

Curriculum

Doctoral School in the discipline of physical culture science at the Poznan University of Physical Education

In accordance with Senate Resolution No. 134/2019 of May 21, 2019

Aim of the doctoral training: To provide young academics, which are doctoral students, with the necessary tools (knowledge, skills and social competencies) needed to conduct high-level scientific research, culminating in a doctoral dissertation in the discipline of physical culture science.

Teaching subject	Total hours	Semester							
		1	2	3	4	5	6	7	8
Conducting scientific research*	<i>In accordance with the Regulations of the Doctoral School and the Individual Research Plan</i>								
Conceptual apparatus of physical culture sciences	30	30							
Philosophy and ethics of science	30		30						
Methodology of scientific work	40	20	20						
Statistical methods in scientific research	40	20	20						
Formal aspects of practicing science									
<i>information day</i>	6	6							
<i>use of literature databases</i>	6	6							
<i>application to the bioethics committee</i>	4	4							
<i>lists of scientific journals, bibliometric measures</i>	4	4							
<i>publication process (peer-reviewed journals), rules for determining co-authorship of scientific papers, the phenomenon of predatory publishers/journals</i>	15		15						
<i>funding in science (institutions)</i>	6	6							
<i>preparing grant application</i>	6	6							
<i>managing research project</i>	6		6						
<i>leading the research team, cooperation</i>	6		6						
<i>research commercialization, entrepreneurship</i>	6		6						
<i>presentation and self-presentation workshops</i>	6	6							
Pedagogy	15			15					
English (specialized)	100	25	25	25	25				
Journal club	24	3	3	3	3	3	3	3	3
Any activity of one's choice, related to the doctorate	<i>No limits</i>								
Semester seminar	56	8	8	8		8	8	8	8
Mid-term seminar with the participation of the evaluation commission (as part of the mid-term					8				
Professional practice: teaching students**	240	30	30	30	30	30	30	30	30
Total	646	174	169	81	66	41	41	41	41

* certified by the supervisor in an annual written opinion

** summarized on an annual basis

Description of activities/courses

Conducting scientific research (no limit)

Research is carried out under the guidance of the supervisor, according to the schedule outlined in the PhD student's Individual Research Plan. This is the most important and overriding activity of the doctoral student, which is the essence of training at the Doctoral School, supported by the knowledge and skills acquired during the activities described below.

Conceptual apparatus of physical culture sciences (30 hrs.)

The purpose is to familiarize the doctoral student with the basic terminology used in the physical culture sciences to describe the issues that occur there and to determine their meaning and practical implications. The aim is also to improve the ability to analyze the text, draw conclusions, freely formulate thoughts and express themselves on issues in the area of physical culture. In the form of lectures and exercises (working with the text), the following concepts will be discussed: physical culture, physical culture sciences, health sciences, physical education, sport, physiotherapy, physical recreation, tourism, physical activity, measurement of physical activity, human motor skills, physical fitness, measurement of physical fitness, physical fitness norms.

Philosophy and ethics of science (30 hrs.)

The purpose of the course is to familiarize doctoral students with the issues of philosophy of science and ethics of science in their core areas. The knowledge acquired is intended to help form a view of the role of science, scientific research and ethical attitudes that determine the moral standards of scientific work and good practices in scientific research. Based on the lectured content, the doctoral student has the opportunity to acquire the ability to identify dilemmas in the philosophy of science and ethics and solve them, and, above all, to think critically in approaching the key theses and assumptions of the existing research trends in the philosophy of science, without giving up value-laden (ethical) references to the interpreted socio-cultural reality in science

Methodology of scientific work (40 hrs.)

The main goal of the course is for the doctoral student to acquire the basic knowledge and skills to effectively plan and conduct scientific research of an empirical nature in the area of physical culture science. The following issues are realized in more detail: scientific knowledge vs. common knowledge, the place of physical culture science in the classification of sciences, characteristics of the stages of the research process, characteristics of the research problem, classification of research problems, research problems in physical culture sciences, formulation and classification of research hypotheses in physical culture sciences, the concept and classification of variables and indicators, characteristics of basic research models (correlational vs. experimental model in physical culture sciences), the issue of sample selection, principles of constructing questionnaires, planning and creating a research project in the area of physical culture science.

Statistical methods in scientific research (40 hrs.)

The main goal of the course is for the doctoral student to master the basic knowledge and skills in statistics to enable effective data analysis in the area of physical culture science. Topics covered include: descriptive statistics, statistical hypothesis verification, basic parametric and non-parametric tests for significance of differences (independent and dependent data), basic measures of the strength of relationships between variables, introduction to medium-level techniques - multiple regression analysis (including stepwise and backward predictor selection), logistic regression, multivariate analysis of variance, discriminant analysis, canonical analysis, cluster analysis, factor analysis. The issue of effect size, sample size determination based on statistical test power analysis.

Formal aspects of practicing science (71 hrs. in total)

- **information day** (6 hrs.) - completion of formalities related to admission as a doctoral student, visiting the laboratories of the University;
- **use of literature databases** (6 hrs.) - review of scientific literature databases available at the University, principles/techniques of rational, accurate and efficient search and acquisition of specialized scientific literature (articles, textbooks);
- **application to the bioethics committee** (4 hrs.) - principles of conducting scientific research involving humans in light of the Declaration of Helsinki, principles of conducting scientific research involving animals in light of the requirements of the National Ethical Committee for Animal Experiments, discussion of the applicable rules for applying to the local bioethics/ethics committee for animal experiments, necessary documentation, completing the application in practice;
- **lists of scientific journals, bibliometric measures** (4 hrs.) - official list of scientific journals of the Ministry of Education and Science, internationally recognized lists of journals (Journal Citation Reports, Scopus etc.), evaluation of journals and scientists (ministerial score, impact factor, h-index, number of citations/self-citations, etc.);
- **publication process** (peer-reviewed journals) (15 hrs.) - practical information on submitting an article to a peer-reviewed scientific journal, discussion and practice of the formal steps of submitting an article manuscript for review, the phenomenon of predatory publishers/journals, rules for determining co-authorship of scientific papers;
- **funding in science** (institutions) (6 hrs.) - information on institutions and ways of obtaining funds for scientific research (projects), selection of institutions adequate to the research specialty, practical tips;
- **preparing grant application** (6 hrs.) - practical tips and exercises related to filling out grant applications;
- **managing research project** (6 hrs.) - principles of managing one's own research project;
- **leading the research team, cooperation** (6 hrs.) - preparation for working in a research team, principles of cooperation;
- **research commercialization, entrepreneurship** (6 hrs.) - opportunities for commercialization of scientific research;
- **presentation and self-presentation workshops** (6 hrs.) - developing the ability to create public presentations from the perspective of self-presentation behavior to reflect the intended objectives in specific scientific and teaching situations. The profession of academic teaching requires, among other things, an awareness of the social influence we exert on each other in our relations with students and colleagues. Workshop classes are designed to develop the reflection of doctoral students in relation to various ways of creating public images (classes with students, seminars, scientific conferences). Doctoral students will analyze motives, selected strategies and styles of self-presentation and discuss excerpts from their own presentations

Pedeutology (15 hrs.)

The purpose of the course is to familiarize doctoral students with the elements constituting teacher professionalism, especially with the scope of constantly updated knowledge, skills, attitudes. Together with doctoral students, the stages of professional development of teachers (entering the professional role, full adaptation to the role, its creative transcending) are discussed. Doctoral students reflect on the phases of self-development carried out by analyzing their own practice in confrontation with others, testing their own ideas in research. The classes are designed to develop the reflection and dialogical way of being of doctoral students and stimulate lifelong learning that develops teacher professionalism.

English (specialized) (100 hrs.)

To improve practical English language skills at a level that allows for use in scientific work, including study of professional literature, preparation of a scientific article for publication, preparation and giving scientific lecture, undertaking scientific discussion in one's specialty, or use in other situations related to scientific activities.

Journal club (24 hrs.)

A variety of scientific reports and problems identified by doctoral students or the lecturer are discussed during the class in the form of a conversation. The discussion is held only and exclusively in English in order to strengthen the ability to use professional vocabulary freely.

Any activity of one's choice (no limit)

As part of the didactic offer of the University, doctoral students have the right to take any elective classes at the first/second degree or single master's degree programs in order to broaden and deepen the knowledge or skills necessary for the doctoral project.

Semester seminar (58 hrs.)

The purpose is to present the current status and progress of his/her own research problem planned in the dissertation and to support doctoral students through a professional, critical and friendly discussion among researchers of different specialties and all doctoral students of the Doctoral School. Seminar organized in an open format with the participation of interested or invited persons from the University and outside the University.

Mid-term seminar and evaluation (8 hrs.)

The seminar is the open part of the mid-term evaluation of the Individual Research Plan (IRP) of the doctoral student at the end of the fourth semester of training. The purpose is to present the completed research activities planned in the IRP schedule - before a committee appointed by the Scientific Board of the University. The seminar has an open form, i.e., in addition to the committee, it can be attended by all interested and invited persons from the University and outside the University.

Professional practice: teaching students (240 hrs.)

Doctoral students conduct teaching classes with students as lecturers or assist in such classes. The purpose is to familiarize them with the specifics of teaching work in a higher education institution in terms of content, organization and pedagogy. A doctoral student selects or is referred to classes in accordance with his/her professional competence, educational profile and the needs of the University.

Social competencies (not directly included in the curriculum).

It is assumed that in the course of research, compulsory and extra-curricular activities, the doctoral student indirectly acquires or reinforces the following competencies:

- demonstrates a high ethical and intellectual level;
- promotes the need for continuous improvement of knowledge and qualifications in the field of physical culture science;
- shows initiative in identifying new research directions and forming teams for their implementation;
- demonstrates criticism of his own and others' achievements in scientific work, striving to improve its quality and increase its effectiveness;
- demonstrates innovation and commitment in his professional work. He/she is an authority in his/her specialty;
- is responsible for work safety and is able to take care of organizing safe working conditions for a team;
- is prepared to work in a research team;
- shows initiative in establishing national and international scientific contacts;
- competently evaluates the results of research work in the field of physical culture science including ethical and social aspects.