

WFY MODULE DESCRIPTION

Subject	
Specialised German for Technics	
Semester	Semester hours per week
1 & 2	4
Module description	
<p>First Semester:</p> <p>The module "Specialised German for Technics" covers the development and use of technical language through the discussion of subject-specific topics and problems in the fields of mathematics and physics.</p> <p>It aims at students who want to acquire German as a foreign language and take up studies in the field of technology.</p> <p>Participants receive an introduction to subject-specific conventions and communication in the fields of mathematics and physics in German-speaking countries. A clear focus is the development of basic technical lexis and its confident written and oral usage.</p> <p>The module forms an important basis for subject teaching in the above-mentioned disciplines, both in the preparatory year and in the further course of studies.</p> <p>A direct application of the learned contents in practice is ensured through a close interlocking with the corresponding subject teaching.</p> <p>Second Semester:</p> <p>The second semester is very practice-oriented. The students consolidate the theoretical vocabulary from the fields of mathematics and physics that they acquired in the first semester. They expand their vocabulary according to the contents of the module "Mathematics 2" which includes the topics of statistics, integral calculus, curve discussion, functions and differential calculus as well as analytical geometry.</p> <p>Students also work on and consolidate the vocabulary from the module "Fundamentals of Technology", with the contents of construction technology, production technology and production preparation.</p> <p>In the 2nd semester, the NaWiTex laboratory takes place.</p>	

Participation requirement: German/English language level

German B1

Module objectives

First Semester:

The students have a solid basic vocabulary in the fields of mathematics and physics. They can formulate subject-specific terms, formulae, signs, definitions, processes and rules in German and present them in a comprehensible way. Students can use technical terminology correctly both orally and in writing and thus lay the foundation for a successful discussion of the subject areas in the subject lessons. The students write linguistically and technically correct laboratory reports and experimental protocols.

Second Semester:

The module aims to prepare students as best as possible for subject-related studies in a German-speaking country. Students train their linguistic skills by being able to perform tasks related to the situations they will encounter in their future studies, e.g. technical texts, contexts and lecture content.

The participants familiarise themselves with and consolidate the vocabulary of the relevant topics of the modules "Mathematics 2" and "Basics of Technics". This is promoted by targeted preparation and follow-up of the material.

The participants learn independently and in group work and thus prepare themselves for the coming studies.

They can actively participate in a group and adequately communicate technical content in class discussions. They can discuss and solve tasks in a team. They can present their results to the group and respond appropriately to questions.

They can prepare experimental protocols and laboratory reports, as well as create and present graphic descriptions.

Descriptions of the subjects by semester

Semester	Learning outcomes and summary of module content
1	Number terms <ul style="list-style-type: none"> • Terminology of the number ranges • Fractions, rational numbers, decimals, cardinals, ordinals
1	Basic arithmetic operations <ul style="list-style-type: none"> • Mathematical operations • Potencies, roots, brackets
1	Arithmetic laws with natural numbers <ul style="list-style-type: none"> • Term, formula, equation • Passive constructions • Nominalisation • Conjunction "in that"
1	Quantity theory <ul style="list-style-type: none"> • Nominalisation, verbs of request, text tasks • Communication about functions • Equations
1	Geometry <ul style="list-style-type: none"> • Eulerian geometry • Coordinate systems
1	Vectors
1	Sizes and units <ul style="list-style-type: none"> • Passive and passive forms • Articles • Verbs and nouns
1	Kinematics <ul style="list-style-type: none"> • Definitions: Constant acceleration, constant motion • Converting participial adjectives into relative clauses • Special verbs and their meaning (to lay back, to accelerate etc.)
1	Preparation of laboratory reports <ul style="list-style-type: none"> • Verbs for experiment and measurement • Elaboration of vocabulary for experiments • Experimental protocols
1	Dynamics <ul style="list-style-type: none"> • Newton's axioms - definitions • Force and types of forces- vocabulary (compounds; verbs) • Work, energy, power (vocabulary, the verb "verrichten")
1	Rotational dynamics <ul style="list-style-type: none"> • angular momentum, rotational energy and moment of inertia, angular momentum and conservation of angular momentum • Torque and laws of leverage
1	Thermodynamics <ul style="list-style-type: none"> • Thermodynamics: definition, heat propagation • Thermodynamics: gas equation and main laws of thermodynamics

Semester	Learning outcomes and summary of module content
2	Construction technology <ul style="list-style-type: none"> • Geometry, shapes and dimensions, presentation and dimensioning of technical drawings, connecting elements
2	Production technology <ul style="list-style-type: none"> • Production and manufacturing techniques, • cutting, machining, primary shaping • Preparation of laboratories
2	Production preparation <ul style="list-style-type: none"> • Company organisation, work preparation, work planning, calculation and computation of batch sizes, material requirements
2	Contents of the module Mathematics <ul style="list-style-type: none"> • Statistics, integral calculus, discussion of curves, functions and differential calculus, analytical geometry
2	NaWiTex laboratories <ul style="list-style-type: none"> • Introduction to the labs, participation and preparation of a lab report