence (no.)</b>						
1	Critical evaluation of own and other achievements within the discipline and the importance of these achievements in the development of this discipline	P8S-KK/1 P8S-KK/2 P8S-KK/3	Individual work with a PhD student	Project, Art. scientific, presentation at conference		
2	Recognition of intellectual property and publication fairness of research results. He is ready to thrive in the scientific community	P8S-KR	Individual work with a PhD student	Project, Art. scientific, presentation at conference		
<b>LEARNING FORMAT – NUMBER OF HOURS</b>						
Semester (no.)	Lectures	Seminars	Lab classes	Internships	others	ECTS
I-VIII	—	240	—	—	—	0
<b>METHODS OF INSTRUCTION</b>						
<p><i>E.G, LECTURE: A PROBLEM-SOLVING LECTURE/A LECTURE SUPPORTED BY A MULTIMEDIA PRESENTATION/ DISTANCE LEARNING CLASSES: TEXT ANALYSIS AND DISCUSSION/PROJECT WORK (RESEARCH PROJECT, IMPLEMENTATION PROJECT, PRACTICAL PROJECT)/ GROUP WORK (PROBLEM SOLVING, CASE STUDY, DISCUSSION)/DIDACTIC GAMES/ DISTANCE LEARNING LABORATORY CLASSES: DESIGNING AND CONDUCTING EXPERIMENTS)</i></p> <p>Individual work (in the lab, conducting classes together), work in a research group, discussion, presentation of results and their analysis.</p>						
<b>COURSE CONTENT</b>						

**1. Lectures/ Seminars:**

Become familiar with the research methodology in the discipline of agriculture and gardening,  
Learning to write scientific works and projects

**2. Seminars / Lab classes/ others:**

Working in the laboratory, learning about the latest research methodology

**COURSE ASSESSMENT CRITERIA**

Publication of 4 to 5 works from the JCR list, active participation in at least 4 foreign conferences.

Presentation of the doctoral dissertation on the basis of: 1. The cycle of art. scientific studies or monographs

**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	240
Other contact hours involving the teacher (consultation hours, examinations)	—
Non-contact hours – student`s own work (preparation for classes or examinations, project, etc.)	—
<b>Total number of hours</b>	—
<b>Total number of ECTS credits</b>	0

**INSTRUCTIONAL MATERIALS**

Compulsory literature:	<b>THE LATEST SCIENTIFIC ARTICLES ON RESEARCH IN THE FIELD OF AGRICULTURE, BIOLOGY AND BIOTECHNOLOGY</b>
Complementary literature:	