



COURSE SYLLABUS FORM

FUNDAMENTALS OF NATURAL SCIENCES WITH METHODOLOGY I

Basic course information	
Academic Unit:	University of Prizren "Ukshin Hoti", Faculty of Education
Course Title:	Fundamentals of Natural Sciences with Methodology II
Level:	Elementary
Course Status:	Bachelor
Year of study:	Elective
Number of hours per week:	4 h, Semester VII
Credit value – ECTS:	2 +1
Time / location:	5
Lecturer:	Faculty of Education
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Course Description	This course aims to deepen fundamental knowledge in biology while simultaneously developing methodological competences for teaching it in primary education. The course covers basic biology concepts such as the cell, the organization of the human body, life cycles, ecosystems, biodiversity, health, and hygiene, integrating them with didactic strategies adapted to younger ages. Emphasis is placed on experiential learning, simple experiments, practical activities, and outdoor education, so that students are able to transform scientific content into learning that is understandable, engaging, and developmentally appropriate for primary school pupils.
Course Objectives:	The primary objective of this course is to empower students to synthesize and apply the knowledge they have gained in the natural sciences. Students will develop the ability to use this knowledge effectively in practical and theoretical contexts and to communicate and transfer their understanding to others, especially in educational or teaching settings. The course aims to cultivate skills in critical analysis, communication, and dissemination of knowledge, preparing students to inspire and educate future pupils in the field of natural sciences.
Learning Outcomes:	Upon completion of this course, the student will be able to: Knowledge • Explain fundamental biological concepts adapted for primary education. • Describe basic life processes and their importance in the environment. • Understand the relationship between biology, health, and environmental education. Skills • Design lesson plans based on active methods. • Conduct simple biology experiments safely. • Use visual aids and didactic materials to facilitate learning. • Develop outdoor activities as part of the teaching process.

	Competences • Apply interdisciplinary approaches in teaching biology. • Promote environmental and health awareness among pupils. • Reflect critically on teaching practice and improve it. • Act as a teacher-researcher in the context of science education.		
Contribution to student workload (should correspond to the learning outcomes)			
Activity	Hours	Days/week	Total
Lectures	2	15	30
Theoretical/Laboratory exercises	1	15	15
Practical work			
Contact with the lecturer / consultations	1	10	10
Field exercises	0	0	0
Midterms, seminars	4	2	8
Homework	1	10	10
Individual study time (in the library or at home)	2	15	30
Final preparation for the exam	10	2	20
Time spent on assessment (tests, quizzes, final exam)	2	10	20
Projects, presentations, etc.	2	1	2
Total			145

Teaching Methods	The teaching methods in this course are based on an active and contemporary approach, where theory is continuously interwoven with practice. In addition to interactive lectures, students engage in group work, discussions, case analyses, and the implementation of simple biology experiments appropriate for primary education. Particular emphasis is placed on experiential learning and outdoor activities, helping students connect scientific concepts with real life. The use of visual tools, practical projects, and pedagogical reflection aims to develop professional competences for effective and creative teaching in the natural sciences.
Assessment Methods	First assessment: 30% Second assessment: 25% Homework or other engagements / student work diary, seminar: 10% Participation: 5% Final exam: 30% Total: 100%
Literature	
Core literature:	<i>Biology</i>
Additional literature:	

Study plan:		
Week	Lectures to be delivered	
Week 1:	The cell as the basic unit of life (Plant and animal cells, key differences, didactic models)	Building a 3D model of the plant and animal cell using recycled materials. Drafting a 30-minute mini lesson plan for the class.

Week 2:	Organization of the human body (Main systems: digestive, respiratory, circulatory – how to teach them in primary school)	Creating a didactic poster for one body system. Simulating a lesson using active methods (role-play).
Week 3:	Senses and perception (The role of the senses in learning and simple experiments)	Designing and conducting 5 simple experiments on the senses. Reflection on the importance of sensory experience in learning.
Week 4:	Growth and development of organisms (Life cycle of plants and animals – practical methods)	Practical project: Planting seeds and keeping an observation diary. Building the life cycle using visual materials.
Week 5:	Plants and their parts (Root, stem, leaves, flower – germination experiments)	Analyzing a real plant and identifying its parts. Designing an interactive activity for primary school.
Week 6:	First midterm assessment	Theoretical test + practical analysis of a lesson plan.
Week 7:	Photosynthesis simplified for young ages (How to explain it without complex chemical formulations)	Creating a visual explanation without chemical formulas. Building an educational game for the photosynthesis process.
Week 8:	Basic classification of organisms (Plants, animals, microorganisms – classification games)	Organizing a classification game with cards. Designing a cooperative activity for the class.
Week 9:	Ecosystems and the food chain (Local examples – a visual approach)	Building a food chain using local examples. Analyzing the impact of human intervention on an ecosystem.
Week 10:	Microorganisms and hygiene (Bacteria, viruses – health awareness)	Practical demonstration of how microbes spread (using colors/flour). Designing an educational campaign for pupils.

Week 11:	Biodiversity and its importance (Examples from the flora and fauna of Kosovo)	Identifying 5 local species and presenting their importance. Poster project on biodiversity conservation.
Week 12:	Heredity and family similarities (A simplified concept of genetics)	Analysis of family traits (illustrative examples). Designing a simplified activity for basic genetics.
Week 13:	Health and balanced nutrition (Role of nutrients – active methods)	Analyzing a daily menu and evaluating nutritional balance. Designing an educational game about healthy eating.
Week 14:	Outdoor education as a tool for learning biology (Field observation, school garden, practical projects)	Planning a lesson outdoors. Designing a mini school garden.
Week 15:	Second midterm assessment	Presentation of a methodological project + pedagogical reflection

Academic policies and rules of conduct:

Active participation, adherence to the schedule, and professional communication in class are required. The use of electronic devices is allowed only for teaching purposes. Any behavior that undermines the academic environment is addressed in accordance with university regulations.