Module Manual Wood Technology and Timber Product Technology

3HT-GLPM-10	Foundations of Product Development - Furniture	
Students are familiar with the principles of presenting, designing and constructing furniture and interior fittings and are able to apply these principles. They have the basic skills in the creation of drawings and can constructively work on space-related tasks involving color and material combinations in surface and space. For this purpose, they use the common construction details of furniture and interior fittings.	1st Semester	5 ECTS
3HT-GLTR-10	Foundations of the Cutting of Materials	
Students are enabled to characterize and configure cutting processes on wood and wood-based materials on the basis of wood-specific characteristics. Students are provided with the necessary skills to assess and evaluate the technological, qualitative and quantitative conditions as well as the economical performing of cutting processes. In accordance with the task to be realized, students are able to select the technologically, economically and ecologically suitable variants from the spectrum of available processes and materials and combine them to optimized machining processes.	1st Semester	5 ECTS
3HT-ALGI-10	Algebra for Engineering	
Students acquire basic knowledge in algebra and descriptive statistics, which are necessary to solve engineering problems.	1st Semester	5 ECTS
3HT-ACHH-10	Anatomy and Chemistry of Wood	
Students are enabled to understand the anatomical and chemical structure of wood in connection with the material properties and the processing characteristics. They acquire knowledge of the common adhesive systems and their effects.	1st Semester	5 ECTS
3HT-MWTA-10	Methods of Scientific and Technical Work	
The module imparts the methods and skills required to specify scientific and technical tasks, work out the problems/contradictions to be solved, and develop and evaluate possible solutions. Students gain the competence to organize projects and present their results. Appropriate software is used to present scientific	1st Semester	4 ECTS

works in accordance with the requirements. Using the example of a complex field of knowledge, students learn how special disciplines are combined to form a holistic solution for the completion of scientific works.		
3HT-PMAS-10	Company Structure	
In their first practical phase, students get to know their practice company and its individual functional areas. This includes the available machinery as well as working techniques and behavioral patterns. Students learn to see themselves as part of a team and apply the professional competence acquired in the theoretical phase in a paper. The direct interaction of different hierarchical levels of the company provides students with impulses for the development of their social competence.	1st Semester	6 ECTS
3HT-ANAI-20	Analysis for Engineering	
Students acquire basic knowledge in analysis and probability calculation, which is necessary for the solution of engineering tasks.	2nd Semester	5 ECTS
3HT-GLST-20	Foundations of Statics	
The module deals with the foundations of statics as a subarea of engineering mechanics. Students acquire basic knowledge and skills required to solve statics-related tasks and problems in the field of technical solid-state mechanics - statics of rigid bodies. They are enabled to understand the essential interrelationships of common load-bearing structures and constructions.	2nd Semester	5 ECTS
3HT-SEWS-20	Structure and Properties of Materials	
Students are enabled to understand the interrelationships between material structure, material properties and their use. They are able to make an appropriate selection of materials with their advantages and limitations for the respective design solutions and applications.	2nd Semester	5 ECTS
3HT-NTWG-20	Scientific and Technical Foundations for Engineering Professionals	
The module imparts foundations of physics, electrical engineering and technical fluid mechanics to the extent required for further studies. Students are provided with basic knowledge and skills to solve scientific and technical tasks and problems from the	2nd Semester	5 ECTS

perspective of general legal principles as well as those of material properties and material behavior.		
3HT-GLKB-20	Foundations of the Construction of Structural Elements	
The module imparts essential basics of the construction conditions of structural elements (windows, doors, stairs, load-bearing timber constructions, cladding). In this context, students acquire fundamental knowledge and skills in order to solve scientific and technical tasks and problems with respect to construction conditions. Furthermore, students are familiarized with the principles of building physics for the approximate dimensioning of heat and moisture protection tasks and the processing of tasks for the implementation of building physics measures.	2nd Semester	4 ECTS
3HT-PMAG-20	Application of Basic Skills	
During the second practical phase, students deepen their knowledge of the practice company by working in individual departments. They apply previously acquired technical and methodological foundations to practical issues thus strengthening their competences. Students develop their social skills by working directly in specific teams and participating in the planning and implementation of projects, products and processes.	2nd Semester	6 ECTS
3HT-GLFL-30	Foundations of Strength Theory	
The module deals with the foundations of elastostatics and strength theory as a subarea of engineering mechanics. Students acquire basic and advanced knowledge and skills to solve elastostatic tasks and problems in the field of technical solid-state mechanics.	3rd Semester	5 ECTS
3HT-CADE-30	CAD Product Development	
Students are familiarized with the use of modern CAD systems as well as the classification and integration of accompanying processes in possible corporate structures. Students practice the use of 2D-CAD and 3D-CAD software in suitable projects.	3rd Semester	5 ECTS

3HT-OFHV-30	Surface and Wood Finishing	
The students are able to select and combine suitable surface finishing processes taking into account technological, economic and ecological aspects. Furthermore, the module imparts knowledge of wood drying and modification. Students acquire knowledge and skills in the area of wood preservation.	3rd Semester	5 ECTS
3HT-QMMP-30	Quality Management, Measuring and Test Engineering	
Students understand planning, implementation, management, control and improvement as a comprehensive structure for the development and maintenance of a quality management system. They possess the necessary knowledge of the ISO 9000 family of standards and other relevant standards. Furthermore, they have methodological competence to identify, manage and moderate projects of continuous quality improvement. Students are able to select and use appropriate measurement technology and test methods in the fields of materials science, production engineering, requirements for furniture and interior fittings as well as timber structures and structural elements.	3rd Semester	5 ECTS
3HT-ENFE-30	English for Engineers	
This English language module meets the needs of Bachelor students in a cooperative degree course. It provides an introduction to general aspects of engineering and technical business in a company environment. It systematically develops key language skills for efficient communication in this field. Great emphasis is placed on helping students boost their lexical range (terminology). Within this modular business and special English course, students are encouraged to sharpen their communication skills and draw on their own experience at work.	3rd Semester	4 ECTS
3HT-PMIA-30	Introduction to Engineering Work	
Under supervision, students apply their knowledge of planning and analysis to the sub-processes of production as well as the overall process. They understand interrelationships from an engineering perspective and actively deal with individual process stages at their practice partner's company. This allows them to deepen and broaden their technical and methodological	3rd Semester	6 ECTS

skills. As part of the problem-solving process, students also develop their communication skills.		
3HT-ERPS-40	ERP Systems	
The module provides basic and in-depth knowledge of ERP systems and the associated business processes. This includes methods for planning and controlling manufacturing processes as well as essential procedures for material planning in the context of ERP systems. In addition to a functional overview, the module discusses the structure and mode of operation of ERP systems. A market overview and current trends round off the subject area. Practical exercises with a suitable ERP system help to apply and deepen the knowledge gained in the course.	4th Semester	5 ECTS
3HT-GLPP-40	Foundations of Production Site Planning	
The section on production planning aims to provide principles of planning and project management for production workshops and the entire company in the context of restructuring, reconstruction and replanning. The section on operating equipment provides a basic for understanding of the function of essential operating equipment and its rough dimensioning as well as the creation of related tasks.	4th Semester	5 ECTS
3HT-THHW-40	Technology of Wood-based Materials	
Students are able to describe and understand the basic processes necessary for the production of wood-based materials. In particular, they are familiar with the influence of technological processes during production on the properties of wood-based materials. They apply acquired knowledge to understand and evaluate individual processes.	4th Semester	5 ECTS
3HT-GLPA-40	Foundations of Production Automation	
Based on their knowledge of technological, material and process conditions, students are capable of programming numerically controlled woodworking machines and integrating them into production processes according to economic principles. Students are able to design, program and adapt automation solutions and test them with simulation tools. They are familiar with the structure and the necessary components for designing automated manufacturing and transport systems.	4th Semester	5 ECTS

3HT-GBWL-40	Foundations of Business Administration	
The module imparts the foundations of business administration. Students are able to understand the individual legal forms of companies and the principles of entrepreneurial activity. Moreover, they are familiar with the structures and functional areas of companies. In addition, they understand materials management as the basis for the production of goods. They possess knowledge of the individual cost elements and the cost centers in the manufacturing company. Students also know the essential features of designing production processes, economically effective production planning and the cost aspects of production.	4th Semester	4 ECTS
3HT-PMIW-40	Methods of Engineering Sciences	
Students apply the acquired methods of designing, programming and work preparation to the tasks of their practice partner in a largely independent manner. Thus, they develop their competence for interactive knowledge transfer. On this basis, they broaden their abilities to work scientifically on complex tasks. Students can constructively participate in the solution of practical problems using the tools of the engineering sciences. In this process, they apply and deepen their communicative and social skills.	4th Semester	6 ECTS
3HT-BTLP-50	Operational Transport and Warehousing Processes	
The module deals with the principles of operational transport and warehousing processes. Main focus is placed on purchasing/procurement, provisioning, stock/warehouse management and the transport of components and finished products. In addition to a functional overview and the interlinking of these logistics elements, the module addresses the technological flow of parts in production, the effective design of warehouse processes and the determination of transport costs.	5th Semester	5 ECTS
3HT-BWLI-50	Business Administration for Engineering Professionals	
Students are able to understand business economic interrelationships and use data material provided by specialists in business administration, such as tax consultants, for operational decision-making processes. You can evaluate the documents of a company's annual	5th Semester	5 ECTS

financial statement and independently determine and assess key business figures. Students gain an insight into the various forms of cost accounting, financing in the enterprise, and the economic evaluation of investment decisions. Furthermore, they have knowledge of marketing with a focus on acquisitions and are familiar with the most important interrelationships of company tax law.		
3HT-PSEM-50	Project Seminar	
The module imparts the principles of project management. Students are able to independently describe a project based on a technical-technological problem, to plan and coordinate its processing/realization and manage it with scientific methods. A concrete, industry-specific task is used to familiarize students with the typical phases of project management. Based on the task, students define the objectives and plan the necessary resources. After completing the project, the results are presented to the public and defended. Students are required to document their work and the results of the project.	5th Semester	5 ECTS
3HT-WPBE-50	Planning of Structural Elements	
The module imparts the principles of computer-aided calculation and design of structural elements as well as the construction of load-bearing timber structures. Based on the functional and structural-physical properties, the module conveys fundamental knowledge and skills that enable students to solve technical-technological tasks in the planning of structural elements and timber supporting structures.	5th Semester	5 ECTS
3HT-WPMÖ-50	Planning of Furniture and Interior Finishing	
Students are able to develop products for furniture and interior design that are straightforward to manufacture and make a targeted selection of materials and semi-finished products. They have the competence to combine functionality, quality and economic efficiency with special consideration of the requirements of a diversified furniture production process.	5th Semester	5 ECTS
3HT-WGLG-50	Principles of Design	
Students are familiar with the principles of design and capable of thinking and acting creatively. They possess an overview of design history and	5th Semester	4 ECTS

a basic methodological knowledge. Students are able to analyze design problems in order to develop ideas and concepts, convert them into concrete designs and communicate them. In this process, students develop their own positions, self-confidence and the ability to work in a team.		
3HT-WEWT-50	English for Woodworking Technology	
This English language module meets the needs of Bachelor students in a cooperative degree course. It provides an introduction to general aspects of woodworking technology in a company environment. It systematically develops key language skills for efficient communication in this field. Great emphasis is placed on helping students boost their lexical range (terminology). Within this modular business and special English course, students are encouraged to sharpen their communication skills and draw on their own experience at work.	5th Semester	4 ECTS
3HT-PMEI-50	Independent Engineering Practice	
Students develop their abilities to work independently, both professionally and methodically. They are able to solve complex operational tasks by selecting appropriate methods and integrating them into the professional context. This way, they expand the mentioned competences through theoretical knowledge and practical experience. Students train their ability to translate theoretical knowledge into practical action and reflect on their practical experience in theory. Students are qualified to participate innovatively and independently in complex operational tasks.	5th Semester	6 ECTS
3HT-WTBE-60	Technology of Structural Elements	
Students are able to analyze technological processes, calculate the intended results, assess them in terms of their economic efficiency and optimize them. According to the task to be realized, they can select and combine technologically, economically and ecologically suitable variants from the spectrum of available processes and production facilities. Students possess the competence to design and maintain manufacturing processes. They take into account aspects of occupational safety and environmental protection for their work.	6th Semester	5 ECTS

3HT-WKBE-60	Structural Elements as a Complex Solution	
Students are familiarized with the essential principles of the design and development of timber structures and timber components. In this context, the module deals with static-constructive, manufacturing and technological characteristics in a complex interdisciplinary task in the field of timber constructions.	6th Semester	5 ECTS
3HT-WTMÖ-60	Technology of Furniture and Interior Finishing	
Students are able to analyze technological processes, evaluate the results in terms of their economic efficiency and optimize them in a goal-oriented manner. According to the task to be realized, they can select the technologically, economically and ecologically suitable variants from the spectrum of available processes and production facilities and combine them to optimized production processes. Students possess the competence to design and maintain manufacturing processes. They are able to take into account the aspects of environmental protection and occupational safety for their work.	6th Semester	5 ECTS
3HT-WKMÖ-60	Furniture as a Complex Product	
Students are able to analyze and technically implement the conceptual designs of architects and designers, taking into account the respective requirements and regulations. In this context, students work on special design, manufacturing and production logistic features in a complex interdisciplinary task from the field of furniture and interior finishing. Students have extensive knowledge of the dependencies of functionality, form and construction as well as quality and economic efficiency.	6th Semester	5 ECTS
3HT-WFUE-60	Research and Development Seminar	
The module imparts the methods and skills required to specify, process and evaluate scientific and technical tasks. Students acquire the competence to organize and carry out projects in the fields of applied research, the development of technologies and processes and the construction of technical equipment. By using appropriate software, scientific projects and their results can be presented in accordance with their requirements. After initial guidance by the project supervisor, students work largely independently on the realization of the project. Working on a specific task, students will learn how specific	6th Semester	4 ECTS

scientific disciplines can be combined to form a holistic solution.		
3HT-WDPR-60	Design Project	
As competent partners of designers and architects, students are able to solve design tasks, develop functional constructions and plan them according to technical and economic aspects of production. Their knowledge of the connections between design, functionality, construction and production as well as quality and efficiency enables them to take on a wide range of functions in companies in the high-quality furniture and interior design sector.	6th Semester	4 ECTS
3HT-WQFE-60	Quality Assurance in Production	
Students develop their abilities to identify and analyze factors that influence the quality of industrial production and to initiate measures for the targeted improvement of products and processes. Based on analytical investigations in the manufacturing process, measures for quality improvement or quality stabilization are planned and organized. Students are familiarized with suitable measures of production support (TPM) to ensure stable and continuous production under economic and scheduling aspects. Case studies are used to examine cause-effect chains within the operational value-added process. Students are enabled to solve complex operational tasks by selecting appropriate methods and placing them in their technical context. This way they expand the mentioned fields of competence by acquiring theoretical knowledge and practical experience. Students practice the ability to translate theoretical knowledge into practical action and to theoretically reflect on practical experience. They are able to work innovatively and independently on complex operational tasks.	6th Semester	4 ECTS
3HT-WVFE-60	Networked Production	
Students are familiarized with the principles of flexible industrial manufacturing. In view of the requirements of Industry 4.0, focus is laid on the production of material goods. Starting from corporate structures, processes and procedures, operational manufacturing processes are analyzed and evaluated. As a result of these reflections, conclusions for the increase of flexibility and added value of production are derived. Students are able to compare and	6th Semester	4 ECTS

evaluate different production concepts and to propose measures or recommendations for their implementation. They are qualified to participate innovatively and independently in complex operational tasks.		
3HT-BTHT-60	Bachelor Thesis - Wood and Wood-based Materials Technology	
With the bachelor thesis, students demonstrate their ability to independently solve, critically evaluate and develop a practice-related problem within a given period of time. They apply previously acquired practical and theoretical knowledge and scientific methods and are able to present their findings in a presentation.	6th Semester	12 ECTS