

COURSE SYLLABUS

Academic year 2025 - 2026

1. Programme Information

1.1. Higher Education Institution	„Lucian Blaga” University of Sibiu
1.2. Faculty	Faculty of Sciences
1.3. Department	Environmental Sciences, Physics, Physical Education and Sports
1.4. Field of study	Biology
1.5. Level of study ¹	Bachelor
1.6. Programme of study	Biology (in english)

2. Details about the course

2.1. Name of course	Integrated pest control	Code	FSTI.MFE.BIOEN.L.CU.6.1010.C-3.11
2.2. Course coordinator	Lecturer Daniela Ilie, PhD		
2.3. Seminar / laboratory coordinator	Lecturer Daniela Ilie, PhD		
2.4. Year of study ²	3	2.5. Semester ³	6
2.6. Evaluation form ⁴	C		
2.7. Course type ⁵	U	2.8. The formative category of the course ⁶	S

3. Estimated total time

3.1. Course Extension within the Curriculum – Number of Hours per Week					
3.1.a.Lecture	3.1.b. Seminar	3.1.c. Laboratory	3.1.d. Project	3.1.e Other	Total
1		1			2
3.2. Course Extension within the Curriculum – Total Number of Hours within the Curriculum					
3.2.a.Lecture	3.2.b. Seminar	3.2.c. Laboratory	3.2.d. Project	3.2.e Other	Total ⁷
12		12			24
Time Distribution for Individual Study ⁸					Hours
Learning by using course materials, references and personal notes					12
Additional learning by using library facilities, electronic databases and on-site information					12
Preparing seminars / laboratories, homework, portfolios and essays					15
Tutorial activities ⁹					8
Exams ¹⁰					4
3.3. Total Individual Study Hours ¹¹ (NOSI_{sem})					51
3.4. Total Hours in the Curriculum (NOAD_{sem})					24
3.5. Total Hours per Semester ¹² (NOAD_{sem} + NOSI_{sem})					75
3.6. No. of hours / ECTS					25
3.7. Number of credits¹³					3

4. Prerequisites (if needed)

4.1. Courses that must be successfully completed first (from the curriculum) ¹⁴	Invertebrate biology 1, Invertebrate biology 2, Systematics of cryptogams, General ecology, Microbiology
4.2. Competencies	

5. Conditions (wherever applicable)

5.1. For course/lectures ¹⁵	
5.2. For practical activities (lab/sem/pr/other) ¹⁶	

6. Learning outcomes ¹⁷

Number of credits assigned to the discipline: 3				
Learning outcomes				Credit allocation based on learning outcomes
No.	Knowledge	Aptitudes	Responsibility and autonomy	
LO 1	The student/graduate describes, defines and discusses fundamental principles in the field of Biology, as well as interdisciplinary aspects.	The student/graduate applies working methods using modern instruments/equipment and classical laboratory techniques to perform, design experiments, record and appropriately analyze the results obtained.	The student/graduate uses his/her own knowledge and experiences to develop the scientific community and society in general by participating in professional and/or community activities.	2
LO 2	The student/graduate correctly uses and explains the specific terminology used in the field of Biology, the main concepts and laws, the characteristics of biological systems from the perspective of the principles of organization and functioning of living matter.	The student/graduate defines, describes, discusses/presents major concepts in the field of Biology.	The student/graduate demonstrates responsibility and autonomy in the use of scientific knowledge in the field of Biology, by conducting research, developing or improving concepts, theories, operational methods or biotechnological products, assuming ethical and professional decisions within the scientific process.	1

7. Course objectives (resulted from developed competencies)

7.1. Main course objective	Knowledge of problems related to pest control in an efficient manner and side effect-free within ecosystems
7.2. Specific course objectives	Corect understanding of the notion of pest. Knowledge of methods of limiting pest population below the economic thresholds. Knowledge of invertebrate pests. Knowledge of animal pests of crops and forests. Practical application at Institute of Plant Protection.

8. Course description

8.1. Lecture ¹⁸	Teaching methods ¹⁹	Hours
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Lecture 1	Introductory concepts. Plant protection. Pest organism. Primary and secondary pests.	participatory lecture; conversation	1
Lecture 2-3	Estimating damages caused by pests. Pest control.	participatory lecture; conversation	2
Lecture 4-5	Forecasting and warning systems for pests. Short and long term forecasting. Criteria used for warning.	participatory lecture; conversation	2
Lecture 6-7	Methods of limiting pest population. Phytosanitary quarantine. Mechanical, physical, chemical and biological methods. Integrated Pest Control (IPC) also known as Integrated Pest Management (IPM)	participatory lecture; conversation	2
Lecture 8-9	Types of pesticides. Toxicity of pesticides. Long – term residual effects of pesticides.	participatory lecture; conversation	2
Lecture 10-12	Natural pest control. The use of auxiliary insects (parasitic insects, predatory insects). Controlled growth of entomophagous.	participatory lecture; conversation	3
Total lecture hours:			12

8.2. Practical activities

8.2.b. Laboratory		Teaching methods ²⁰	Hours
Laboratory 1	Viruses and virus infection in plants. Mycoplasma and mycoplasmosis in plants. Plant parasitic fungi. Systematic groups of animal pests (Nematoda. Gastropoda. Acarina. Insecta).	Debate, investigation	1
Laboratory 2	Pests of grain crops; description, biology, damage, pest control	Debate, investigation	1
Laboratory 3-4	Pests of vegetables; description, biology, damage, pest control	Debate, investigation	2
Laboratory 5-6	Forage crops pests; description, biology, damage, pest control	Debate, investigation	2
Laboratory 7-8	Pests of fruit trees; description, biology, damage, pest control	Debate, investigation	2
Laboratory 9-10	Pests of forest trees; description, biology, damage, pest control	Debate, investigation	2
Laboratory 11-12	Visit to Institute of Plant Protection	Debate, investigation	2
Total laboratory hours			12

9. Bibliography

9.1. Recommended references	NORRIS, R. F., CASWELL-CHEN, E.P., KOGAN, M., 2003, Concepts in integrated pest management, Prentice Hall PTR.
	US Environmental Protection Agency, "Pesticides and Food: What Does Integrated Pest Management Mean?"
9.2. Additional references	

10. Conjunction of the discipline's content with the expectations of the epistemic community, professional associations and significant employers of the specific study program ²¹

The course content enables students to obtain skills of understanding and reproduction of the terms, concepts and principles of pest control, gives them the ability to communicate using the specific scientific language, to interpret the observations on pest and choose the methods of limiting pest population below the economic thresholds.

11. Evaluation

Activity Type	11.1 Evaluation Criteria	11.2 Evaluation Methods		11.3 Percentage in the Final Grade	Notes. ²²
11.4a Exam / Coloquium	• Theoretical and practical knowledge acquired (quantity, correctness, accuracy)	Tests during the semester ²³ :	%	75%	
		Homework:	%		
		Other activities ²⁴ :	%		
		Final evaluation:	75%		
11.4b Seminar	• Frequency/relevance of participation or responses	Evidence of participation, portfolio of papers (reports, scientific summaries)		% (minimum 5)	
11.4c Laboratory	• Knowledge of the equipment, how to use specific tools; evaluation of tools, processing and interpretation of results	• Written questionnaire • Laboratory notebook, experimental works, reports, etc. • Practical demonstration		25%	
11.4d Project	• The quality of the project, the correctness of the project documentation, the appropriate justification of the chosen solutions	• Self-evaluation, project presentation • Critical evaluation of a project		% (minimum 5)	
11.5 Minimum performance standard ²⁵					

The Course Syllabus will encompass components adapted to persons with special educational needs (SEN – people with disabilities and people with high potential), depending on their type and degree, at the level of all curricular elements (skills, objectives, contents, teaching methods, alternative assessment), in order to ensure fair opportunities in the academic training of all students, paying close attention to individual learning needs.

Filling Date: 16 / 09 / 2025

Department Acceptance Date: 17 / 09 / 2025

	Academic Rank, Title, First Name, Last Name	Signature
Course Teacher	Lecturer Daniela Ilie, PhD	
Study Program Coordinator	Assoc. Prof. Ana-Maria Benedek-Sîrbu, PhD	
Head of Department	Lecturer Ioan Tăușan, PhD	

¹ Bachelor / Master

² 1-4 for bachelor, 1-2 for master

³ 1-8 for bachelor, 1-4 for master

⁴ Exam, colloquium or VP A/R - from the curriculum

⁵ Course type: R = Compulsory course; E = Elective course; O = Optional course

⁶ Formative category: S = Specialty; F = Fundamental; C = Complementary; I = Fully assisted; P = Partially assisted; N = Unassisted

⁷ Equal to 14 weeks x number of hours from point 3.1 (similar to 3.2.a.b.c.)

⁸ The following lines refer to individual study; the total is completed at point 3.7.

⁹ Between 7 and 14 hours

¹⁰ Between 2 and 6 hours

¹¹ The sum of the values from the previous lines, which refer to individual study.

¹² The sum (3.5.) between the number of hours of direct teaching activity (NOAD) and the number of hours of individual study (NOSI) must be equal to the number of credits assigned to the discipline (point 3.7) x no. hours per credit (3.6.)

¹³ The credit number is computed according to the following formula, being rounded to whole neighbouring values (either by subtraction or addition

$$\text{No. credits} = \frac{NOCpSpD \times C_c + NOApSpD \times C_A}{TOCpSdP \times C_c + TOApSdP \times C_A} \times 30 \text{ credits}$$

Where:

- NOCpSpD = Number of lecture hours / week / discipline for which the credits are calculated
- NOApSpD = Number of application hours (sem./lab./pro.) / week / discipline for which the credits are calculated
- TOCpSdP = Total number of course hours / week in the Curriculum
- TOApSdP = Total number of application hours (sem./lab./pro.) / week in the Curriculum
- C_c/C_A = Course coefficients / applications calculated according to the table

Coefficients	Course	Applications (S/L/P)
Bachelor	2	1
Master	2,5	1,5
Bachelor - foreign language	2,5	1,25

¹⁴ The courses that should have been previously completed or equivalent will be mentioned

¹⁵ Board, video projector, flipchart, specific teaching materials, online platforms, etc.

¹⁶ Computing technology, software packages, experimental stands, online platforms, etc.

¹⁷ The learning outcomes will be stated in accordance with the specific standards of the ARACIS expert commissions (<https://www.aracis.ro/ghiduri/>)

¹⁸ Chapter and paragraph titles

¹⁹ Exposition, lecture, board presentation of the studied topic, use of video projector, discussions with students (for each chapter, if applicable)

²⁰ Practical demonstration, exercise, experiment

²¹ The relationship with other disciplines, the usefulness of the discipline on the labour market

²² CPE – Conditions Exam Participation; nCPE – Does Not Condition Exam Participation; CEF - Conditions Final Evaluation; N/A – not applicable

²³ The number of tests and the weeks in which they will be taken will be specified

²⁴ Scientific circles, professional competitions, etc.

²⁵ The minimum performance standard in the competence grid of the study program is customized to the specifics of the discipline, if applicable