A COURSE SYLLABUS – DOCTORAL SCHOOL

REGARDING THE QUALIFICATION CYCLE FROM 2024/2025 TO 2027/2028

GENERAL INFORMATION ABOUT COURSE	
Course title	**DOCTORAL SEMINAR**
Name of the unit running the course	Doctoral School at the University of Rzeszów
Type of course *(obligatory, optional)*	Obligatory
Year and semester of studies	semesters from I to VII, education cycle from 2024 to 2028
Discipline	**food and nutrition technology**
Language of Course	Polish
Name of Course coordinator	**prof. dr hab. Izabela Sadowska-Bartosz**
Name of Course lecturer	**prof. dr hab. Izabela Sadowska-Bartosz**
Prerequisites	Knowledge of food biochemistry, biophysics, technology food.

BRIEF DESCRIPTION OF COURSE
(100-200 words)

The doctoral seminar is aimed at preparing the student to solve research problems independently, to edit scientific manuscripts, or to write an autoreference for a doctoral thesis, which shall be connected with acquiring the ability to critically evaluate the results of one's own research against the background of the available professional literature (thorough analysis of English-language scientific articles of international scope). Moreover, the doctoral seminar should prepare the doctoral student to formulate research hypotheses, to perceive and verbalise scientific problems. The specific aim is: to acquire the ability to conduct a scientific discussion, to raise the level of inference in the chosen scientific field, to develop the ability to communicate with scientists from outside the discipline, to acquire the knowledge, skills and competences necessary for the proper preparation of a self-dissertation consisting of scientific publications. The aim of the seminar is also to convince the doctoral student of the importance of applying for external funding in order to finance their own research ideas.

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)**			
P8S_WG1	a broad theoretical knowledge and the current scientific achievements, including the world achievements in the area of food and nutrition technology, as well as general issues from the area of related disciplines, he/she has the knowledge of its place in the system of science, which makes it possible to determine its importance in confrontation with other disciplines;	P8S_WG	seminar	oral statement, discussion
P8S_WG2	directions of scientific research development and the latest discoveries, including of worldwide range in the scientific discipline studied - food and nutrition technology;	P8S_WG	seminar	oral statement, discussion

P8S_WG3	he/she knows, understands and is able to use professional terms used in food and nutrition technology in the domestic and foreign language;	P8S_WG	seminar	oral statement, discussion
Skills (no.)	**(Able to)**			
P8S_UW1	solve a scientific research problem, define a goal, formulate a hypothesis and a subject of scientific research, improve techniques, methods and research tools and make conclusions on the basis of research results, on the basis of possessed knowledge from various scientific disciplines (among others food and nutrition technology, biotechnology);	P8S_UW	seminar	oral statement, discussion
P8S_UW2	select and use scientific literature to diagnose and solve research problems and innovative actions in their research work, and to apply appropriate skills in order to create new elements of scientific output;	P8S_UW	seminar	oral statement, discussion
P8S_UW3	use their knowledge to analyse and evaluate the results of scientific research, forming an opinion, including critical judgements, on this basis;	P8S_UW	seminar	oral statement, discussion
P8S_UK6	speak in public to present the results of scientific research and to participate in a discussion on scientific and professional topics in an international environment, using English at the B2 level of the Common European Framework of Reference for Languages;	P8S_UK	seminar	oral statement, discussion
Social competence (no.)	**(Ready to)**			
P8S_KK1	to critically appraise the achievements within food and nutrition technology and to critically evaluate the contribution of the results of his/her own research activity to the development of the discipline;	P8S_KK	seminar	oral statement, discussion
P8S_KK3	solves cognitive and practical problems with the help of his/her knowledge.	P8S_KK	seminar	oral statement, discussion

LEARNING FORMAT – NUMBER OF HOURS

Semester (no.)	Lectures	Seminars	Lab classes	Internships	others	ECTS
I - VII	**-**	**-**	**-**	**-**	**7 x 15 hrs. – 105 hrs.**	**14 ECTS**

METHODS OF INSTRUCTION

- scientific discussion,
- study of scientific literature,
- multimedia presentation,
- preparation and presentation of the research objective , research methods, research results,
- coursework,
- progress towards a doctoral dissertation

COURSE CONTENT

Seminar:

semester I

Topic : Regulations of the UR Doctoral School, doctoral training system.
Topic : Definition of the topic of the doctoral thesis, the subject and objectives of own research.
Topic: Analysis of the most recent discoveries in the scientific discipline, current scientific output, including world output, in the field of research in the area of food technology and nutrition.
Topic: Analysis of the literature on the topic of the dissertation using the available databases of publications, e.g. PubMed - selection of the most relevant English-language articles. and development of the theoretical outline of the dissertation.

Semester II

Topic : Development of an outline of the dissertation concept (problems and hypotheses).
Topic : Discussion of the methodology for the graphical and statistical elaboration of the results.
Topic : Substantive preparation for the practical conduct of the research.
Topic: Optimisation of the choice of research methodology to carry out research in pursuit of the dissertation topic.
Topic: Substantive preparation for practical implementation of pilot studies.
Topic: Analysis of pilot self-study results with discussion.
Topic : Validation of the methodology for developing research results.

Semester III

Topic : Principles of scientific writing, preparation of scientific publications....
Topic : Possible causes of falsification of experimental results.
Topic : Presentation of own research - multimedia presentation with scientific discussion in English.
Topic : Topic: Introduction to programmes allowing application for external sources of funds for financing research/internships for PhD students in the area of food and nutrition technology.

semester IV

Topic: Critical analysis of the prepared manuscript with own research results - theoretical part.
Topic: Critical analysis of the prepared manuscript with own research results - discussion of results.
Topic: Discussion on the selection of an apt scientific journal to which to submit the manuscript. Advantages of publishing papers in open access journals.
Topic : Principles of reviewing scientific papers using selected journals in the area of food technology and nutrition as an example.

Semester V

Topic : Criteria for assessing the quality of a dissertation.
Topic: Discussion and discussion of individual parts of the Self-reference of the doctoral dissertation consisting of a series of scientific publications.
Topic : Analysis of own research results - graphical and statistical elaboration with their adequate interpretation.
Topic : Critical analysis of prepared manuscript with own research results - theoretical part with discussion of results.

Semester VI

Topic : Criteria for assessing the quality of the dissertation.
Topic : Discussion and discussion of the different parts of the Autoreference of the doctoral dissertation consisting of a series of scientific publications.
Topic : Analysis of own research results - graphical and statistical elaboration with their adequate interpretation.
Topic: Critical analysis of the prepared manuscript with own research results - theoretical part together with discussion of the results.

Semester VII
Topic: Principles of initiation of doctoral proceedings .
Topic: Discussion of the correctness/errors in the interpretation of the results presented in the Doctoral Dissertation Self-Reference….
Topic: Presentation of own research results comprising the dissertation - multimedia presentation with scientific discussion.

COURSE ASSESSMENT CRITERIA

Credit after each semester based on coursework (multimedia presentations), discussion and class activity. Possible semester grades are: 2.0, 3.0, 3.5, 4.0, 4.5, 5.0.

In order to obtain a pass grade, a conversion factor is applied for the corresponding percentage of points obtained:
- **up to 50% - insufficient**, (the doctoral student does not make progress in scientific research, does not expand knowledge,
does not study the readings, does not participate in substantive discussion, does not fulfil scientific obligations);
- 51% - 60% - satisfactory, (the doctoral student makes negligible progress in scientific research, expands the knowledge, studies basic literature, the discussion is limited to a narrow range of substantive knowledge, meets basic scientific obligations);
- 61% - 70% - satisfactory plus, (the doctoral student makes progress in scientific research, broadens knowledge, studies primary literature, substantive participation in the discussion , meets his/her scientific obligations);
- 71% - 80% - good, (the doctoral student makes significant progress in scientific research, broadens knowledge, studies
primary and supplementary literature, substantively participates in discussions, fulfils all scientific duties);
- **81% - 90% - good plus**, (the doctoral student makes significant progress in scientific research, systematically extends knowledge, studies primary and supplementary literature, substantively participates in discussion, meets all scientific obligations);
- **91% - 100% - very good** (doctoral student makes significant progress in scientific research, systematically extends knowledge, studies basic, complementary and beyond obligatory literature, substantively participates in discussion, meets all scientific obligations).

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	**7 x 15 hrs. – 105 hrs.**
Other contact hours involving the teacher (consultation hours, examinations)	**6**
Non-contact hours – student`s own work (preparation for classes or examinations, project, etc.)	**309**
Total number of hours	**420**
Total number of ECTS credits*	**14**

INSTRUCTIONAL MATERIALS

Compulsory literature:	- M. Mitek, M. Słowiński (red). Wybrane zagadnienia z technologii żywności. SGGW 2006. - T. Fortuna, D. Gałkowska, S. Pietrzyk, J. Rożnowski, R. Socha. Wybrane zagadnienia z chemii żywności. Wydawnictwo Uniwersytetu Rolniczego w Krakowie, 2012

	- M. Bączkowicz, T. Fortuna, L. Juszczak, J. Sobolewska-Zielińska. Podstawy analizy i oceny jakości żywności. Wydawnictwo Uniwersytetu Rolniczego w Krakowie, 2012 - Food Oxidants and Antioxidants: Chemical Biological and Functional Properties. Edited by G. Bartosz. Taylor & Francis Group, 2016
Complementary literature:	- January Weiner: Technika pisania i prezentowania przyrodniczych prac naukowych. Wydawnictwo Naukowe PWN, 2018 - Seals DR, Tanaka H. Manuscript peer review: a helpful checklist for students and novice referees. Adv Physiol Educ. 2000 Jun; 23(1):52-8. PubMed PMID: 10902527. - Blackwell, J. 2011. A Scientific Approach to Scientific Writing, Springer, New York [electronic resource]. - Scientific journals in Polish and foreign languages in the fields of food technology and human nutrition, food analysis and biotechnology.

*(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