Programme of studies at the Interdisciplinary Doctoral School of Agricultural Sciences

§ 1

1. Education at the Doctoral School (hereinafter: "the School") is carried out as part of the following disciplines:

- animal science and fisheries –Institute of Animal Reproduction and Food Research of the Polish Academy of Science in Olsztyn (IARFR PAS),
- nutrition and food technology – Institute of Animal Reproduction and Food Research of the Polish Academy of Science in Olsztyn (IARFR PAS),
- veterinary science – National Veterinary Research Institute (NVRI) in Puławy.
- agriculture and horticulture – Institute of Agrophysics of the Polish Academy of Sciences (IA PAN) in Lublin.

§ 2

1. Education at the School lasts 4 years and gives the PhD students the opportunity to:
   - conduct scientific research and prepare a doctoral dissertation in an interdisciplinary scientific environment,
   - strengthen and expand knowledge in the field of agricultural sciences,
   - acquire practical skills useful in scientific and implementation work;
   - present the results of scientific research,

as a part of individual research plans created for each of them, adapted to diverse specifics of the disciplines listed in § 1, at level 8 of the Polish Qualifications Framework (PQF).

§ 3

1. The curriculum at the Doctoral School includes classes preparing a doctoral student for scientific and research work. It shall not comprise the total time allocated to the completion of a doctoral dissertation. The time required for the completion of a doctoral thesis shall be agreed between the doctoral student and his/her supervisor.

2.Education at the School is carried out in the form of 4 types of courses:

- Obligatory courses related to School disciplines.
- Elective courses - specialization workshops - practical training classes in skills, methods or research tools and procedures related to individual School disciplines.
- Seminars – scientific seminars related to individual disciplines.

- Additional activities - activities developing a researcher's skills, independent of the chosen discipline.

Classes are conducted in Polish or English. In the absence of English-speaking participants, classes may be conducted in Polish.

§ 4

1. The basic list of courses organized by the School and ECTS scoring is included in Annex 1 to the ***Programme of Studies***.
2. Subsequent extensions of the list referred to in point 1 are posted on the School's website no later than 7 days before the start of the relevant semester.
3. Completion of the course requires the participation of a PhD student in a minimum of 80% of the classes.
4. Some courses can be held during summer/winter school.
5. The Doctoral School Board may indicate the minimum number of registered students necessary to conduct given courses.

§ 5

1. During 4 years of education in Doctoral School, a PhD student is required to accumulate at least 32 ECTS points, including at least 6 ECTS points obtained in total as a result of passing elective courses and at least 10 ECTS points obtained in total as a result of completing additional project-related activities offered by the School.

2. Detailed requirements regarding the choice of courses referred to in point 1 are contained in Annex 2.

§ 6

Any doubts concerning interpretation arising from the Programme of Studies or issues not covered by it shall be resolved by the Doctoral School Board.

§ 7

The Programme of Studies shall take effect on October 1, 2020.

Annex 1
To the Programme of Studies
at the Interdisciplinary Doctoral School of Agricultural Sciences

1.Obligatory courses:

1.1.Major Course/courses related to the chosen scientific discipline - 30 h /2 ECTS
1.2. Statistical methods in scientific research – 30 h /2 ECTS
1.3. Ethical and legal aspects in scientific research 5h / 1 ECTS
1.4. Specialized workshops with a selected foreign language – 30 h /3 ECTS
1.5. Raising funds for research and preparation of a scientific project – 15 h / 2 ECTS
1.6. Preparation and editing of a scientific paper – 15 h / 2 ECTS
1.7. Copyright and intellectual property – 5h / 1 ECTS
1.8. Occupational health and safety – 5 h / 1 ECTS

2. Elective courses (workshops) *

2.1. Molecular biology techniques - 15 h / 2 ECTS
2.2. Food supply chain safety – 15 h / 2 ECTS
2.3. Microbiology – 15 h / 2 ECTS
2.4. Modern methods of proteome analysis – 10 h / 2 ECTS
2.5. Modern methods of metabolome analysis - 10 h / 2 ECTS
2.6. Sensory analysis of food - 12 h / 2 ECTS
2.7. Cell culture techniques - 15 h /2 ECTS
2.8. Cell and tissue imaging – 15 h / 2 ECTS
2.9. Physical methods in food research - 15 h / 2ECTS
2.10. Molecular techniques in food research - 15 h / 2 ECTS
2.11. Food safety and quality - 10 h / 2 ECTS
2.12. Selected topics in bioeconomics – 10 h / 2 ECTS
2.13. Plant adaptation to climate change – 10 h / 2 ECTS
2.14. Transfer of knowledge and technology – 5 h / 2 ECTS
2.15. Alternative methods to animal testing in toxicology – 10 h/ 2 ECTS

** PhD student can choose courses in any of the Institutes participating in the Doctoral School*

3. Seminars – 60 h / 4 ECTS

4. Other project-related activities

4.1. Conducting own research project/grant - 2 ECTS / per project; max. 4 ECTS in 4 years
4.2. Research internship abroad - 2 ECTS per internship - minimum duration of the internship: 1 month; max 4 ECTS in 4 years
4.3. Participation in a research / commercialization / implementation project - 2 ECTS/per project, points awarded once during the whole period of education
4.4. Participation in a scientific conference - 3 ECTS (1 ECTS per conference)
4.5. Authorship of a scientific publication - 4 ECTS per publication; max 8 ECTS in 4 years
4.6. Activities promoting science – 3 ECTS (1 ECTS per activities; no more than 1 ECTS in a year and 3 ECTS in 4 years)

Detailed requirements for the courses referred to in § 5 para. 1. Programme of Studies.
A list of courses for each disciplines can be found in Annexes 3, 4, 5, 6.

A. Obligatory courses (lectures)
A minimum of 12 ECTS points must be obtained during the first 2 years of school education by passing the exams in the following courses:
1. Major Course/courses related to the chosen scientific discipline (30 h /2 ECTS)
2. Statistical methods in scientific research (30 h /2 ECTS)
3. Ethical and legal aspects in scientific research (5h / 1 ECTS)
4. Specialized workshops with a selected foreign language (30 h /3 ECTS)
5. Raising funds for research and preparation of a scientific project (15 h / 2 ECTS)
6. Preparation and editing of a scientific paper (15 h / 2 ECTS)
7. Copyright and intellectual property (5h / 1 ECTS)
8. Occupational health and safety (5 h / 1 ECTS)

B. Elective courses (workshops)
A minimum of 6 ECTS points should be obtained during 3 years of the studies at the Doctoral School passing selected courses from the group of elective courses offered in a given discipline. Courses can be organized by individual Institutes or during a summer/winter school. An updated list of available trainings, together with ECTS points and an indication of the entity responsible for the trainings, is available on the School's website.

C. Seminars - Regular attendance at doctoral seminars and seminars organized by the Institute where the student is conducting his/her PhD studies is obligatory (8 semesters, 4 ECTS).

D. Other project-related activities. A minimum of 10 ECTS points should be obtained by taking part in selected activities listed below:
1. Conducting own research project/grant - 2 ECTS / per project; max. 4 ECTS in 4 years
2. Research internship abroad - 2 ECTS per internship - minimum duration of the internship: 1 month; max 4 ECTS in 4 years)
3. Participation in a research / commercialization / implementation project - 2 ECTS/per project, points awarded once during the whole period of education
4. Participation in a: scientific conference- 3 ECTS (1 ECTS per conference)
5. Authorship of a scientific publication - 4 ECTS per publication; max 8 ECTS in 4 years
6. Activities promoting science – 3 ECTS (1 ECTS per activities; no more than 1 ECTS in a year and 3 ECTS in 4 years)

Annex 3
To the Programme of Studies
at the Interdisciplinary Doctoral School of Agricultural Sciences

Institute of Animal Reproduction and Food Research of the Polish Academy of Sciences in Olsztyn

- Disciplines: 1) animal science and fisheries, ; 2) nutrition and food technology

Course	Number of hours	ECTS	Year	Completion of the semester	Learning outcomes[1]
Obligatory courses					
1.1. Major course:					
1.1.1. Animal physiology with elements of zootechnics	30	2	I/III	Exam	W01, W02, W03, W04, U03,
1.1.2. Food technology and nutrition.	30	2	I/III	Exam	W01, W02, W03, W04, U03,
1.2. Statistical methods in scientific research	30	2	I/II	Exam	W06, U06, K02, K03, K04, K05
1.3. Ethical and legal aspects in scientific research	5	1	I/II	Grade	W08, U06, K05, K06, K07
1.4. Specialized workshops with a selected foreign language	30	2	I/II rok	Exam	W05, U04, U05, K03, K02, K04
1.5. Raising funds for research and preparation of a scientific project	15	2	I/II rok	Grade	W07, U01, U05, K02, K03, K05, K06
1.6. Preparation and editing of a scientific paper	15	2	I/II	Grade	W04, W05, U01, U04, U06, K02, K03, K04, K05
1.7. Copyright and intellectual property	5	1	I/II	Grade	W08, U01, K01, K02, K03, K04, K05, K06
1.8. Occupational health and safety	5	1	I	Grade	W09, U02, K08
2.Elective courses					
2.1. Molecular biology techniques	15	2	I/III	Grade	W02, W03, U01, U02, U03, K02, K03, K04, K05, K08
2.2. Microbiology	15	2	II/III	Grade	W02, W03, U01, U02, U03, K02, K03, K04, K05, K08
2.3. Modern methods of proteome analysis	10	2	II/III	Grade	W02, W03, U01, U02, U03, K02, K03, K04, K05, K08
2.4. Modern methods of metabolome analysis	10	2	II/III	Grade	W02, W03, U01, U02, U03, K02, K03, K04, K05, K08
2.5. Sensory analysis of food	12	2	II/III	Grade	W02, W03, U01, U02, U03, K02, K03, K04, K05, K08
2.6. Cell culture techniques	15	2	II/III	Grade	W02, W03, U01, U02, U03, K02, K03, K04, K05, K08
2.7. Cell and tissue imaging	15	2	II/III	Grade	W02, W03, U01, U02, U03, K02, K03, K04, K05, K08
2.8. Transfer of knowledge and technology	5	2	II/III	Grade	W08, U01, K03,

					K04, K05, K07
3. Seminars	**60**	**4**	**I/IV**	**Grade**	W01, W02, W03, U01, U03, U04, U06
4. Other project-related activities					
4.1. Conducting own research project/grant	2 ECTS/ project	4	I/IV	Grade	W01, W02, W03, W04, W05, W06, W07, W08, U01, U02, U03, U04, U05, K01, K02, K03, K04, K05, K06, K07, K08
4.2. Research internship abroad	2 ECTS/ internship	4	I/IV	Grade	W01, W02, W03, W05, U01, U02, U03, U04, K01, K02, K03, K04, K05, K06,
4.3. Participation in a research / commercialization / implementation project	project	2	I/IV	Grade	W01, W02, W03, W05, W06, W07, W08, U01, U02, U03, U04, U05, K01, K02, K03, K04, K05, K06, K07
4.4. Participation in a scientific conference	30 h 1ECTS/ conference	3	I/IV	Grade	W01, W02, W03, W05, U01, U02, U03, U04, K01, K02, K03, K05,
4.5. Authorship of a scientific publication	4 ECTS / publication	8	I/IV	Grade	W01, W02, W03, W04, W05, W06, W07, W08, U01, U02, U03, U04, U05, K01, K02, K03, K04, K05, K06, K07, K08
4.6. Activities promoting science		3	I/IV	Grade	W01, W02, W04, W05, W08, U01, U04, K01, K02, K05, K06, K07

[1)] Learning outcomes achieved through the implementation of a given subject.

Annex 4
To the Programme of Studies
at the Interdisciplinary Doctoral School of Agricultural Sciences

National Veterinary Research Institute in Puławy

Discipline: veterinary science

Course	Number of hours	ECTS	Year	Completion of the semester	Learning outcomes[1]
Obligatory courses					
1.1. Major course:					
1.1.1.Livestock infectious diseases and most important zoonoses and zoonosis factors	30	2	I/III	Exam	W01, W02, W03, W04, U03,
1.1.2. Food and feed safety against microbiological and chemical hazards	30	2	I/III	Exam	W01, W02, W03, W04, U03,
1.2. Statistical methods in scientific research	30	2	I/II	Exam	W06, U06, K02, K03, K04, K05
1.3. Ethical and legal aspects in scientific research	5	1	I/II	Grade	W08, U06, K05, K06, K07
1.4. Specialized workshops with a selected foreign language	30	2	I/II rok	Exam	W05, U04, U05, K03, K02, K04
1.5. Raising funds for research and preparation of a scientific project	15	2	I/II rok	Grade	W07, U01, U05, K02, K03, K05, K06
1.6. Preparation and editing of a scientific paper	15	2	I/II	Grade	W04, W05, U01, U04, U06, K02, K03, K04, K05
1.7. Copyright and intellectual property	5	1	I/II	Grade	W08, U01, K01, K02, K03, K04, K05, K06
1.8. Occupational health and safety	5	1	I	Grade	W09, U02, K08
2.Elective courses					
2.1. Molecular biology techniques	15	2	I/III	Grade	W02, W03, U01, U02, U03, K02, K03, K04, K05, K08
2.2. Food supply chain safety	15	2	II/III	Grade	W02, W03, U01, U02, U03, K02, K03, K04, K05, K08
2.3. Modern methods of proteome analysis	10	2	II/III	Grade	W02, W03, U01, U02, U03, K02, K03, K04, K05, K08
2.4. Cell culture techniques	15	2	II/III	Grade	W02, W03, U01, U02, U03, K02, K03, K04, K05, K08
2.5. Alternative methods to animal testing in toxicology	10	2	II/III	Grade	W02, W03, U01, U02, U03, K02, K03, K04, K05, K08
2.6. Transfer of knowledge and technology	5	2	II/III	Grade	W08, U01, K03, K04, K05, K07
3. Seminars	**60**	**4**	**I/IV**	**Grade**	W01, W02, W03, U01, U03, U04, U06
4. Other project-related activities					
4.1. Conducting own research project/grant	2 ECTS/ project	4	I/IV	Grade	W01, W02, W03, W04, W05, W06, W07, W08, U01, U02, U03, U04,

					U05, K01, K02, K03, K04, K05, K06, K07, K08
4.2. Research internship abroad	2 ECTS/ internship	4	I/IV	Grade	W01, W02, W03, W05, U01, U02, U03, U04, K01, K02, K03, K04, K05, K06,
4.3. Participation in a research / commercialization / implementation project	project	2	I/IV	Grade	W01, W02, W03, W05, W06, W07, W08, U01, U02, U03, U04, U05, K01, K02, K03, K04, K05, K06, K07
4.4. Participation in a scientific conference	30 h 1ECTS/ conference	3	I/IV	Grade	W01, W02, W03, W05, U01, U02, U03, U04, K01, K02, K03, K05,
4.5. Authorship of a scientific publication	4 ECTS / publication	8	I/IV	Grade	W01, W02, W03, W04, W05, W06, W07, W08, U01, U02, U03, U04, U05, K01, K02, K03, K04, K05, K06, K07, K08
4.6. Activities promoting science		3	I/IV	Grade	W01, W02, W04, W05, W08, U01, U04, K01, K02, K05, K06, K07

[1)] Learning outcomes achieved through the implementation of a given subject.

Annex 5
To the Programme of Studies
at the Interdisciplinary Doctoral School of Agricultural Sciences

Institute of Agrophysics of the Polish Academy of Sciences (IA PAN) in Lublin.

Discipline: agriculture and horticulture

Course	Number of hours	ECTS	Year	Completion of the semester	Learning outcomes[1]
Obligatory courses					
1.1. Major course:					
1.1. Current challenges in agriculture	30	2	I/III	Exam	W01, W02, W03, W04, U03,
1.2. Statistical methods in scientific research	30	2	I/II	Exam	W06, U06, K02, K03, K04, K05
1.3. Ethical and legal aspects in scientific research	5	1	I/II	Grade	W08, U06, K05, K06, K07
1.4. Specialized workshops with a selected foreign language	30	2	I/II rok	Exam	W05, U04, U05, K03, K02, K04
1.5. Raising funds for research and preparation of a scientific project	15	2	I/II rok	Grade	W07, U01, U05, K02, K03, K05, K06
1.6. Preparation and editing of a scientific paper	15	2	I/II	Grade	W04, W05, U01, U04, U06, K02, K03, K04, K05
1.7. Copyright and intellectual property	5	1	I/II	Grade	W08, U01, K01, K02, K03, K04, K05, K06
1.8. Occupational health and safety	5	1	I	Grade	W09, U02, K08
2.Elective courses					
2.1. Physical methods in food research	15	2	I/III	Grade	W02, W03, U01, U02, U03, K02, K03, K04, K05, K08
2.2. Cell and tissue imaging	15	2	II/III	Grade	W02, W03, U01, U02, U03, K02, K03, K04, K05, K08
2.3. Molecular techniques in food research	15	2	II/III	Grade	W02, W03, U01, U02, U03, K02, K03, K04, K05, K08
2.4. Food safety and quality	10	2	II/III	Grade	W02, W03, U01, U02, U03, K02, K03, K04, K05, K08
2.5. Selected topics in bioeconomics	10	2	II/III	Grade	W02, W03, U01, U02, U03, K02, K03, K04, K05, K08
2.6. Plant adaptation to climate change	10	2	II/III	Grade	W02, W03, U01, U02, U03, K02, K03, K04, K05, K08
2.7. Transfer of knowledge and technology	5	2	II/III	Grade	W08, U01, K03, K04, K05, K07
3. Seminars	**60**	**4**	**I/IV**	**Grade**	W01, W02, W03, U01, U03, U04, U06
4. Other project-related activities					
4.1. Conducting own research project/grant	2 ECTS/ project	4	I/IV	Grade	W01, W02, W03, W04, W05, W06, W07, W08, U01,

					U02, U03, U04, U05, K01, K02, K03, K04, K05, K06, K07, K08
4.2. Research internship abroad	2 ECTS/ internship	4	I/IV	Grade	W01, W02, W03, W05, U01, U02, U03, U04, K01, K02, K03, K04, K05, K06,
4.3. Participation in a research / commercialization / implementation project	project	2	I/IV	Grade	W01, W02, W03, W05, W06, W07, W08, U01, U02, U03, U04, U05, K01, K02, K03, K04, K05, K06, K07
4.4. Participation in a scientific conference	30 h 1ECTS/ conference	3	I/IV	Grade	W01, W02, W03, W05, U01, U02, U03, U04, K01, K02, K03, K05,
4.5. Authorship of a scientific publication	4 ECTS / publication	8	I/IV	Grade	W01, W02, W03, W04, W05, W06, W07, W08, U01, U02, U03, U04, U05, K01, K02, K03, K04, K05, K06, K07, K08
4.6. Activities promoting science		3	I/IV	Grade	W01, W02, W04, W05, W08, U01, U04, K01, K02, K05, K06, K07

[1)] Learning outcomes achieved through the implementation of a given subject.