

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 1 ECTS/ 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.