Syllabus

Course Description

Course Title	Foundations of Subject-Specific Pedagogy II: Natural, Agricultural and Food Sciences in Upper Secondary Education
Course Code	83026
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 for secondary schools. The aim is to enable students to professionally design competence-oriented teaching for different learning groups at 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. The course focuses on the practical application of natural science didactics concepts, with particular emphasis on the following topics: - Didactic planning of experiments and laboratory work - Collecting, documenting and analysing scientific data - Quantitative and qualitative description of observation results - Designing learning environments inside and outside school - Using media, digital tools and independent information retrieval - Assessment, feedback and reflection on learning processes - Development and presentation of students' own teaching-learning or laboratory projects
Keywords	Competence orientation; Task-based learning; Experimentation and laboratory work; Data collection and analysis; Learning environments; Digital media
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 degree programme regulations
Specific Educational Objectives and Learning Outcomes	Another focus is on the design of suitable learning settings and the methodological implementation. Students learn to use different forms of teaching and methods in a subject-specific way and to design learning processes in an active, differentiated and effective way for learning. 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 key concepts for the didactic planning of experiments, laboratory work and inquiry-based learning - understand the importance of observation, data collection, analysis, documentation and presentation for the development of scientific competences Applying Knowledge and Understanding: Teachers - can plan and organise experimental activities and integrate them didactically into learning processes - guide learners in collecting scientific data, describing observation results quantitatively and qualitatively, interpreting results, and using appropriate media for research, documentation and presentation Making Judgments: Teachers - can assess experiments, laboratory projects, learning environments and digital media with regard to their subject-specific accuracy, feasibility, safety, competence orientation and learner orientation - reflect on whether methods, tasks and forms of assessment are suitable for promoting independent and inquiry-based learning Learning Strategies: Teachers - develop strategies to support learners in independent planning, carrying out, documenting and evaluating scientific investigations - promote cooperative work, critical use of sources, reflective presentation of results, and the ability to assess and further develop one's own learning and working process
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