A COURSE SYLLABUS – DOCTORAL SCHOOL

REGARDING THE QUALIFICATION CYCLE FROM 2022 TO 2026

GENERAL INFORMATION ABOUT COURSE	
Course title	Doctoral laboratory
Name of the unit running the course	Doctoral School at University of Rzeszów
Type of course *(obligatory, optional)*	obligatory
Year and semester of studies	Year I - IV / semester I - VIII
Discipline	agriculture and horticulture
Language of Course	Polish
Name of Course coordinator	Dr hab. inż. Wacław Jarecki, prof. UR
Name of Course lecturer	Dr hab. inż. Wacław Jarecki, prof. UR
Prerequisites	Knowledge in the field of higher (master's) studies in the fields assigned to the scientific discipline of agriculture and horticulture.

BRIEF DESCRIPTION OF COURSE
(100-200 words)

The doctoral thesis is aimed at preparing the doctoral student to set up and conduct a three-year strict field or one-year pot experiment. Due to the peculiarities of agricultural science, the classes are carried out on an individual basis according to the program set by the supervisor. The course prepares for writing a doctoral dissertation, scientific articles and presenting research results at national and international conferences. The doctoral laboratory will prepare the doctoral student for active participation in the life of the scientific community, as well as to acquire the ability to conduct agricultural experiments. The doctoral laboratory will develop in the doctoral student the ability to communicate with specialists from different scientific disciplines. An important goal of the doctoral laboratory is to acquire knowledge and skills to help properly conduct laboratory analyses necessary for writing a doctoral dissertation.

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)**			
1	Knows and understands general issues concerning the field of agricultural science both nationally and internationally. Knows and understands selected specific issues concerning agriculture.	P8S-WG/1	Laboratories Conversatory	Activity in class, Participation in the discussion.
2	Recent discoveries in the field of agricultural sciences and the directions of their development, as well as the related current world scientific achievements.	P8S-WG/2	Laboratories Conversatory	Activity in class, Participation in the discussion. Report on the tests performed.
3	Concepts, nomenclature, definitions and industry vocabulary in the discipline	P8S-WG/3	Laboratories Conversatory	Participation in the discussion.

	of agriculture and horticulture, including foreign language.			Report on the tests performed.
4	Principles of setting up and conducting field and laboratory experiments. Methodology of agricultural scientific research using interdisciplinary research techniques and tools.	P8S-WG/4	Laboratories Conversatory	Activity in class. Report on the tests performed.
Skills (no.)	**(Able to)**			
1	Be able to define the purpose of scientific research and the research hypothesis. Select an appropriate experimental set-up that allows for subsequent statistical analysis and final inference.	P8S_UW/1	Laboratories Conversatory	Participation in the discussion. Report on the tests performed.
2	Compile and use current scientific literature to solve research problems and develop innovations in agriculture.	P8S_UW/2	Laboratories Conversatory	Activity in class, Report on the tests performed.
3	Critically evaluate available expert analyses, research results and other assessments of a scientific nature for contribution to the development and dissemination of agricultural knowledge.	P8S_UW/3	Laboratories Conversatory	Activity in class, Participation in the discussion.
Social competence (no.)	**(Ready to)**			
1	Is ready to critically evaluate achievements in the discipline of agriculture and horticulture and to compare national and world achievements.	P8S_KK1	Laboratories Conversatory	Activity in class, Participation in the discussion. Report on the tests performed.

LEARNING FORMAT – NUMBER OF HOURS

Semester (no.)	Lectures	Seminars	Lab classes/ conversatory	Internships	others	ECTS
I - VIII	-	-	240 hrs. – 8 x 30 hrs.	-	-	**24**

METHODS OF INSTRUCTION

Individual and team work in the laboratory, work in a research group, discussion, compilation of results and their analysis.

COURSE CONTENT
The scope of the curriculum content of the doctoral laboratory in the educational cycle includes practical aspects that support the progress of the doctoral student's scientific work. The topics and scope of the doctoral lab will especially include issues of how to acquire, process and elaborate data, as well as methods of interpreting the obtained results. Reports prepared by the doctoral student should include the general state of knowledge in the field of the dissertation problem and the results of own research. Then such sections as the purpose of the work, research hypothesis, material and methods, and statistical calculations will be specified. As a result, the first research results and their interpretation will be compiled. Reporting should include a preliminary discussion along with a literature list. The doctoral student will learn about the agricultural environment and contemporary rural and agricultural problems and identify their causes and effects. In the final stage, the doctoral student will become familiar with performing reviews of scientific papers and proofreading the text according to the comments of reviewers or editors in scoring journals. He or she will expand the ability to conduct scientific discussion and teamwork in solving difficult scientific problems in the agricultural industry.
COURSE ASSESSMENT CRITERIA
Credit for the grade will be calculated on the basis of the following criteria: activity in class, participation in discussion, and preparation of a report on the research done. At the same time it will be possible to get for: - activity in class - max 30%, - participation in discussion - max 30%, - report preparation - max 40%. Possible semester grades are: 2.0, 3.0, 3.5, 4.0, 4.5, 5.0. Scoring: up to 50% - ndst; 51-60% dst; 61-70% +dst; 71-80% db; 81-90% +db; 91-100% bdb

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 hrs. – 8 x 30 hrs.
Other contact hours involving the teacher (consultation hours, examinations)	-
Non-contact hours – student`s own work (preparation for classes or examinations, project, etc.)	480 hrs.
Total number of hours	720 hrs.
Total number of ECTS credits	24

INSTRUCTIONAL MATERIALS

Compulsory literature:	Kolman R., Poradnik dla doktorantów i habilitantów. Oficyna Wydawnicza Ośrodka Postępu Organizacyjnego. , Bydgoszcz, 2000. Apanowicz J. Metodologiczne uwarunkowania pracy naukowej : prace doktorskie, prace habilitacyjne. Warszawa : "Difin". 2005.
Complementary literature:	Stępień B. Zasady pisania tekstów naukowych : prace doktorskie i artykuły. Wydawnictwo Naukowe PWN. Warszawa. 2022. Hanusz Z., Tarasińska J. Statystyka matematyczna : wykłady i ćwiczenia dla studentów kierunków technicznych uczelni rolniczych. Wydawnictwo Akademii Rolniczej, Lublin 2006. Result brochures: COBORU in Słupia Wielka, IUNG-PIB in Puławy, PODR in Boguchwała Scientific publications in the field of agriculture and horticulture and related sciences

*(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