

**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 <sup>1</sup>
<b>Obligatory courses</b>					
<b>1.1. Major course:</b>					
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
<b>2. Elective courses</b>					
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
<b>3. Seminars</b>	<b>60</b>	<b>4</b>	<b>I/IV</b>	<b>Grade</b>	W01, W02, W03, U01, U03, U04, U06
<b>4. Other project-related activities</b>					
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
<b>4.2.</b> Research internship abroad	2 ECTS/ internship	4	I/IV	Grade	W01, W02, W03, W05, U01, U02, U03, U04, K01, K02, K03, K04, K05, K06,
<b>4.3.</b> 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
<b>4.4.</b> 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,
<b>4.5.</b> 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
<b>4.6.</b> Activities promoting science		3	I/IV	Grade	W01, W02, W04, W05, W08, U01, U04, K01, K02, K05, K06, K07

<sup>1)</sup> Learning outcomes achieved through the implementation of a given subject.