Appendix No. 1.5 to the Resolution No. 61/2025
of the Rector of the University of Rzeszów

SYLLABUS

REGARDING THE QUALIFICATION CYCLE FROM 2026/2027 TO 2029/2030
ACADEMIC YEAR 2026/2027

1. BASIC COURSE/MODULE INFORMATION

Course/Module title	**Innovations in plant protection**
Course/Module code *	
Faculty (name of the unit offering the field of study)	Faculty of Technology and Life Sciences
Name of the unit running the course	Institute of Agricultural Sciences, Environmental Protection and Management xDepartment of Agroecology and Forest Utilization
Field of study	Agriculture
Qualification level	Second-cycle studies
Profile	General academic
Study mode	Full-time
Year and semester of studies	Year I, Semester I
Course type	Specialization course / Agronomy with Agribusiness
Language of instruction	English
Coordinator	Dr. Sc. Eng. Zbigniew Czerniakowski, Prof. UR
Course instructor	Dr. Sc. Eng. Zbigniew Czerniakowski, Prof. UR Dr. Beata Jacek

* - as agreed at the faculty

1.1. Learning format – number of hours and ECTS credits

Semester (no.)	Lectures	Classes	Laboratories	Seminars	Practical classes	Internships	Field classes	**ECTS credits**
1	14		20				7	3

1.2. Course delivery methods
x- conducted in a traditional way
- involving distance education methods and techniques

1.3. Course/Module assessment (exam, pass with a grade, pass without a grade)
pass with a grade

2. PREREQUISITES

The student should possess basic knowledge regarding ecological and integrated plant protection, familiarity with major diseases and pests, modern agrophags monitoring techniques, general crop and soil management, and agroecology.

3. OBJECTIVES, LEARNING OUTCOMES, COURSE CONTENT, AND INSTRUCTIONAL METHODS

3.1. Course/Module objectives

O1	Familiarizing students with the assessment of the harmfulness of diseases and pests and their impact on the quality and quantity of yields from field, vegetable, and fruit crops
O2	Developing skills in identifying agricultural pests and pathogens based on symptoms observed on plants
O3	Familiarizing students with methods for preventing and controlling plant diseases and pests, as well as the environmental impact of the methods employed
O4	Familiarizing students with the latest trends in plant protection, with particular emphasis on innovative techniques

3.2. COURSE/MODULE LEARNING OUTCOMES

Learning Outcome	The description of the learning outcome defined for the course/module	Relation to the degree programme outcomes
LO_01	is familiar with the economically significant diseases and pests affecting field crops, vegetables, and fruit crops	K_W04
LO_02	knows methods for preventing and controlling plant diseases and pests	K_W04
LO_03	is able to predict the impact of pest and disease incidence on crop yield quantity and quality, taking into account environmental and meteorological conditions	K_U02, K_U04
LO_04	is able to appropriately select methods and techniques for controlling plant diseases and pests	K_U06
LO_05	is able to prepare and deliver a presentation on agrophags prevention, incidence, and control methods	K_U06, K_U07
LO_06	is prepared to take responsibility for making appropriate decisions regarding agrophags control based on data concerning disease or pest severity, the mode of action of plant protection products, and an analysis of the costs and ecological consequences of the treatment	K_K04
LO_07	is prepared to adhere to safety regulations regarding the application of various plant protection methods and techniques	K_K04

3.3. Course content

A. Lectures

Content outline
New biologically active substances and product formulations – preliminary information
Biopesticides, nanopesticides, and nanoformulations
Stimulation of plant growth and development
Remote sensing and the use of UAVs and other remotely controlled devices for plant protection against agrophags.

B. Laboratories and field classes

Content outline
Common diseases affecting field crops, vegetables, and fruit crops. Observation of selected disease symptoms and pathogens.
Common pests affecting field crops, vegetables, and fruit crops. Observation of selected plant pests.
Application of integrated methods for the prevention and control of harmful organisms.
Innovative mechanical, agrotechnical, and breeding methods to limit the incidence of diseases and pests in field crops, vegetables, and fruit crops.
Innovative biological methods and substances of natural origin for controlling diseases and pests in field crops, vegetables, and fruit crops.
Innovative and alternative technologies for seed protection.
Field mapping and the use of modern monitoring methods and indices to assess the severity of pest and disease infestation in crops – field classes.

3.4. Methods of Instruction

Lecture: lecture supported by a multimedia presentation
Laboratory: Observing selected disease agents and pests, conducting laboratory experiments, working in groups, and preparing a multimedia presentation.
Field classes: case analysis, discussion.

4. Assessment techniques and criteria

4.1 Methods of evaluating learning outcomes

Learning outcome	Methods of assessment of learning outcomes (e.g. test, oral exam, written exam, project, report, observation during classes)	Learning format (lectures, classes…)
LO-01	test	L., LAB., FC
LO-02	test, presentation	L., LAB.
LO_03	test, presentation	L., LAB.
LO_04	test	LAB.
LO_05	presentation	LAB.
LO_06	test	LAB., FC
LO_07	test	LAB.

4.2 Course assessment criteria

Laboratory classes: Graded credit, determination of the final grade based on component assessments: a test and a presentation. Field classes: Preparation of a report in the form of a multimedia presentation, active participation in the classes. Lecture: Qualifying test – open-ended and closed-ended questions. To pass the course, all intended learning outcomes must be achieved. A passing grade is determined by the number of points obtained (>50% of the maximum possible score). Passing the course depends on the points earned during the semester from tests and a presentation. Grading scale: Satisfactory (dst) = 50–60%, Satisfactory Plus (dst+) = 61–70%, Good (db) = 71–80%, Good Plus (db+) = 81–90%, Very Good (bdb) = 91–100%.

5. Total student workload needed to achieve the intended learning outcomes – number of hours and ECTS credits

Activity	Number of hours
Course hours	41
Other contact hours involving the teacher (consultation hours, examinations)	4
Non-contact hours - student's own work (preparation for classes or examinations, projects, etc.)	30
Total number of hours	75
Total number of ECTS credits	3

* One ECTS point corresponds to 25-30 hours of total student workload

6. Internships related to the course/module

Number of hours	
Internship regulations and procedures	

7. Instructional materials

Compulsory literature: materials provided by the teacher and online resources on the topics covered
Complementary literature: online resources on the topics covered

Approved by the Head of the Department or an authorised person