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	**Satial Information System in Agriculture**
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
Field of study	Agriculture
Qualification level	First-cycle studies
Profile	General academic
Study mode	Full-time
Year and semester of studies	Year 1, semester 2
Course type	Basic subjects
Language of instruction	English
Coordinator	dr Bernadetta Ortyl
Course instructor	dr Bernadetta Ortyl

* - 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**
2			10				5	2

1.2. Course delivery methods

☒ 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)
Laboratory exercises – graded credit, field classes – credit

2. PREREQUISITES

Credit in Information Technology.

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

3.1. Course/Module objectives

O1	Acquiring skills in collecting, processing, and presenting environmental information.
O2	Application of geographic information systems in agriculture.

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 understands the potential of GIS tools and their importance in optimizing agricultural activities and supporting decisions on the rational use of natural resources.	K_W07
LO_02	The student acquires, analyses, and visualizes spatial data related to the environment and verifies them in the field.	K_U06
LO_03	The student uses digital vector and raster data for the qualitative and quantitative characterization of the agricultural environment.	K_U09
LO_04	The student plans spatial analyses and prepares reports on the results based on current scientific literature.	K_U10
LO_05	The student is aware of the rapid development of GIS technologies and the need to keep spatial data up to date.	K_K01

3.3. Course content

A. Laboratories, field classes

Content outline
Introduction to QGIS. Overview of basic toolbars and tools.
Visualization of vector and raster data.
Data acquisition. WMS, WMTS, and WFS services.
Basic spatial analyses.
Calculation of the NDVI using orthophotography.
Field verification of remotely acquired data.
Map composition and layout.

3.4. Methods of Instruction

Laboratories: computer-based practical classes, project-based learning (practical project).
Field classes: field observation, field audit method (verification of GIS results in the field).

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	Observation during classes, assessment of the GIS project	Laboratories
LO_02	Assessment of the GIS project, observation during classes	Laboratories/ Field classes
LO_03	Assessment of the GIS project	Laboratories
LO_04	Assessment of the GIS project / assessment of the report	Laboratories
LO_05	Observation during classes	Laboratories

4.2 Course assessment criteria

Laboratories – the final grade is based on the completed GIS project and submitted report. Field classes – credit based on attendance Passing requirements: completion of all assigned tasks and achievement of all intended learning outcomes. The final grade is determined by the number of points obtained : satisfactory 51–60%, satisfactory plus 61–70%, good 71–80%, good plus 81–90%, very good 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	15
Other contact hours involving the teacher (consultation hours, examinations)	5
Non-contact hours - student's own work (preparation for classes or examinations, projects, etc.)	30
Total number of hours	50
Total number of ECTS credits	2

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

6. Internships related to the course/module

Not applicable

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