A COURSE SYLLABUS – DOCTORAL SCHOOL

REGARDING THE QUALIFICATION CYCLE FROM 2021 TO 2025

GENERAL INFORMATION ABOUT COURSE	
Course title	**Seminar**
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, II, III, IV / semester 1,2,3,4,5,6,7,8**
Discipline	**agriculture and horticulture**
Language of Course	**polish**
Name of Course coordinator	**Prof. dr hab. inż. Józef Gorzelany**
Name of Course lecturer	**Prof. dr hab. inż. Józef Gorzelany**
Prerequisites	**Knowledge of subjects according to the study programs of agricultural and horticultural studies**

BRIEF DESCRIPTION OF COURSE
(100-200 words)

Discussing the methods of obtaining scientific information and interpreting the latest scientific information from various sources, taking into account copyright and the way of using patent information resources during the preparation of a doctoral dissertation. Discussion of the possibilities of obtaining funds for the conducted research. Discussion of the possibilities of commercialization of research results in the field of agriculture and horticulture. Discussion of the methodology of preparing and writing a doctoral dissertation, taking into account the intellectual property and copyrights of the used scientific literature. The method of preparing a doctoral dissertation. Editing rules. Structure of chapters. Forms of footnotes. Methods of developing and presenting research results. Periodic reporting on the progress of the doctoral dissertation (review and updating of the literature). Statistical processing of research results and their graphical presentation. Anti-plagiarism system at the University of Rzeszów. Preparation for 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.)				
1	Student knows and understands the basic and specific issues related to agriculture and horticulture	**P8S-WG/1**	seminar	continuous observation during classes
2	Student has knowledge of the state and prospects for the development of agriculture and horticulture	**P8S-WG/2**	seminar	continuous observation during classes
3	Student knows and understands the methodology of scientific research	**P8S-WG/3**	seminar	oral presentation, continuous observation during classes
4	Student knows and understands the principles of disseminating scientific activity from agriculture and horticulture	**P8S-WG/4**	seminar	oral presentation, continuous observation

				during classes
5	Student knows and understands the principles of knowledge transfer to the economic and social area and the commercialization of research results from agriculture and horticulture	**P8S-WK/3**	seminar	oral presentation, continuous observation during classes
Skills (no.)				
1	Student can use the knowledge from the discipline of Agriculture and horticulture to creatively identify and innovative solutions to research problems (define the research goal and define the research hypothesis, develop research methods, techniques and tools, correctly draw conclusions from scientific research	**P8S-UW/1**	seminar	presentation, continuous observation during classes
2	Student can make a critical analysis and evaluation of the results of scientific research, expert activity and other creative works from agriculture and horticulture	**P8S-UW/2**	seminar	presentation, continuous observation during classes
3	Student can transfer the results of scientific activity to the economic and social area	**P8S-UW/3**	Seminar	presentation, continuous observation during classes
4	Student can communicate on specialist topics at national and international conferences	**P8S-UK/1**	Seminar	continuous observation during classes
5	Student can disseminate the results of scientific activity in popular forms	**P8S-UK/2**	Seminar	continuous observation during classes
6	Student can initiate a debate	**P8S-UK/3**	Seminar	continuous observation during classes
7	Student can participate in the scientific discourse	**P8S-UK/4**	Seminar	continuous observation during classes
8	Student can plan and implement individual and team national and international research projects	**P8S-UO**	Seminar	continuous observation during classes
9	Student can independently plan and work for his own development as well as inspire and organize the development of other people	**P8S-UU/1**	seminar	continuous observation during classes

Social competence (no.)				
1	Student is ready to critically evaluate the scientific achievements within the discipline of agriculture and horticulture	**P8S-KK/1**	seminar	continuous observation during classes
2	Student is ready to critically evaluate his own contribution to the development of agriculture and horticulture	**P8S-KK/2**	seminar	continuous observation during classes
3	Student is ready to recognize the importance of knowledge in solving cognitive and practical problems	**P8S-KK/3**	seminar	continuous observation during classes
4	Student is ready to sustain and develop the ethos of research and creative environments, including: -conduct scientific activities in an independent manner - respect the principle of public ownership of the results of scientific activity, taking into account the principles of intellectual property protection.	**P8S-KR**	seminar	continuous observation during classes

LEARNING FORMAT – NUMBER OF HOURS

Semester (no.)	Lectures	Seminars	Lab classes	Internships	others	ECTS
1		30				
2		30				
3		30				
4		30				
5		30				
6		30				
7		30				
8		30				

METHODS OF INSTRUCTION

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)

COURSE CONTENT

1. Lectures/ Seminars:

Semester No. 1.
Overview of the scope of research within the scope of the doctoral dissertation issues.
Discussion of field experiments planned for the 2021/2022 season as part of the research planned for the doctoral dissertation.
Discussion of research methods and familiarization with measuring equipment applicable in field and laboratory tests during the experiments.
Getting acquainted with statistical methods used in scientific research.
Development of an individual research plan (30 hours).

Semester No. 2.
Observation of assumed field experiments. Design and construction of the machine necessary for the tests. Application of specific concentrations of the active substance, carrying out tests during the vegetation period of plants. Selection of statistical methods for the correct development of research results. Principles of presentation of research results and statistical analyzes. (30 hours)

Semester No. 3.
Conducting laboratory analyzes of the raw material obtained from field experiments. Statistical analysis using the STATISTICA program and discussion of the research results. Presentation of the results. Discussion and assumption of field experiments planned for the 2022/2023 season as part of the planned research for the doctoral dissertation. (30 hours)

Semester No. 4.
Observation of assumed field experiments. Selection of the appropriate concentration based on the previous conclusions, carrying out research during the vegetation period of plants. Observation of the plant during the growing season. Analysis and discussion of the results. Presentation of the results.. (30 hours)

Semester No. 5.
Conducting laboratory analyzes of the raw material obtained from field experiments. Statistical analysis and discussion of research results. Presentation of the results. Discussion and assumption of field experiments planned for the season 2023/2024 as part of the planned research for the doctoral dissertation (30 hours)

Semester No. 6.
Observation of assumed field experiments. Analysis of previous results and determination of the concentration of the active substance, carrying out tests during the growing season of plants. Analysis and discussion of the results. Presentation of the results. (30 hours)

Semester No. 7 Conducting laboratory analyzes. Analysis, interpretation and discussion of previous years' results. (30 hours)

Semester 8. Correct inference of the obtained research results. Development of a scientific monograph. (30 hours)

2. Seminars / Lab classes/ others:

COURSE ASSESSMENT CRITERIA

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.)	150

Total number of hours	380
Total number of ECTS credits	

INSTRUCTIONAL MATERIALS	
Compulsory literature:	Literatura podstawowa: Mądry W. Planowanie doświadczeń czynnikowych i analiza wyników. Wyd. Fundacja "Rozwój SGGW", Warszawa. 1996. Mądry W. Doświadczenia czynnikowe. Wyd. Fundacja "Rozwój SGGW", Warszawa. 2009. Weiner J. Technika pisania i prezentowania przyrodniczych prac naukowych. PWN, Warszawa. 2009. Wołek J. Wprowadzenie do statystyki dla biologów. Wyd. Naukowe Akademii Pedagogicznej, Kraków. 2006. Wojciechowski R. Przewodnik metodyczny pisania pracy dyplomowej. Centrum Doradztwa i Informacji DIFIN 2010.
Complementary literature:	Literatura uzupełniająca: Rawa T. Metodyka wykonywania inżynierskich i magisterskich prac dyplomowych. Wyd. UWM w Olsztynie 2012 LITERATURA SPECJALISTYCZNA Z ZAKRESU PRZYGOTOWANIA PRACY DOKTORSKIEJ.