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 *2028/2029*

1. BASIC COURSE/MODULE INFORMATION

Course/Module title	**The Use of Drones in Smart Farming**
Course/Module code *	
Faculty (name of the unit offering the field of study)	Faculty of Technology and Life Sciences (WTP)
Name of the unit running the course	Institute of Agricultural Sciences, Environmental Protection and Management
Field of study	Agriculture
Qualification level	First-cycle studies
Profile	General academic profile
Study mode	Full-time
Year and semester of studies	Year 3, Semester 6
Course type	Specialisation course / Agronomy with Agribusiness
Language of instruction	English
Coordinator	dr hab. inż. Bogdan Saletnik, prof. UR
Course instructor	dr hab. inż. Bogdan Saletnik, prof. UR dr inż. Marcin Bajcar dr inż. Miłosz Zardzewiały dr Łukasz Peszek

* - as agreed at the faculty

1.1. Learning format – number of hours and ECTS credits

Semester (no.)	Lectures	Classes	Laboratories	Seminars	Practical classes	Internships	others	**ECTS credits**
6			15					1

1.2. Course delivery methods
conducted in a traditional way

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

2. PREREQUISITES

Computer skills and the ability to use touchscreen mobile phones such as smartphones. Successful completion of the Information Technology course.

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

3.1. Course/Module objectives

O1	Acquiring knowledge of the possibilities for using drones in agriculture.
O2	Acquiring knowledge of the legal regulations governing drone operations.
O3	Developing skills in drone operation and the analysis of acquired data.

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	The student knows and understands aviation law concerning drone operations and applies it in practice.	K_W08
LO_02	The student knows the construction of drones and the possibilities for their practical application in agriculture.	K_W07
LO_03	The student has skills in operating drones and analysing data acquired using them.	K_U01, K_U06
LO_04	The student is ready to take action to solve problems related to agriculture and understands its impact on the environment and society.	K_K01, K_K03

3.3. Course content

A. Laboratories

Content outline
Drones and their classification, drone construction and peripheral devices.
Regulations governing drone flight operations.
The role of drones in agriculture and their use in crop monitoring, fertilisation, plant protection, terrain and soil mapping, livestock and pasture monitoring, and harvest management.
Overview of the types of cameras and sensors used in drones and their applications in agriculture.
Practical drone operation and analysis of data acquired using drones.

3.4. Methods of Instruction

Laboratories: multimedia presentation, computer-based work, practical work with a drone.

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	WRITTEN TEST	LABORATORIES
LO-02	WRITTEN TEST	LABORATORIES
LO-03	PRACTICAL ASSESSMENT, OBSERVATION DURING CLASSES	LABORATORIES
LO-04	OBSERVATION DURING CLASSES	LABORATORIES

4.2 Course assessment criteria

Pass with a grade: 50% of the final grade is based on the results of written tests, and 50% on the practical assessment and participation during classes.

The points obtained in the written tests are converted into percentages corresponding to the following grades:

- up to 50% – fail,
- 51%–60% – satisfactory,
- 61%–70% – satisfactory plus,
- 71%–80% – good,
- 81%–90% – good plus,
- 91%–100% – very good.

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

Activity	Number of hours
Course hours	15
Other contact hours involving the teacher (consultation hours, examinations)	2
Non-contact hours - student's own work (preparation for classes or examinations, projects, etc.)	8
Total number of hours	25
Total number of ECTS credits	1

* 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