A COURSE SYLLABUS – DOCTORAL SCHOOL
REGARDING THE QUALIFICATION CYCLE FROM 2025/2026 TO 2028/2029

GENERAL INFORMATION ABOUT COURSE	
Course title	**RESEARCH METHODOLOGY**
Name of the unit running the course	Rzeszów University Doctoral School
Type of course *(obligatory, optional)*	*obligatory*
Year and semester of studies	First year/first semester
Discipline	Food and nutrition technology
Language of Course	Polish
Name of Course coordinator	**Dr hab. inż. Agata Znamirowska-Piotrowska prof. UR**
Name of Course instructor	**Dr hab. inż. Agata Znamirowska-Piotrowska prof. UR**
Prerequisites	Knowledge, skills and social competences related to scientific research methodology, achieved at level 7 of the Polish Qualifications Framework in the discipline of food technology and nutrition.

BRIEF DESCRIPTION OF COURSE	
(100-200 words)	

As part of the course: 'Research Methodology' , doctoral students will consolidate their knowledge, skills and social competences regarding the set of rules, procedures and techniques used in the scientific research process applied in the scientific discipline of food technology and nutrition. These include planning, conducting and analysing research with the aim of obtaining reliable and objective results. A key aspect in achieving this goal is the selection of appropriate research methods that will allow for an adequate solution to the research problem and confirmation or refutation of the hypotheses.

COURSE LEARNING OUTCOMES AND METHODS OF EVALUATING LEARNING OUTCOMES

Learning outcome	The description of the learning outcome defined for the course	Reference to learning outcomes for qualifications at Level 8 of the Polish Qualification Framework (PRK) (symbol)	Learning Format (Lectures, classes,…)	Method of assessment of learning outcomes (e.g. test, oral exam, written exam, project,…)
Knowledge: (no.)	*knows and understands*			
P8S_WG3	Knows, understands and applies specialist terminology used in the national and international scientific and professional environment in the scientific discipline of food technology and nutrition, in which scientific research is planned.	P8S_WG	seminar	Colloquium discussion, written examination
P8S_WG4	Has extensive knowledge of applied scientific research methodology in the field of food technology and	P8S_WG	seminar	Colloquium written examination

	nutrition, using interdisciplinary research tools and techniques to obtain the most reliable and objective research results.			
P8S_WK3	Has extensive knowledge of the possibilities of transferring the results of their scientific activity to the economic and social spheres.	P8S_WK	seminar	Colloquium written examination
Skills: (no.)	*is able to*			
P8S_UW1	Is able to use interdisciplinary knowledge to identify and practically solve research problems encountered by: defining the objective, subject and research hypothesis, creating innovative research methods, techniques and tools, and drawing conclusions based on the research results obtained.	P8S_UW	seminar	written assignments written examination
P8S_UK1	Actively participate in national and international scientific and professional communities, sharing the results of your research work .	P8S_UK	seminar	written papers/participation in conferences
P8S_UO1	Through active participation in the national and international research community, participate in individual and team research projects, performing various roles.	P8S_UO	seminar	written papers/participation in conferences
Social competence: (no.)	*is ready to*			
P8S_KR1	Strengthening and developing the ethos of research/ creative environments, including conducting scientific/artistic activities independently, taking into account the principles of intellectual property protection and public ownership of research results.	P8S_KR	seminar	participation in a conference/discussion

LEARNING FORMAT – NUMBER OF HOURS

Semester (no.)	Lectures	Seminars	Lab classes	Placements	other	ECTS
I	-	-	-	-	30	3
II	-	-	-	-	30	3
total	-	-	-	-	60	6

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)

- traditional seminar;
- seminar with multimedia presentation;
- presentation of results at a conference;
- discussion.

COURSE CONTENT

Course content:

Semester I:

Scientific databases and publications – current global achievements. Experience as a research method in agricultural sciences. Principles of sampling, observation and measurement in various populations (microorganisms, plants, animal and human populations). Classification of experiments according to various criteria: location and experimental unit, number of factors studied, experimental design (method of randomisation), repetition inlocation and seasons (series of experiments).

Semester II:

The essence and concept of measurement in scientific research. Cognitive and utilitarian goals in agricultural research, formulation of working (research) hypotheses.

Stages of research in particular methods. The concept and significance of statistical hypotheses at the research design stage. Basic concepts used in research methods. Examples of research projects. ANOVA analysis (single, two-factor, multi-factor). Correlation and regression analysis in the study of the relationship between characteristics/variables. Interpretation of results and drawing conclusions.

COURSE ASSESSMENT CRITERIA

The course is taught in semesters I and II. After semester I, the course ends with a ZO1 grade, and after semester II, it ends with an E2 examination. Classes are conducted in direct contact between the doctoral student and their supervisor.

In order to pass the course after semester I, students must pass a test.
In order to pass the written examination after semester II, students must obtain at least
51% of the points.

In order to obtain a positive grade, the following conversion table is used for the corresponding percentage of points obtained:
- up to 50% - unsatisfactory (the doctoral student is not making progress in scientific research, is not expanding their knowledge, is not studying the reading list, 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 and supplementary literature as well as literature beyond the required scope, participates substantively in discussions, fulfils all scientific obligations);

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

Activity	Number of hours
Scheduled course contact hours	**2 x 30 hours – 60 hours**
Other contact hours involving the instructor (duty hours, examinations)	**4**
Non-contact hours – student`s own work (preparation for classes or examinations, project, etc.)	**116 hours**
Total number of hours	**180**
Total number of ECTS credits	**6**

INSTRUCTIONAL MATERIALS

Compulsory literature:	Adam Grobler. Metodologia nauk . - Kraków : "Aureus" : "Znak", 2006. podstawowa: Koronacki Jacek, Jan Mielniczuk. Statystyka dla studentów kierunków technicznych i przyrodniczych/WNT, Warszwa 2001. Zygmunt Hajduk, Ogólna metodologia nauk. Katolicki Uniwersytet Lubelski Jana Pawła II. Wydział Filozofii. - Wyd. 6 uzup. - Lublin : Wydawnictwo KUL, 2012. Stanisz A. Przystępny kurs statystyki z zastosowaniem STATISTICA PL na przykładach medycyny. Tom 1-3. StatSoft, Kraków 2006
Complementary literature:	Dudziak A., Żejmo A.: Redagowanie prac dyplomowych: wskazówki metodyczne dla studentów. Difin, Warszawa 2008 Kozłowski R.: Praktyczny sposób pisania prac dyplomowych: z wykorzystaniem programu komputerowego i Internetu. Warszawa, Oficyna a Wolters Kluwer business 2009

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Date and signature of the Course instructor

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Approved by the Head of the Department or an authorised person