Syllabus

Course Description

Course Title	Foundations of Subject-Specific Pedagogy I: Natural, Agricultural and Food Sciences in Upper Secondary Education
Course Code	83025
Course Title Additional	
Scientific-Disciplinary Sector	AGRI-05/B
Language	German
Degree Course	University course for initial training of secondary school teachers in the German language - 60CP
Other Degree Courses (Loaned)	
Lecturers	Prof. Dr. Sanja Baric, Sanja.Baric@unibz.it https://www.unibz.it/en/faculties/agricultural-environmental-food-sciences/academic-staff/person/1049
Teaching Assistant	
Semester	Second semester
Course Year/s	1
CP	2
Teaching Hours	12
Lab Hours	0
Individual Study Hours	38
Planned Office Hours	
Contents Summary	The module "Didactics of Natural, Agricultural and Nutritional Sciences for Secondary Schools" teaches basic didactic skills for the planning, implementation and reflection of lessons in the subject of natural, agricultural and nutritional sciences. The aim is to enable students to professionally design competence-oriented teaching for different learning groups in secondary levels I and II.
Course Topics	In this module, students explore the fundamentals of subject-specific didactics in 'Natural, Agricultural and Nutritional Sciences

	for Secondary School' and reflect on the interplay between subject-specific knowledge, curriculum guidelines and school practice. Building on this, they develop skills in competence-based lesson planning by analysing subject-specific competences, formulating learning objectives and structuring lesson plans. A further focus is on designing appropriate learning environments and implementing teaching methods. Students learn to apply different teaching formats and methods in a subject-specific manner and to design learning processes in an active, differentiated and effective way. The course introduces the key foundations of science didactics and addresses the following topics: - Introduction to subject didactics in natural science education - Competence orientation and task-based learning - Scientific ways of thinking and working - Learners' prerequisites, preconceptions and conceptual change - Didactic analysis, reduction and reconstruction - Connections to students' everyday lives and interdisciplinary learning in nature, technology, environment/ecology and health
Keywords	Competence orientation; task-based learning; scientific ways of thinking and working; preconceptions; didactic analysis; learning environments
Recommended Prerequisites	None
Propaedeutic Courses	
Teaching Format	The on-site course combines lecture-based teaching with seminar-style elements, group work, case studies, analysis of teaching materials and micro-teaching. Students gradually develop their own teaching and learning sequences, test selected elements, and reflect on them jointly in the light of key concepts in subject didactics.
Mandatory Attendance	According to the regulations
Specific Educational Objectives and Learning Outcomes	Finally, the module deals with observing, giving feedback and evaluating learning processes and performance in the subject of natural, agricultural and nutritional sciences at secondary schools. Forms of feedback that promote learning as well as criteria for transparent and competence-oriented performance assessment are

	addressed.
Specific Educational Objectives and Learning Outcomes (additional info.)	Knowledge and Understanding: Teachers - know the key foundations of science didactics and understand the importance of competence orientation, task-based learning, learners' prerequisites, preconceptions and didactic analysis for the planning of science lessons - understand scientific ways of thinking and working as a basis for developing subject-specific ideas and concepts Applying Knowledge and Understanding: Teachers - can didactically analyse, structure and reduce subject content from the natural sciences, agricultural sciences and nutritional sciences - plan competence-oriented and task-based learning processes that build on learners' prior knowledge, experiences and interests and promote scientific thinking and working Making Judgments: Teachers - can assess subject content, task formats and learning environments with regard to their didactic quality, connectivity, relevance to students' everyday lives and competence orientation - reflect on possible learning difficulties, preconceptions and misconceptions and evaluate which didactic approaches are suitable for further developing subject-specific concepts Learning Strategies: Teachers - develop strategies to guide learners towards independent, interconnected and reflective learning - promote conscious engagement with scientific questions, support the use of different sources of information, and create learning opportunities in which pupils can examine, expand and justify their ideas in a subject-specific way
Assessment	- Development and written elaboration of a subject-didactic teaching or communication sequence: 50% - Presentation or micro-teaching with didactic justification: 30% - Active participation, reflection tasks and discussion of case studies: 20%
Evaluation Criteria	- Subject-matter knowledge - Capacity for reflection

	- Judgment and quality of innovation - Practical applicability - Presentation skills - Accuracy and correctness of expression
Required Readings	Metzger, S., & Labudde, P. (Hrsg.). Fachdidaktik Naturwissenschaft: 1.–9. Schuljahr. Haupt / UTB. Nerdel, C. Grundlagen der Naturwissenschaftsdidaktik: Kompetenzorientiert und aufgabenbasiert für Schule und Hochschule. Springer Spektrum. Ausgewählte aktuelle Fachartikel und praxisorientierte Materialien zu naturwissenschaftlicher, agrarwissenschaftlicher und ernährungswissenschaftlicher Fachdidaktik.
Supplementary Readings	
Further Information	
Sustainable Development Goals (SDGs)	Quality education