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	Doctoral School of the University of Rzeszów
Type of course *(obligatory, optional)*	compulsory
Year and semester of studies	First year/First and second semester
Discipline	**Medical sciences**
Language of Course	Polish language
Name of Course coordinator	**Marta Kopańska, PhD, Professor at the University of Rzeszów**
Name of Course lecturer	**Marta Kopańska, PhD, Professor at the University of Rzeszów**
Prerequisites	Knowledge, skills and social competences related to the methodology of conducting scientific research, achieved at level 7 of the Polish Qualifications Framework in the discipline of medical sciences.

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 medical sciences. 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	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, has knowledge			
P8S_WG/3	Knows, understands and uses specialist terminology used in the national and international scientific and professional environment in the scientific discipline of medical sciences, in which scientific research is planned.	**P8S_WG**	Conversatory	discussion,
P8S_WG/4	Has extensive knowledge of the applied research methodology in the discipline of medical sciences, using interdisciplinary research tools and techniques to obtain the most reliable and objective research results.	**P8S_WG**	Conversatory	written assignments (presentation)
P8S_WK/3	Has extensive knowledge of the possibilities of transferring the results of their scientific activity to the economic and social spheres.	**P8S_WK**	Conversatory	discussion,

Skills (no.)	can			
P8S_UW/1	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**	Conversatory	discussion,
P8S_UK/1	Actively participate in national and international scientific and professional communities, sharing the results of their research work.	**P8S_UK**	Conversatory	Oral statement, draft
P8S_UO/1	Through active participation in national and international research communities, participate in individual and team scientific projects, performing various roles.	**P8S_UO**	Conversatory	project
Social competence (no.)	is ready to			
P8S_KR1	Strengthen and develop the ethos of research communities, including conducting scientific activities independently, taking into account the principles of intellectual property protection and the principles of public ownership of research results.	**P8S_KR**	Conversatory	project, discussion

Semester (no.)	Lectures	seminar	Conversatory / Lab classes	Internships	others	ECTS
I	-	-	-	-	30	3
II	-	-	-	-	30	3
total:	-	-	-	-	60	6

METHODS OF INSTRUCTION

- TRADITIONAL SEMINAR;
- SEMINAR WITH MULTIMEDIA PRESENTATION;
- PROJECT;
- DISCUSSION.

COURSE CONTENT

Semester I:

- Fundamentals of research methodology in medical sciences.

- Formulating research problems, objectives and hypotheses.

- Methods and techniques of scientific research: selection of research tools, literature analysis.

Semester II:

- Designing scientific research and ethical aspects of research involving humans.

- Methods of data analysis and interpretation of scientific research results.

- Preparation of scientific publications and presentation of research results.

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 the supervisor or assistant supervisor.

In order to pass the course after semester I, a report on the completion of the task must be submitted.
In order to pass the course exam after semester II, at least
51% of the points from the written work must be obtained.

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 literature, 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 obligations);
- 91% - 100% - very good (the doctoral student makes significant progress in scientific research, systematically expands their knowledge, studies basic, supplementary and advanced literature, participates substantively in discussions, fulfils 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	**2 x 30 hrs. – 60 hrs.**
Other contact hours involving the teacher (consultation hours, examinations)	**4**
Non-contact hours – student`s own work (preparation for classes or examinations, project, etc.)	**116 hrs**
Total number of hours	**180**
Total number of ECTS credits	**6**

INSTRUCTIONAL MATERIALS

Compulsory literature:	1. Babbie, E. (2013). Podstawy badań społecznych. Warszawa: PWN. 2. Brzeziński, J. (2023). Metodologia badań psychologicznych. Warszawa: PWN.
Complementary literature:	1. Kopańska, M. i Trojniak, J. (2025). Od aberracyjnych fal mózgowych do zmienionej plastyczności: przegląd biomarkerów QEEG i neurofeedbacku w neurobiologicznym krajobrazie ADHD. Cells , 14 (17), 1339. https://doi.org/10.3390/cells14171339 2. Kopańska, M., Ochojska, D. B., & Dejnowicz-Velitchkov, A. (2021). Diagnosing ADHD

	using QEEG and planning EEG-biofeedback (Neurofeedback) therapy – pilot studies. Medycyna Ogólna i Nauki o Zdrowiu, 27(2), 205–212. https://doi.org/10.26444/monz/131993 3. Kopańska, M., Ochojska, D., Sarzyńska, I., Trojniak, J., Banaś-Ząbczyk, A., Szczygielski J. (2025). The Use of Quantitative Electroencephalography (Eyes Closed)to Assess the Effectiveness of Neurofeedback in Therapy in Children with Mild Autism Spectrumdisorders that Reveal Attention Deficit Disorders Acta Neuropsychologica, 23(1), 27-46. https://doi:10.5604/01.3001.0054.9911 4. Kopańska, M., Ochojska, D., Sarzyńska, I., Bartkowska, O., & Szczygielski, J. (2025). Quantitative and qualitative electroencephalography in the diagnosis and monitoring of depression. A modern approach to clinical neurophysiology. Frontiers in human neuroscience, 19, 1624434. https://doi.org/10.3389/fnhum.2025.1624434 5. Kopańska, M., Ochojska, D., Sarzyńska, I., Trojniak, J., & Szczygielski, J. (2025). Exploratory quantitative EEG characteristics in children with autism spectrum disorder. Frontiers in psychiatry, 16, 1689000. https://doi.org/10.3389/fpsyt.2025.1689000 6. Kopańska, M., Ochojska, D., Trojniak, J., Sarzynska, I., & Szczygielski, J. (2024). The role of quantitative electroencephalography in diagnostic workup of mental disorders. Journal of physiology and pharmacology : an official journal of the Polish Physiological Society, 75(4), 10.26402/jpp.2024.4.02. https://doi.org/10.26402/jpp.2024.4.02 7. Kopańska, M., Rydzik, Ł., Błajda, J., Sarzyńska, I., Jachymek, K., Pałka, T., Ambroży, T., & Szczygielski, J. (2023). The Use of Quantitative Electroencephalography (QEEG) to Assess Post-COVID-19 Concentration Disorders in Professional Pilots: An Initial Concept. Brain Sciences, 13(9), 1264. https://doi.org/10.3390/brainsci13091264

*(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