załącznik nr 2 do uchwały Rady Szkoły Doktorskiej UPP nr 1/P/2023

SYLLABUS – PULS Doctoral School

Name of the course (as specified in the approved program): **Animal models in scientific experiments.**	
Name of the course in Polish: **Modele zwierzęce w eksperymentach naukowych.**	
Unit providing the course (Department): **Department of Animal Physiology, Biochemistry and Biostructure**	
Course leader: **dr hab., prof. PULS Katarzyna Szkudelska**	
Discipline: **Animal Science and fisheries**	Semester: **3**

TYPE OF CLASSES:
(course load)

- Lectures	**5**
- Practical classes	**7**
- Self-study	**10**
Total number of hours:	**22**

OBJECTIVE OF THE COURSE:

Laboratory and farm animal models characteristics; legal regulations; Local Ethics Committee

TEACHING METHODS:

1. Lectures – one-way transfer of knowledge by the teacher using multimedia presentations
2. Multimedia presentations – theoretical introduction to practical classes and a discussion
3. Practical/laboratory method – conducting experiments under the guidance of the teacher. If animal tissue is unavailable, the problem-based method – presenting students with problems to solve theoretically.
4. Measurement – taking measurements, analyzing experimental results
5. Working with publications/books – analyzing and interpreting texts related to the course topics – multimedia presentation with group discussion

EDUCATION OUTCOMES*	Reference to education outcomes of the PULS Doctoral School
In the area of knowledge (PhD students know and understand): 1. world scientific literature concerning the animal models and ethical approach of the use of animals in scientific experiments and implications for practice; 2. the latest ethical rules as well as new methods and trends in research involving animals, thus facilitating the creation of original approaches, new concepts, and their scientific interpretation.	P8U_W_1 P8U_W_2
In the area of skills (PhD students know how to): 3. apply knowledge in the process of creative formulation of their research problems; 4. innovatively solve research tasks using independently gained knowledge concerning ethical and methodological aspects of the use of laboratory animals in scientific research.	P8U_U_1 P8U_U_2
In the area of social competencies (PhD students are capable to): 5. independently plan research and independently broaden the existing body of scientific literature; 6. promote appropriate models of teamwork.	P8U_K_1 P8U_K_4

Methods of evaluation of outcomes achievement:

Written exam (lectures) assessing knowledge of the lecture content - learning outcomes: 1, 2
Report on practical activities completed during workshops - learning outcomes: 2, 4, 5, 6
Multimedia presentation on scientific text analysis - learning outcomes: 1, 2, 6

* efekty uczenia się stanowią Załącznik nr 1 do Regulaminu Szkoły Doktorskiej Uniwersytetu Przyrodniczego w Poznaniu, który stanowi załącznik do uchwały nr 44/2021 Senatu UPP

TEACHING CONTENT:

- rules regulating the use of animals in research;
- conditions of keeping and rules for handling animals;
- purposes, types of studies, and principles of planning experiments using animals;
- research models of animals;
- *in vitro* methods developed based on lab animals' cells and tissues (examples of experiments);
- work with scientific literature related to the subject - presentation of a selected article and discussion;
- workshop – examples of the use of animals in scientific research.

The course completion criteria and methods:	Percent of a final grade:
Course/module assessment format and criteria:	
• Exam (lectures) – written test assessing theoretical knowledge from the lectures	40%
• Written transcript from practical sessions for credit	50%
• Multimedia presentation	10%
Activity during workshops and discussions • 60% of possible points – satisfactory grade (3.0) • Attendance: at least 80% • Active participation in classes (participation in discussions, answers to lecturer's questions)	
☐ **pass (Z)** ☐ **course credit with a grade** ☒ **examination (note)**	

RECOMMENDED LITERATURE:

1. Hubrecht R., Kirkwood J.: "*The UFAW Handbook of the Care and Management of Laboratory and other Research Animals"*. eight edition, Wiley-Blackwell, 2010
2. "*Best practice methodology in the use of animals for scientific purposes*." National Health and Medical Research Council (NHMRC) 2017, Australian Government
3. „*Fundamentals of Laboratory Animal Science*" Enqi Liu, Jianglin Fan**,** 2017, VetBooks, Taylor&Francis