HAWK Fakultät Bauen und Erhalten Hildesheim

Module Handbook

Bachelor of Wood Engineering

Valid since winter semester 2019/20

Hochschule für angewandte Wissenschaft und Kunst Hildesheim/Holzminden/Göttingen
University of Applied Sciences and Arts

www.hawk.de/b

The module handbook lists all the compulsory and elective modules for the Bachelor's degree program in wood engineering at HAWK. Module descriptions may be revised as required and as decided by the relevant study commission, taking full account of accreditation conditions; in particular, the range of non-compulsory specialization modules may vary depending on the actual teaching capacity available.

The compulsory modules are mandatory for all wood engineering students and take place as indicated. The modules for the first semester are the same and mandatory for all students. As early as the 2nd semester, students are required to refine their profiles by choosing one of the two majors:

- Structural wood engineering
- Furniture and interior finishing

The decision about the choice of the specialization must be submitted in written form to the examination office in the last week of lectures in the first semester at the latest. For reasons of a formal nature, almost all the modules from the second to the fourth semester are compulsory elective modules; however, these are clearly assigned to the respective majors and are compulsory, i.e. they cannot be selected or exchanged. The modules for the majors cannot be selected from the associated areas according to the overview table below until the fifth semester onwards.

The specialization modules are offered either in the winter or in the summer semester; the details can be found in the respective module description. A total of 5 specialization modules for the major are to be completed; 4 of these are scheduled in the fifth semester of the standard period of study, and another practical or special project is to be completed in the seventh semester in connection with the final thesis. It cannot be guaranteed that all the specialization modules will take place in the specified semester

in each case; this applies in particular to modules in which the use of teaching assistants is planned. A basic offer with the required minimum number of specialization modules for the major selected is only ensured in the winter semester; students are not entitled to have any specific specialization modules take place. Specialization modules with fewer than 5 participants cannot be held. These constraints, necessary for the maintenance of an orderly lecture schedule, must be taken into account by the students in the individual planning of their course of study.

It is strongly recommended that students choose the specialization modules, the practical semester, the practical project as well as the final thesis including the corresponding preparation module with great care and that they combine their courses in the best possible way. To do so, students are strongly advised to seek academic counseling.

The Bachelor's degree awarded upon completion of the program is a first professional qualifying degree at Level 1 of the Qualifications Framework for German Higher Education Qualifications. The degree qualifies the student to enter studies at Level 2 (Master's programs). Graduates who have successfully completed a major in *Structural Wood Engineering* can easily enroll in the Master's program in *Civil Engineering* at HAWK in Hildesheim.

Module overview

(1) Compulsory modules (for all students in the Wood Engineering study program)

Module no.	Module name	Credit points/semester							Work-load	Course attendance time	Home study	Type of exam
		1	2	3	4	5	6	7				
BH 1-1	Building materials science	6							180	60	120	K2
BH 1-2	Mathematics	6							180	90	90	K2
BH 1-3	Building construction 2, Building physics 1	6							180	90	90	K2
BH 1-4	Technical mechanics, static 1	6							180	60	120	K2
BH 1-6	Key qualifications	3							90	30	60	ST
BH 1-7	Wood technology	3							90	30	60	K1
BH 2-14	Engineering computer science		3						90	30	60	K1
BH 4-2	Drywalling and finishing consstruction				6				180	60	120	ST
BH 6-1	Practical training phase						30		750	10	740	ST
BH 7-2	Module for preparation of final thesis							6	180	3	177	ST
BH 7-4	Bachelor's thesis							12	360	6	354	AA

(2) Mandatory compulsory elective modules (major: Structural wood engineering)

Module no.	Module name	Credit points/semester							Work-load	Course attendance time	Home study	Type of exam
		1	2	3	4	5	6	7				
BH 2-1	Wood engineering project 1		6						180	60	120	PA
BH 2-3	Building construction, Building physics 2		6						180	90	90	K2
BH 2-4	Technical mechanics, static 2		6						180	90	90	K2
BH 2-9	CAD-1		6						180	60	120	ST
BH 2-12	Wood as a building material		3						90	30	60	K1
BH 3-1	Wood engineering project 2			6					180	60	120	PA
BH 3-2	Wood engineering			6					180	60	120	K2
BH 3-3	Planning technology, prefabrication			6					180	60	120	K2
BH 3-4	Technical mechanics, static 3			6					180	60	120	K2
BH 3-5	CAD-2			6					180	90	90	K2
BH 4-1	Wood engineering project 3				6				180	60	120	PA
BH 4-3	Wood engineering				6				180	90	90	K2

Module no.	Module name	Credit points/semester							Work-load	Course attendance time	Home study	Type of exam
BH 4-4	Solid construction, Geotechnics				6				180	90	90	K2
BH 4-5	Surveying				6				180	90	90	ST
BH 5-1	Wood engineering project 4					6			180	60	120	PA
BHV xx	*a total of four specialization modules, at least three of which must be from the chosen major*					6			180	60	120	indiv.
BHV xx						6			180	60	120	indiv.
BHV xx						6			180	60	120	indiv.
BHV xx						6			180	60	120	indiv.
BH 6-1	Practical training phase						30		750	10	740	ST
BH 7-1	Individual profile studies (HAWK Plus)							6	180	60	120	indiv.
BHV 98	Practical training project (for the major)							6	180	3	177	indiv.

(3) Mandatory compulsory elective modules (major: Furniture and interior finishing)

Module no.	Module name	Credit points/semester							Work-load	Course attendance time	Home study	Type of exam
		1	2	3	4	5	6	7				
BH 2-6	Construction project		6						180	60	120	PA
BH 2-8	Theory of construction		6						180	60	120	K2
BH 2-10	CAD 1 Furniture		6						180	60	120	ST
BH 2-11	Wood type identification		3						90	30	60	K1
BH 2-13	Building survey, technical drawing		6						180	60	120	ST
BH 3-6	Production technology project, business administration			6					180	90	90	PA
BH 3-7	Wood production technology			6					180	60	120	K2
BH 3-8	Woodworking machines			6					180	90	90	K2
BH 3-9	Measurement and control technology			6					180	60	120	K2
BH 3-10	CAD 2 Furniture			6					180	60	120	ST
BH 4-6	Project C-technology				6				180	60	120	PA
BH 4-8	Project C-technology				6				180	90	90	K2
BH 4-9	Production planning				6				180	90	90	K2
BH 4-10	Business administration in industrial companies				6				180	60	120	K2
BH 5-6	Project 2:					6			180	90	90	PA
BHV xx						6			180	60	120	indiv.

Module no.	Module name	Credit points/semester							Work-load	Course attendance time	Home study	Type of exam
BHV xx	*a total of four specialization modules, at least three of which must be from the chosen major*					6			180	60	120	indiv.
BHV xx						6			180	60	120	indiv.
BHV xx						6			180	60	120	indiv.
BH 6-1	Practical training phase						30		750	10	740	ST
BH 7-1	Individual profile studies (HAWK Plus)							6	180	60	120	indiv.
BHV 98	Practical training project (for the major)							6	180	3	177	indiv.

(4) Compulsory elective modules/majors modules

Module no.	Module name	Credit points	Work-load	Course attendance time	Home study	Type of exam
Majors modules in general						
BHV 81	Mudbrick building	6	180	60	120	ST
BHV 82	Safety and health protection during construction work	6	180	60	120	K2
BHV 98	Practical training project	6	180	3	177	PA
BHV 99	Special project	6	180	3	177	PA
Major: Structural wood engineering						
BHV 30	CAD/CAM and joinery in wood construction	6	180	60	120	KI+PA
BHV 31	Special areas in wood engineering	6	180	60	120	K2*
BHV 33	Wooden bridge construction	6	180	60	120	ST*
BHV 34	Fire safety and wood protection (currently not offered)	6	180	60	120	R
BHV 35	Fire safety	3	90	30	60	K1
BHV 39	Steel engineering	6	180	60	120	K2
BHV 40	Energy-efficient building	6	180	60	120	ST
BHV 44	Building acoustics in wood construction	3	90	30	60	K1
BHV 47	FEM in structural wood engineering	6	180	60	120	ST
BHV 48	Supporting structures in wood construction	6	180	60	120	ST
Major: Furniture and interior finishing)						
BHV 02	CAD-CAM practical training project	6	180	60	120	ST
BHV 03	CIM – Computer-integrated furniture production	6	180	60	120	PA
BHV 04	Additive production technology	6	180	60	120	PA
BHV 05	Experimental furniture design	6	180	60	120	ST
BHV 06	Freehand drawing for engineerings	6	180	60	120	ST
BHV 07	IMOS 1 Object-oriented CAD/CAM	6	180	60	120	PA
BHV 08	IMOS 2 practical examples	6	180	60	120	PA
BHV 09	Digitization in the wood and furniture industries	6	180	60	120	ST
BHV 10	MSR laboratory (currently not offered)	6	180	60	120	ST
BHV 11	Furniture design	6	180	60	120	

*Prerequisite: Successful completion of BH 3-2 or BB 4-5

Note: The list of specialization modules in the elective area is not exhaustive; additional modules may be added based on demand. These modules are not offered every semester, but rather only as announced. If there are fewer than five participants, students are not entitled to have the module take place.

HAWK Fakultät Bauen und Erhalten Hildesheim

Part 1

Structural wood engineering

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Building materials science**	**BH 1-1**		10.03.2021
Study semester: 1st semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: All	Responsible for module: Prof. Dr.-Ing. Iris Marquardt	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Students acquire basic knowledge of the properties of building materials and their behavior under different stresses. They learn the basic principles for the appropriate use of building materials with regard to load-bearing behavior and durability, as well as building physics requirements.
They are enabled to independently expand and update learned knowledge from the areas covered.

Contents:

1. Basic studies: Technical building regulations; systematics of building materials and building material properties; basics of material testing and quality assurance; microstructure and structure of building materials; mechanical behavior; behavior towards liquids and gases; thermal behavior; fire behavior

2. Mineral binding agents

3. Concrete: Raw materials; classification of fresh and hardened concretes; test methods; production, processing and quality assurance; strength and deformation behavior of normal concrete; durability; concretes for special requirements; mortars

4. Steel: Production, testing , requirements

5. Artificial stone and brickwork

6. Synthetic materials in the building industry

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr.-Ing. Iris Marquardt	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Mathematics**	**BH 1-2**		01.09.2018
Study semester: 1st semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 6 SWS
Allocation to study specialization: All	Responsible for module: Prof. Dr.-Ing. Axel Stödter	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

- Students are able to apply mathematical techniques, procedures and algorithms.
- They are able to solve problems from the field of building technology.

Contents:

- Equations and systems of linear equations
- Determinants and matrices
- Vector algebra
- Functions and curves
- Differential calculus
- Basic principles of integral calculus

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	6 LVS	Course attendance time		Home study	
	-	Lecture	90 h	Course accompanying and exam preparation	90 h
	-	Exercise			
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Building construction, Building physics 1**	**BH 1-3**		01.09.2018
Study semester: 1st semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 6 SWS
Allocation to study specialization: All	Responsible for module: Prof. Dr.-Ing. Alfred Breukelman	Type of teaching, group size, if applicable: Lecture/exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
none	none
Study/examination achievements/ examination types Written examination (K2) -	**If applicable, weighting of the study/examination achievements**

Module objectives/desired learning outcomes:

- Students acquire knowledge of the elements of load-bearing and non-load-bearing building structures and basic principles of building physics.
- They acquire knowledge about standardization and building authority licensing.
- They develop the ability to recognize structural design and building physics principles and modes of action in context and discuss them across different disciplines.
- They develop the ability to independently implement structural design and building physics requirements in solving building and construction tasks in context.
- They are able to apply design rules independently.
- They are able to independently produce construction drawings.

Contents:

Building design:
- Basic legal principles of building planning
- Construction drawings
- Building structure and load-bearing systems
- Structural stability
- Basic principles of brickwork construction
- Walls used in brickwork construction
- Walls used in wood construction
- Soil and foundation systems
- Structural waterproofing and drainage systems
- Ceiling and floor design

Building physics:
- Basic principles of building physics
- Protection against heat and humidity

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. A. Breukelman (Building design)	4 LVS	Course attendance time		Home study	
Prof. Dr. M. Deck (Building physics)	2 LVS	Lecture	60 h	Course accompanying and exam preparation	90 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**Technical mechanics, static 1**	**BH 1-4**		06.04.2021
Study semester	Offered in		Credit points		Semester week hours
1st semester	WS		6 CP		4 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
All		Prof. Dr.-Ing. Thomas Wedemeier	Lecture		
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Written examination (K2) -	

Module objectives/desired learning outcomes:

- Students are confident in their use of relevant quantities and terms of engineering mechanics.
- They are proficient with respect to the simplest basic principles and methods of plane statics.
- They are able to model the structural system of simple structures.
- They are able to model the structural system of simple structures.

Contents:

- Forces, momentum and force systems
- Equilibrium and equivalence
- Stability of rigid bodies
- Basic terminology used in structural engineering, types of structures and their application
- Method of sections, shear diagram
- Reaction forces, internal force variable of statically determinate supports
- Load case superposition

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr.-Ing. Thomas Wedemeier	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Key qualifications**	**BH 1-6**		01.09.2018
Study semester: 1st semester / Offered in: WS		Credit points: 3 CP		Semester week hours: 2 SWS
Allocation to study specialization: All	Responsible for module: Prof. Dr. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture and exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types: Student research paper with colloquium -	If applicable, weighting of the study/examination achievements

Module objectives/desired learning outcomes:

Students are aware of the different methods of general presentation.
They are able to prepare presentations targeted to specific audiences.
They are able to create posters with a color plotter.
They are aware of the design concepts and their implementation.

Contents:

Basic principles of presentation technology
Slides and poster design
Preparing presentations, stage fright
Delivering presentations
Post-presentation analysis
Rhetoric
Examples of presentations from professional practice and university, job application

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	2 LVS	Course attendance time		Home study	
	-	Lecture	20 h	Course accompanying and exam preparation	60 h
	-	Exercise	10 h		
	-	Other			
Total classroom time	**2 LVS**	**Total workload**			**90 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wood technology**	**BH 1-7**		01.09.2018
Study semester: 1st semester / Offered in: WS		Credit points: 3 CP		Semester week hours: 2 SWS
Allocation to study specialization: All	Responsible for module: N.N.	Type of teaching, group size, if applicable		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Written examination (K1) -	

Module objectives/desired learning outcomes:

Students learn about the structure of wood and how it is formed.
They will be able to explain the wood technological properties based on the structure and select and apply different types of wood in practice.

Contents:

Forest, timber harvesting, eco-cycle
European and tropical types of wood, differences
Wood anatomy
Structure of a wood cell
Tasks of a wood cell
Types of cells
Wood growth
Wood properties based on the structure of the wood

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	2 LVS	Course attendance time		Home study	
	-	Lecture	20 h	Course accompanying and exam preparation	60 h
	-	Exercise			
	-	Other	10 h		
Total classroom time	**2 LVS**	**Total workload**			**90 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wood construction project 1**	**BH 2-1**		01.12.2018
Study semester: 2nd semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Thomas Wedemeier	Type of teaching, group size, if applicable: Project work with supervision in groups		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Project work with colloquium -	

Module objectives/desired learning outcomes:

The students acquire knowledge of the development of a design and drawing representation of a simple project based on a wood frame construction.
They should be able to independently apply the construction rules of timber construction to simple building tasks and recognize the structural, design, functional, economic, energy and building physics requirements of timber frame construction using the example of a simple building project, in the overall context.

Contents:

- Execution and detail planning
- Development and drawing of the construction details of the building.
- Calculations and verifications of protection against dampness

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. Th. Wedemeier	4 LVS	Course attendance time		Home study	
	-	Lecture	10 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other	50 h		
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Building construction, Building physics 2**	**BH 2-3**		01.09.2018
Study semester: 2nd semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 6 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.- Ing. Alfred Breukelman	Type of teaching, group size, if applicable: Lecture/exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Successful completion of BH 1-3
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

- Students acquire knowledge of the elements of load-bearing and non-load-bearing building structures and basic principles of building physics.
- They acquire knowledge about standardization and building authority licensing.
- They develop the ability to recognize structural design and building physics principles and modes of action in context and discuss them across different disciplines.
- They develop the ability to independently implement structural design and building physics requirements in solving building and construction tasks in context.
- They are able to apply design rules independently.
- They are able to independently produce construction drawings.

Contents:

Building design:
- Wood building construction
- Wooden frame construction, wooden panel construction
- Sloped roofs
- Flat roofs
- Windows and doors
- Stairways

Building physics:
- Protection against moisture
- Soundproofing and fire safety

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. A. Breukelman (Building design)	4 LVS	Course attendance time		Home study	
Prof. Dr. M. Deck (Building physics)	2 LVS	Lecture	60 h	Course accompanying and exam preparation	90 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**Technical mechanics, static 2**	**BH 2-4**		06.04.2021
Study semester	Offered in		Credit points		Semester week hours
2nd semester	SS		6 CP		6 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
Structural wood engineering		Prof. Dr.-Ing. Thomas Wedemeier	Lecture		
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites
	BH 1-4, Static 1
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

- Students are able to assess the state of forces of statically determinate structures.
- They acquire skills for determining the internal stress of parts of the structure.
- They are able to assess the load-bearing capacity of structures.
- They acquire the prerequisites for the material-dependent design and dimensioning of load-bearing structures.

Contents:

- Reaction forces, internal force variables of statically determinate supports
- Stresses, strain, sliding, material laws
- Determination of area values of cross-sections used in construction (center of gravity, moments of area, ...)
- Determination of normal stresses due to bending moments and normal forces
- Determination of shear stresses due to shear forces and torsion
- Stresses in case of failing tension zone

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr.-Ing. Thomas Wedemeier	6 LVS	Course attendance time		Home study	
	-	Lecture	90 h	Course accompanying and exam preparation	90 h
	-	Exercise			
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**CAD-1**	**BH 2-9**		14.03.2019
Study semester: 2nd semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Volker Krämer	Type of teaching, group size, if applicable: Lecture with integrated exercises		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types Student research paper with colloquium -	If applicable, weighting of the study/examination achievements

Module objectives/desired learning outcomes:

Students
- are able to take advantage of digital tools in their working environment.
- know the requirements of a CAD system in the field of timber construction.
- possess extensive theoretical and practical basic CAD knowledge.
- are able to process complete 3D wooden structures.
- are able to create 2D plans and lists on the basis of 3D wood structures.

Contents:

- Creation of spatially complex 3D wood structures
- Labeling and dimensioning sections
- Perspectives, photorealistic representations and of assembly plans
- Configuring and automatic output for lists and dimensioned single part drawings
- Each student creates a 3D spatial structure of his or her own choice and generates from it all the planning documents required for the production of the structure.

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wood as a building material**	**BH 2-12**		24.08.2018
Study semester: 2nd semester / Offered in: SS		Credit points: 3 CP		Semester week hours: 2 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Volker Krämer	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Wood technology BH1-7
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K1) -	

Module objectives/desired learning outcomes:

Students
- learn about wood and wood-based materials.
- learn about the mechanical strength and damage mechanisms of wood.
- learn how to sort construction timber according to the normative principles.
- learn how to independently evaluate the stiffness, strength and durability of structural timber.
- learn about the manufacture, structure and properties of glued laminated timber.

Contents:

- Wood anatomy/wood formation
- Wood characteristics/mechanical properties of structural timber
- Durability of structural timber
- Wood physics
- Strength grading of structural timber
- Cut timber/solid wood products
- Glued laminated timber
- Lab exercise

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. V. Krämer	2 LVS	Course attendance time		Home study	
	-	Lecture	30 h	Course accompanying and exam preparation	60 h
	-	Exercise			
	-	Other			
Total classroom time	**2 LVS**	**Total workload**			**90 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**Engineering computer science**	**BH 2-14**		14.03.2019
Study semester	Offered in		Credit points		Semester week hours
2nd semester	SS		3 CP		2 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
Structural wood engineering		Prof. Dr.-Ing. Volker Krämer	Lecture		
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K1) -	

Module objectives/desired learning outcomes:

Students
- are able to take advantage of digital tools in their working environment.
- are familiar with basic terminology used in data processing.
- know common construction-specific application software for standard engineering tasks.
- know the structure of user input in structural analysis software (FEM).
- know that results of computer-aided calculations must be subjected to critical scrutiny.
- can solve engineering tasks with the help of spreadsheets they have created themselves.
- know the basics of a programming language.
- are able to read and debug program code.
- are familiar with basic algorithms and data structures.
- understand the meaning and application of object-oriented programming.

Contents:

- Presentation of software solutions for standard engineering tasks
- Criteria for the selection of suitable software solutions
- short presentation of FEM software, a design program and a CAS solution
- Introduction to a spreadsheet program
- Introduction to a programming language

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Dipl.-Ing. C. Seifart	2 LVS	Course attendance time		Home study	
	-	Lecture	30 h	Course accompanying and exam preparation	60 h
	-	Exercise			
	-	Other			
Total classroom time	**2 LVS**	**Total workload**			**90 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wood construction project 2**	**BH 3-1**		01.12.2018
Study semester: 3rd semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Thomas Wedemeier	Type of teaching, group size, if applicable: Project work with supervision in groups		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Project work with colloquium -	

Module objectives/desired learning outcomes:

Students are to acquire basic knowledge in planning, working through and drawing a project from the field of wood panel construction and timber frame construction and be able to independently apply the construction rules of timber construction.
In the process, they will acquire knowledge and skills in integrated and interdisciplinary building design and become familiar with production and manufacturing methods used in timber construction.

Contents:

- Development of a planning concept including investigation of different solution variants (preliminary planning)
- Development of the final building and structural solution and integration of the specialized planning with graphic representation of the structural draft (draft planning)
- Preparation of position plans as well as static calculation and dimensioning (permit planning)
- Development and drawing of the structure with structural details and all the information necessary for the execution (execution planning)

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. Th. Wedemeier	6 LVS	Course attendance time		Home study	
	-	Lecture	10 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other	50 h		
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wood engineering**	**BH 3-2**		23.08.2018
Study semester: 3rd semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Volker Krämer	Type of teaching, group size, if applicable: Lecture with exercises		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Wood as a building material
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Students
- are able to independently design components of simple timber structures in building construction and dimension them in accordance with standards.
- learn to connect the components to each other in a force-fit manner using pin-shaped, metallic fasteners.
- are enabled to apply timber construction-specific solution concepts for simple timber construction projects and to transfer these solution concepts independently to other planning tasks in timber construction.

Contents:

- History, built objects, wood technology
- Basic principles for the dimensioning of structural components made of wood and wood-based materials (e.g. beams, supports)
- Verification of the stability of buckling bars and bending beams made of wood and wood-based materials that are at risk of tilting
- Basic principles for the dimensioning of pin-shaped fasteners (e.g. bar dowels, nails)
- Basic principles for the design and dimensioning of simple load-bearing structures made of wood

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. V. Krämer	4 LVS	Course attendance time		Home study	
	-	Lecture	40 h	Course accompanying and exam preparation	120 h
	-	Exercise	20 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Planning technology, prefabrication**	**BH 3-3**		09.07.2018
Study semester: 3rd semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Volker Krämer	Type of teaching, group size, if applicable: Contact studies		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	1/2 Planning technology – 1/2 Prefabrication

Module objectives/desired learning outcomes:

Students
- are familiar with common types of construction for wooden dwellings.
- are familiar with common roof, ceiling and wall constructions.
- know that the constructions have to meet static, structural and production requirements.
- can weigh up the advantages and disadvantages of workshop production versus construction site production.
- know the function of roof, ceiling and wall panels.
- know the spatial interaction of panels to brace buildings.

- are familiar with preliminary planning, draft planning, permit planning, execution planning.
- Tendering, scheduling
- Calculation

Contents:

- Presentation and discussion of various forms of construction in residential construction
- Evaluation criteria for construction types
- Evaluation criteria for material
- Details of roof, ceiling and wall constructions
- Information on the topics of elements, manufacturing, transport and assembly
- Basic information on load transfer and bracing

- Breakdown of costs according to DIN 276
- Application of the HOAI (fee calculation for architects and engineers)
- Preparation of specifications
- Basic information on the building code
- Basic information on planning regulations
- Basic information on tendering, awarding and invoicing
- Examples

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	2 LVS	Course attendance time		Home study	
Dipl.-Ing. C. Seifart	2 LVS	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Technical mechanics, static 3**	**BH 3-4**		06.04.2021
Study semester: 3rd semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Thomas Wedemeier	Type of teaching, group size, if applicable: Lecture with integrated exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	BH 1-4, BH 2-4
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

- Students are able to assess the deformation behavior of load-bearing structures and to quantitatively determine deformation variables.
- They acquire skills for determining the load-bearing behavior of statically indeterminate structures as a result of load and constraint actions.
- They are able to assess the influence of deformations on the load-bearing behavior.
- They are able to assess the stability failure of prismatic and planar components.
- They understand the quantitative determination of the bending buckling and bending torsion buckling loads of prismatic components.
- They are able to analyze the behavior of supporting structures under mobile loading.

Contents:

- Solution of the differential equation for the bending line for simple conditions
- Application of the working theorem of elastostatics to plane composite static systems to determine deformations
- Determination of internal forces of statically indeterminate systems by means of force magnitude methods
- Checks of internal forces calculations of statically indeterminate systems
- Elastic stability of bar supports
- Determination of influence lines

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr.-Ing. Thomas Wedemeier	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**CAD-2**	**BH 3-5**		14.03.2019
Study semester: 3rd semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 6 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. V. Krämer	Type of teaching, group size, if applicable: Lecture with integrated exercises		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	BH 2-9 CAD-1
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Students
- deepen their knowledge of CAD-1 on a 3D structure from engineering timber construction.
- are able to apply many of the special modules required in timber construction.
- learn in the accompanying lecture the theoretical basics of 2D and 3D CAD/CAM systems.
- know the meaning of e.g. layer technology, coordinate systems and different element types.
- know interfaces for data exchange with other CAD or CAM systems.
- know how to extract and insert digital information from BIM models.

The lecture and the exercise are coordinated in such a way that theory and practice contribute to the overall understanding.

Contents:

- 3D design and plan output in engineered timber construction
- Working with a joinery program
- Creating details for the automatic production of wall, ceiling and roof elements
- Generating lamella extension and press bed in glulam construction
- Creating parameterized 3D designs
- Control of joinery systems using the example of Hundegger K2 joinery machine
- Using the stair program

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	4 LVS	Course attendance time		Home study	
Teaching assistant	2 LVS	Lecture	90 h	Course accompanying and exam preparation	90 h
	-	Exercise			
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wood construction project 3**	**BH 4-1**		01.12.2018
Study semester: 4th semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Thomas Wedemeier	Type of teaching, group size, if applicable: Project work with supervision in groups		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Project work with colloquium -	

Module objectives/desired learning outcomes:

Students should be able to independently design, construct, dimension, and draw the structural framework and structural details of a structurally challenging wooden building.
They are enabled to develop their own learning strategies and conduct independent research. Within the project work they develop their own team, conflict, facilitation and leadership skills and are also able to conduct project discussions in English. The project improves their motivation, professional open-mindedness and agility, as well as their creativity.

Contents:

- Project management with special consideration of interdisciplinary and intercultural aspects (project language)
- Design and comparison of structural systems in terms of aesthetics, wood construction, statics and economics
- Structural design of the selected structure
- Processing of the service phases of preliminary planning, draft, permit and execution planning
- Proposals and plans for the manufacture, prefabrication and assembly of the building, as well as the choice of building materials
- Example for the preparation of a timber construction-specific construction contract cost estimate (calculation of the final sum)
- Considerations for optimizing the economy/cost of the selected design
- Preparation of the contract awarding
- Presentation of milestone-specific results of project processing in English

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. Th. Wedemeier	6 LVS	Course attendance time		Home study	
	-	Lecture	10 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other	50 h		
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**Drywalling and finishing construction**	**BH 4-2**		01.09.2018
Study semester	Offered in		Credit points		Semester week hours
4th semester	SS		6 CP		4 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
All		N.N.	Lecture/exercise		
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Student research paper with colloquium -	

Module objectives/desired learning outcomes:

- Knowledge of materials, types of construction, elements of construction, principles of construction of interior design
- Knowledge of soundproofing and fire safety for interior finishing
- Ability to develop an execution and detailed design plan taking into account the technical, structural, functional and design interrelationships and dependencies
- Ability to independently prepare execution and detailed drawings

Contents:

- Materials in drywall and finishing
- Wall, ceiling and floor design
- Designs with special requirements
- Development of a finishing plan as execution and detail planning within the scope of a practical project

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. A. Breukelman	4 LVS	Course attendance time		Home study	
	-	Lecture	30 h	Course accompanying and exam preparation	120 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wood engineering**	**BH 4-3**		03.07.2018
Study semester: 4th semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 6 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Volker Krämer	Type of teaching, group size, if applicable: Contact studies		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Wood engineering BH 3-2
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	2/3 Wood engineering - 1/3 Wood paneling

Module objectives/desired learning outcomes:

Students
learn further joining techniques in timber construction and how to verify them in accordance with standards.
Students are also able to determine the compliance of lanyards and the influence of compliance on internal forces and buckling lengths.
Students learn how to determine internal forces on composite members (rigid and yielding) and how to verify composite members.
They learn to design and verify large-format timber components, with non-parallel component edges.
- They are familiar with the load-bearing behavior of a shear field.
- They are able to calculate wooden panels with the static system of a shear field.
- They can carry out the structural safety and serviceability for wooden panels according to the European design standard.
- They know about the necessary storage conditions and the interaction of wooden panels.
- They can plan and calculate the spatial bracing of buildings with panels.
- They are familiar with several forms of construction of wooden panels.

Contents:

- Methods of joining in carpentry
- Specially designed dowels
- Screws
- Yielding of connections
- Bending resistant connections, spring stiffnesses
- Composite components
- Pitched roof girders
- Saddle roof girders (straight / curved bottom chord)

- Calculating the internal and external force magnitudes on wooden panels
- Explanation of the design rules based on European standardization
- Static verifications for wall, ceiling and roof panels
- Calculation of the deformation of wooden panels
- Calculation of bracing systems

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. V. Krämer	4 LVS	Course attendance time		Home study	
Dipl.-Ing. C. Seifart	2 LVS	Lecture	90 h	Course accompanying and exam preparation	90 h
	-	Exercise			
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**Solid construction, Geotechnics**	**BH 4-4**		01.06.2021
Study semester	Offered in		Credit points		Semester week hours
4th semester	SS		6 CP		6 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
Structural wood engineering		Prof. Dr.-Ing. Michael Hansen	Lecture		
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites
	Static 1 - 3
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Solid construction:
Students know the basic principles of reinforced concrete design in uncracked and cracked conditions. They are able to perform a cross-section design under normal force and bending stress and to determine longitudinal bending reinforcement on the basis of this. In addition, they can calculate the reinforcement resulting from a shear load and outline the total reinforcement required. In addition, students know how to design brickwork structures and how to execute them correctly from a structural and design point of view.

Geotechnics:
Students have a basic working knowledge of soil identification and classification.
They are able to understand a subsoil report and to dimension simple shallow foundations. They also have a basic knowledge of deep foundations and foundation improvements.

Contents:

Solid construction (reinforced concrete construction)
- Basic principles of bending and shear force design of reinforced concrete components
- Dimensioning and construction of standard structural elements (beams, uniaxially spanned ceilings, ...)
- Design rules and basics of reinforcement design

Solid construction (brickwork construction)
- Building materials and load-bearing behavior of brickwork
- Basic principles in the design of brickwork structures

Geotechnics:
- Formation of soils as well as methods for soil identification
- Classification of soils according to various criteria and determination of relevant soil mechanical properties
-
- Load-bearing behavior of the subsoil and measures for subsoil improvement
- Methods of securing the excavation pit

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr.-Ing. habil. M. Hansen	4 LVS	Course attendance time		Home study	
Prof. Dr.-Ing. G. Maybaum	2 LVS	Lecture	90 h	Course accompanying and exam preparation	90 h
	-	Exercise			
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Surveying**	**BH 4-5**		01.09.2018
Study semester: 2nd semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 6 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Axel Stödter	Type of teaching, group size, if applicable		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types: Student research paper without colloquium -	If applicable, weighting of the study/examination achievements

Module objectives/desired learning outcomes:

Students will independently apply appropriate procedures to the methods listed below using concrete and practical examples and compile or map and draw evaluations of professional practice. They should be able to estimate required accuracies and increase them, if necessary. They are to acquire practical knowledge with special reference to the project study in the field of planning and construction as well as for inventories for redevelopment objects.

Contents:

- Basic principles of surveying
- Building survey
- Staking out buildings
- Leveling
- Recording the profile
- Determining area and mass
- Trigonometry, introduction to tachymetry, traverse line, tachymetric survey
- Routing elements for road construction, etc.

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. A. Stödter	6 LVS	Course attendance time		Home study	
Dipl.-Ing. S. Wethkamp	4 LVS	Lecture	30 h	Course accompanying and exam preparation	90 h
	-	Exercise	60 h		
	-	Other			
Total classroom time	**10 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wood construction project 4**	**BH 5-1**		01.12.2018

Study semester	Offered in	Credit points	Semester week hours
5th semester	WS	6 CP	4 SWS

Allocation to study specialization	Responsible for module	Type of teaching, group size, if applicable
Structural wood engineering	Prof. Dr.-Ing. Thomas Wedemeier	Project work with supervision in groups
Can also be credited to study program: -		Language of instruction: German

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Project work with colloquium -	

Module objectives/desired learning outcomes:

Students are to acquire in-depth and comprehensive knowledge (LP 1 - 6) within the scope of planning timber structures for new buildings as well as for existing buildings. On the one hand, the students are to independently develop an overall concept for the new construction of a structure made of wood, with special consideration for a specific utilization concept. On the other hand, the students are to deal with the special features of construction in existing buildings by being given a construction task on an existing building. The respective supporting structures are to be designed, constructed, dimensioned, depicted in drawings, assessed in terms of construction costs and prepared for the invitation to tender in the form of service specifications. They are enabled to develop their own learning and work strategies and to conduct independent research to successfully complete complex planning tasks.

Within the project work they develop their own team, conflict, facilitation and leadership skills. They are also able to conduct project discussions in English. In addition, the project improves their motivation, professional open-mindedness and agility, as well as their creativity.

Contents:

- Development, set-up and operation of a project management system for the respective sub-projects with special consideration of a quality-oriented, on-time and efficient project processing (quality, deadlines, costs)
- Complete draft (LP 1 - 6) of a new building in timber construction taking into account a special concept of use
- Complete draft (LP 1 - 6) of a timber construction within the scope of a conversion/extension or modernization measure (construction in existing buildings)
- Detailed design of the structures, justification of the choice of building materials
- Detailed description of the manufacturing, prefabrication and assembly process
- Determination of construction costs in the degree of accuracy of a cost calculation (DIN 276)
- Presentation of ways to optimize the economic efficiency of the designs in the investment and operation phases
- Processing of work phases 1 to 6 according to HOAI

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. Th. Wedemeier	6 LVS	Course attendance time		Home study	
	-	Lecture	10 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other	50 h		
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Practical training phase**	**BH 6-1**		01.06.2021
Study semester: 6th semester / Offered in WS: + SS		Credit points: 30 CP		Semester week hours: n/a
Allocation to study specialization: All	Responsible for module: Prof. Dr. Ing. Mario Hanusrichter	Type of teaching, group size, if applicable: Pre- and post-seminar, practical phase		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
All CP from 1st and 2nd semester, a further 45 CP from semesters 3 to 5	
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Seminar paper Student research paper without colloquium	15 weeks of practical training (translates as 24 CP, pass/fail research paper (report) and seminar paper (translates as 6 CP) will be graded

Module objectives/desired learning outcomes:

- Application of previously acquired knowledge and skills in everyday professional practice, engineering work
- Gain competencies in an area that the student has designated for future employment
- Working in the training center is designed to give students some orientation for finding a topic for their Bachelor's thesis
- Stimulation to link non-specialist content with the student's own training to date
- Development of independent decision-making ability
- Presentation of the professional and social competence acquired during the course of study

Contents:

Practical phase supervised by the wood engineering program of the Faculty of Architecture, Engineering and Conservation in a company, e.g. in the wood construction or furniture industry, in an engineering office, or comparable The company/institution must ensure that engineering supervision is possible during the practical phase, i.e. at least 1 engineer must provide supervision in the company (training facility). The regulations for the practical phase according to the Praxisphasenordnung (PraxisO) must be observed.

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Entire teaching staff, per student	0.1 LVS	Course attendance time		Home study	
	-	Lecture		Course accompanying and exam preparation	740 h
	-	Exercise			
	-	Other	10 h		
Total classroom time	**0.1 LVS**	**Total workload**			**750 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Individual profile studies**	**BH 7-1**		01.09.2018
Study semester: 7th semester / Offered in WS: + SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: All	Responsible for module: HAWK plus	Type of teaching, group size, if applicable: Course-dependent, according to information from HAWK plus		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types Course-dependent -	If applicable, weighting of the study/examination achievements

Module objectives/desired learning outcomes:

Areas of competence of the Individual Profile Studies (IPS)
- Thinking and acting like an entrepreneur
- Leadership skills
- Communication and individual skills
- Social and societal skills
- Media skills
- Interdisciplinary specialized knowledge
- Language competence

Contents:

See the IPS Module Handbook for the current range of courses (https://www.hawk.de/de/hochschule/organisation-und-personen/zentrale-einrichtungen/hawk-plus/individuelles-profilstudium)

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
up to	4 LVS	Course attendance time		Home study	
	-	Lecture		Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other	60 h		
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Module for preparation of the final thesis**	**BH 7-2**		01.09.2018
Study semester: 7th semester / Offered in WS: + SS		Credit points: 6 CP		Semester week hours: n/a
Allocation to study specialization: All	Responsible for module: N.N.	Type of teaching, group size, if applicable: Supervised exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types Student research paper without colloquium -	If applicable, weighting of the study/examination achievements

Module objectives/desired learning outcomes:

- Knowledge and skills in the application of the methods of academic work and writing
- Gain knowledge and skills in a field that the student has designated for his/her Bachelor's thesis
- Ability to grasp and present the state of the art in a given subject area
- Development of independent decision-making ability
- Presentation of acquired expertise in a given subject area

Contents:

For example:
Students conduct comprehensive literature searches covering not only monographs, but also journals and other series.
Prepare and test experimental setups, test procedures or similar
Participation in seminars on methods of academic work and writing (participation possible as early as 2nd semester)

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
All professors, per student	0.2 LVS	Course attendance time		Home study	
	-	Lecture		Course accompanying and exam preparation	177 h
	-	Exercise			
	-	Other	3 h		
Total classroom time	**0.2 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Bachelor's thesis**	**BH 7-4**		01.09.2018
Study semester: 7th semester / Offered in WS: + SS		Credit points: 12 CP		Semester week hours: n/a
Allocation to study specialization: All	Responsible for module: N.N.	Type of teaching, group size, if applicable: n/a		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
174 CP from semesters 1 bis 6	
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Final thesis with colloquium -	

Module objectives/desired learning outcomes:

- Ability to grasp and present the state of the art in a given subject area
- Develop and demonstrate independent decision-making skills
- Presentation of the acquired methodological competence
- Presentation of total expertise acquired in a given subject area

Contents:

For example:
Conducting comprehensive literature reviews with classification and evaluation and/or
Carrying out practical investigations, test procedures or similar with evaluation, discussion and the student's own conclusions
and/or
Performing technical calculations with factual/technical appropriate presentation and/or
Developing drafts from a given subject area in the field of wood engineering

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
First examiner	0.3 LVS	Course attendance time		Home study	
Second examiner	0.1 LVS	Lecture		Course accompanying and exam preparation	354 h
	-	Exercise			
	-	Other	6		
Total classroom time	**0.4 LVS**	**Total workload**			**360 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Practical training project**	**BHV 98**		01.09.2018
Study semester: 7th semester / Offered in WS: + SS		Credit points: 6 CP		Semester week hours: n/a
Allocation to study specialization: All	Responsible for module: N.N.	Type of teaching, group size, if applicable: Supervised external project		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Project work with colloquium -	

Module objectives/desired learning outcomes:

Practical training projects can be carried out in all the subject areas of wood engineering
Depending on the task, a subject-specific or interdisciplinary project with high practical relevance is carried out in cooperation with an engineering firm, a company, a specialist authority, etc. Students deal with a task that is narrowly defined in terms of content and scope, carry out experimental (laboratory/field) investigations if necessary, and work out solutions largely independently.
They are able to assess the effects and consequences of the solutions they have developed themselves, and they can make technical and economic assessments and classifications.

Contents:

Practical projects with different focuses from the fields of wood engineering or interdisciplinary
The assignment is coordinated with the students, the project partners and the supervisors for the intended task of the Bachelor's thesis and takes into account the specialization (major) chosen by the students.

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Entire teaching staff, per student	0.2 LVS	Course attendance time		Home study	
	-	Lecture		Course accompanying and exam preparation	177 h
	-	Exercise	3 h		
	-	Other			
Total classroom time	**0.2 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

HAWK Fakultät Bauen und Erhalten Hildesheim

Part 2

Furniture and interior finishing

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Building materials science**	**BH 1-1**		10.03.2021
Study semester: 1st semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: All	Responsible for module: Prof. Dr.-Ing. Iris Marquardt	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Students acquire basic knowledge of the properties of building materials and their behavior under different stresses. They learn the basic principles for the appropriate use of building materials with regard to load-bearing behavior and durability, as well as building physics requirements.
They are enabled to independently expand and update learned knowledge from the areas covered.

Contents:

1. Basic studies: Technical building regulations; systematics of building materials and building material properties; basics of material testing and quality assurance; microstructure and structure of building materials; mechanical behavior; behavior towards liquids and gases; thermal behavior; fire behavior

2. Mineral binding agents

3. Concrete: Raw materials; classification of fresh and hardened concretes; test methods; production, processing and quality assurance; strength and deformation behavior of normal concrete; durability; concretes for special requirements; mortars

4. Steel: Production, testing , requirements

5. Artificial stone and brickwork

6. Synthetic materials in the building industry

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr.-Ing. Iris Marquardt	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Mathematics**	**BH 1-2**		01.09.2018
Study semester: 1st semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 6 SWS
Allocation to study specialization: All	Responsible for module: Prof. Dr.-Ing. Axel Stödter	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

- Students are able to apply mathematical techniques, procedures and algorithms.
- They are able to solve problems from the field of building technology.

Contents:

- Equations and systems of linear equations
- Determinants and matrices
- Vector algebra
- Functions and curves
- Differential calculus
- Basic principles of integral calculus

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	6 LVS	Course attendance time		Home study	
	-	Lecture	90 h	Course accompanying and exam preparation	90 h
	-	Exercise			
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Building construction, Building physics 1**	**BH 1-3**		01.09.2018
Study semester: 1st semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 6 SWS
Allocation to study specialization: All	Responsible for module: Prof. Dr.-Ing. Alfred Breukelman	Type of teaching, group size, if applicable: Lecture/exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
none	none
Study/examination achievements/ examination types Written examination (K2) -	**If applicable, weighting of the study/examination achievements**

Module objectives/desired learning outcomes:

- Students acquire knowledge of the elements of load-bearing and non-load-bearing building structures and basic principles of building physics.
- They acquire knowledge about standardization and building authority licensing.
- They develop the ability to recognize structural design and building physics principles and modes of action in context and discuss them across different disciplines.
- They develop the ability to independently implement structural design and building physics requirements in solving building and construction tasks in context.
- They are able to apply design rules independently.
- They are able to independently produce construction drawings.

Contents:

Building design:
- Basic legal principles of building planning
- Construction drawings
- Building structure and load-bearing systems
- Structural stability
- Basic principles of brickwork construction
- Walls used in brickwork construction
- Walls used in wood construction
- Soil and foundation systems
- Structural waterproofing and drainage systems
- Ceiling and floor design

Building physics:
- Basic principles of building physics
- Protection against heat and humidity

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. A. Breukelman (Building design)	4 LVS	Course attendance time		Home study	
Prof. Dr. M. Deck (Building physics)	2 LVS	Lecture	60 h	Course accompanying and exam preparation	90 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**Technical mechanics, static 1**	**BH 1-4**		06.04.2021
Study semester	Offered in		Credit points		Semester week hours
1st semester	WS		6 CP		4 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
All		Prof. Dr.-Ing. Thomas Wedemeier	Lecture		
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Written examination (K2) -	

Module objectives/desired learning outcomes:

- Students are confident in their use of relevant quantities and terms of engineering mechanics.
- They are proficient with respect to the simplest basic principles and methods of plane statics.
- They are able to model the structural system of simple structures.
- They are able to model the structural system of simple structures.

Contents:

- Forces, momentum and force systems
- Equilibrium and equivalence
- Stability of rigid bodies
- Basic terminology used in structural engineering, types of structures and their application
- Method of sections, shear diagram
- Reaction forces, internal force variable of statically determinate supports
- Load case superposition

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr.-Ing. Thomas Wedemeier	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Key qualifications**	**BH 1-6**		01.09.2018
Study semester: 1st semester / Offered in: WS		Credit points: 3 CP		Semester week hours: 2 SWS
Allocation to study specialization: All	Responsible for module: Prof. Dr. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture and exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types: Student research paper with colloquium -	If applicable, weighting of the study/examination achievements

Module objectives/desired learning outcomes:

Students are aware of the different methods of general presentation.
They are able to prepare presentations targeted to specific audiences.
They are able to create posters with a color plotter.
They are aware of the design concepts and their implementation.

Contents:

Basic principles of presentation technology
Slides and poster design
Preparing presentations, stage fright
Delivering presentations
Post-presentation analysis
Rhetoric
Examples of presentations from professional practice and university, job application

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	2 LVS	Course attendance time		Home study	
	-	Lecture	20 h	Course accompanying and exam preparation	60 h
	-	Exercise	10 h		
	-	Other			
Total classroom time	**2 LVS**	**Total workload**			**90 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wood technology**	**BH 1-7**		01.09.2018
Study semester: 1st semester / Offered in: WS		Credit points: 3 CP		Semester week hours: 2 SWS
Allocation to study specialization: All	Responsible for module: N.N.	Type of teaching, group size, if applicable		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Written examination (K1) -	

Module objectives/desired learning outcomes:

Students learn about the structure of wood and how it is formed.
They will be able to explain the wood technological properties based on the structure and select and apply different types of wood in practice.

Contents:

Forest, timber harvesting, eco-cycle
European and tropical types of wood, differences
Wood anatomy
Structure of a wood cell
Tasks of a wood cell
Types of cells
Wood growth
Wood properties based on the structure of the wood

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	2 LVS	Course attendance time		Home study	
	-	Lecture	20 h	Course accompanying and exam preparation	60 h
	-	Exercise			
	-	Other	10 h		
Total classroom time	**2 LVS**	**Total workload**			**90 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Construction project**	**BH 2-6**		01.09.2018
Study semester: 2nd semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: N.N.	Type of teaching, group size, if applicable: Project work		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Module BH 2-8 Take course on Theory of construction at same time
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Project work with colloquium -	

Module objectives/desired learning outcomes:

Students learn about the development and design process in the furniture industry by developing a new product for the marketplace. They learn about and apply techniques to generate new ideas.
The project is carried out in project groups with a maximum of 5 students, who learn to organize themselves.

Contents:

Definition of objectives and development of specifications
Procedure according to VDI 2221
Use of various idea generation techniques
Selection of findings, evaluation procedure for the selection of a concept
Drafting and elaboration according to valid standards
Project presentation with lecture, poster and colloquium

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	6 LVS	Course attendance time		Home study	
Teaching assistant	6 LVS	Lecture	10 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other	50 h		
Total classroom time	**12 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Construction theory**	**BH 2-8**		01.09.2018
Study semester: 2nd semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: N.N.	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Students learn the systematics and methodology of drafting/design according to VDI 2221 and how to apply construction methods under supervision on the basis of practical examples.

Students are able to assess and evaluate a design on the basis of various criteria.

Contents:

Construction procedures according to VDI 2221
Application of construction methods intuitively, systematically-analytically, triz-based,
Methods for drafting and elaboration
Special features of technical drawing and drawing organization according to ISO 9001
Materials in furniture and interior finishing

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**CAD 1 Furniture**	**BH 2-10**		19.03.2019
Study semester: 2nd semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: Prof. Dr.-Ing. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture with exercises		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types: Student research paper without colloquium -	If applicable, weighting of the study/examination achievements

Module objectives/desired learning outcomes:

Students should be able to independently create extensive 2D and 3D design drawings using a CAD program and understand CAD technology.

Contents:

- General handling of AutoCad, basic terminology
- Coordinates, object snap methods, drawing commands
- Object selection, change commands
- Layering techniques
- Text and dimensioning
- Standards
- Parameterization and geometric dependencies
- Model/paper area (layout)
- Coordinate systems, moving in three-dimensional space
- View control, 3D orbit
- Volume modeling
- Change commands in 3D
- Lighting
- Animation and presentation
- Shade and render techniques

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Dipl.-Ing. E. Puls, M.A.	4 LVS	Course attendance time		Home study	
	-	Lecture	30 h	Course accompanying and exam preparation	120 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wood type identification**	**BH 2-11**		01.02.2019
Study semester: 2nd semester / Offered in: SS		Credit points: 3 CP		Semester week hours: 2 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: N.N.	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Written examination (K1) -	

Module objectives/desired learning outcomes:

Students are able to
carry out wood type identification macroscopally
carry out wood type identification
microscopally

Contents:

Wood anatomy
Structure of wood
Types of cells
Structure of a wood cell
Exercises in using a microscope
European types of wood
Tropical types of wood

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Dr. R. Buchholz	2 LVS	Course attendance time		Home study	
	-	Lecture	15 h	Course accompanying and exam preparation	60 h
	-	Exercise	15 h		
	-	Other			
Total classroom time	**2 LVS**	**Total workload**			**90 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Building survey, technical drawing**	**BH 2-13**		01.02.2019
Study semester: 2nd semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: N.N.	Type of teaching, group size, if applicable: Lecture with exercises		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Student research paper with colloquium -	

Module objectives/desired learning outcomes:

- Basic understanding in the recording of spatial conditions and constructive relationships based on the recording and representation in floor plans, sections and views
- Ability to plan a building survey and the drawings required in the process
- Ability to work in teams and work in an organized manner in groups
- Ability to independently make initial building surveys
- Development of spatial perception
- Ability to represent in two and three dimensions (axonometric and perspective)
- Training of sensitivity and creativity related to space and shape

Contents:

- History of building surveys
- Areas of application in building surveys
- Techniques used in building surveys
- Tools of the trade, equipment and instruments, CAD
- Levels of precision of the construction survey
- Two- and three-dimensional design basics and representation techniques
- Freehand drawing perspective
- Correspondence between representation and design

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
C. Prinzorn, Verw.-Prof.	2 LVS	Course attendance time		Home study	
Teaching assistant	2 LVS	Lecture	15 h	Course accompanying and exam preparation	120 h
	-	Exercise	45 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Engineering computer science**	**BH 2-14**		14.03.2019
Study semester: 2nd semester / Offered in: SS		Credit points: 3 CP		Semester week hours: 2 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Volker Krämer	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K1) -	

Module objectives/desired learning outcomes:

Students
- are able to take advantage of digital tools in their working environment.
- are familiar with basic terminology used in data processing.
- know common construction-specific application software for standard engineering tasks.
- know the structure of user input in structural analysis software (FEM).
- know that results of computer-aided calculations must be subjected to critical scrutiny.
- can solve engineering tasks with the help of spreadsheets they have created themselves.
- know the basics of a programming language.
- are able to read and debug program code.
- are familiar with basic algorithms and data structures.
- understand the meaning and application of object-oriented programming.

Contents:

- Presentation of software solutions for standard engineering tasks
- Criteria for the selection of suitable software solutions
- short presentation of FEM software, a design program and a CAS solution
- Introduction to a spreadsheet program
- Introduction to a programming language

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Dipl.-Ing. C. Seifart	2 LVS	Course attendance time		Home study	
	-	Lecture	30 h	Course accompanying and exam preparation	60 h
	-	Exercise			
	-	Other			
Total classroom time	**2 LVS**	**Total workload**			**90 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**Production technology project, business administration**	**BH 3-6**		01.09.2018
Study semester	Offered in		Credit points		Semester week hours
3rd semester	WS		6 CP		4 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
Furniture and interior finishing		N.N.	Project work		
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites
	BH2-6, BH2-8, BH3-8, courses taken at the same time
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Project work with colloquium -	

Module objectives/desired learning outcomes:

Students learn about interdisciplinary project work in groups.
Students use existing knowledge from the lectures and combine it with knowledge they have acquired on their own.
The project runs under a fixed deadline and milestones to be met precisely.

Contents:

In this project work, students work on tasks from actual practice of industrial companies. In the process, students identify the interfaces and produce a specification sheet. The results of the project work are to be presented in a practical manner for an audience of engineers.

A design is translated into work plans and manufacturing is planned. The workstations and machines are to be dimensioned and arranged in an operating layout. An organigram for the people employed in the plant is to be drawn up on the basis of the production and the operational environment.
The costs of the enterprise will be presented in an operational accounting sheet and the products calculated using overhead costing.

If possible, approaches for optimization are to be found on the basis of the findings.

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	6 LVS	Course attendance time		Home study	
	-	Lecture		Course accompanying and exam preparation	120 h
	-	Exercise	60 h		
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wood production technology**	**BH 3-7**		01.09.2018
Study semester: 3rd semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: N.N.	Type of teaching, group size, if applicable: Lecture with exercises		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types: Written examination (K2) -	If applicable, weighting of the study/examination achievements

Module objectives/desired learning outcomes:

Students learn about the organization of manufacturing and production.
They devise and evaluate manufacturing techniques on the basis of real-world examples.

Contents:

How manufacturing is organized and carried out
Types of manufacturing
Types of organization
Manufacturing techniques based on DIN 8580 for wood and wood-based materials
Cutting technology for wood
Production planning and control
Basic principles of materials handling
Examples from actual practice, supported by excursions

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	4 LVS	Course attendance time		Home study	
	-	Lecture	50 h	Course accompanying and exam preparation	120 h
	-	Exercise	10 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Woodworking machines and machine elements**	**BH 3-8**		01.09.2018
Study semester: 3rd semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 6 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: Prof. Dr.-Ing. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Students learn about the basic elements of as well as different concepts for woodworking machines. Furthermore, they should be able to evaluate different machines and create a catalog of criteria for the evaluation and investment calculation of different machines and production facilities.

Contents:

- Machine elements
- Materials and processing technologies
- Joining elements, rotary motion elements
- Bearings and guides
- Machine concepts and designs
- Frame components (set-up, materials)
- Static and dynamic loads
- Criteria for the analysis of machine components
- Vibration analyses
- Drives and controls (motors, gearboxes and powertrains)
- Electrical and electronic components
- Cost-effectiveness calculations, cost and performance analyses
- Interlinked and automated systems such as machining centers, manufacturing cells, manufacturing systems

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. F. Prekwinkel	4 LVS	Course attendance time		Home study	
Teaching assistant	2 LVS	Lecture	90 h	Course accompanying and exam preparation	90 h
	-	Exercise			
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Laboratory practical training

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Measurement and control technology**	**BH 3-9**		01.09.2018
Study semester: 3rd semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: Prof. Dr.-Ing. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Students acquire basic knowledge of sensor and actuator technology and a fundamental understanding of control processes. They should be enabled to realize simple control systems themselves on the basis of electronic contact controls and PLCs. They are to acquire the necessary expertise to plan the realization of extensive production control systems and to coordinate and control their realization by skilled technicians.

Contents:

- Defining terminology: Measurement, control and regulation
- Basic principles of measurement technology
- Elements making up electrical contact controls
- Electronic contact controls
- Electronic process controls SPS, microprocessors and PCs
- Programming microprocessors
- Programming SPS
- Sensor technology
- Basic principles of regulation technology: Characteristics of control loop elements
- Self-stable combinations
- Fuzzy regulators and neuronal networks

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. F. Prekwinkel	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**CAD 2 Furniture**	**BH 3-10**		19.03.2019
Study semester: 3rd semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: Prof. Dr.-Ing. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture with exercises		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	BH 2-10 CAD 1
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Student research paper without colloquium -	

Module objectives/desired learning outcomes:

Students are enabled to independently create design drawings using a discipline-specific, parametric CAD program.

Contents:

- Program overview, history
- General handling of Cimatron, basic terminology
- Coordinates, object snap methods, drawing commands
- Object selection, change commands
- Text and dimensioning
- Standards
- Processing of data collected elsewhere
- Overview of other CAD applications

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Dipl.-Ing. E. Puls, M.A.	2 LVS	Course attendance time		Home study	
Teaching assistant	2 LVS	Lecture	30 h	Course accompanying and exam preparation	120 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Drywalling and finishing construction**	**BH 4-2**		01.09.2018
Study semester: 4th semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: All	Responsible for module: N.N.	Type of teaching, group size, if applicable: Lecture/exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Student research paper with colloquium -	

Module objectives/desired learning outcomes:

- Knowledge of materials, types of construction, elements of construction, principles of construction of interior design
- Knowledge of soundproofing and fire safety for interior finishing
- Ability to develop an execution and detailed design plan taking into account the technical, structural, functional and design interrelationships and dependencies.
- Ability to independently prepare execution and detailed drawings

Contents:

- Materials in drywall and finishing
- Wall, ceiling and floor design
- Designs with special requirements
- Development of a finishing plan as execution and detail planning within the scope of a practical project

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. A. Breukelman	4 LVS	Course attendance time		Home study	
	-	Lecture	30 h	Course accompanying and exam preparation	120 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Project C-technology**	**BH 4-6**		01.02.2019
Study semester: 4th semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: Prof. Dr.-Ing. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture, practical lab training		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Successful completion of BH 3-8, BH 3-9
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Project work with colloquium -	

Module objectives/desired learning outcomes:

Students obtain practical experience in using CNC systems. They independently set up CNC machines for specific examples and design, create, test and document CNC programs.
They are enabled to develop their own learning strategies and conduct independent research. Within the project work they develop their own team, conflict, facilitation and leadership skills. They are also able to conduct project discussions in English.
The project improves their motivation, professional open-mindedness and agility, as well as their creativity.

Contents:

- Introduction to the existing CNC systems
- Commissioning of CNC systems
- Creating CNC programs
- Testing and quality assurance in CNC programming
- Documentation
- Optimization of CNC programs
- Optimization of process strategies
- Material-specific process strategies
- Start-up and shut-down movements
- Optimization of tool movements

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. F. Prekwinkel	4 LVS	Course attendance time		Home study	
Dipl.-Ing. N. Linda	2 LVS	Lecture	20 h	Course accompanying and exam preparation	120 h
Teaching assistant	2 LVS	Exercise	40 h		
	-	Other			
Total classroom time	**8 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**C-technology**	**BH 4-8**		01.09.2018
Study semester: 4th semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 6 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: Prof. Dr.-Ing. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Successful completion of BH 3-8, BH 3-9
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Students get to know the structure and operation of CNC-controlled manufacturing machines and systems. In addition, they are able to independently create CNC programs and install them without errors. They are also able to analyze the structure of CAD/CAM systems and implement them in practice. They analyze different functionalities and CAD/CAM strategies and evaluate them with regard to their suitability.

Contents:

- Structure and components of CNC systems
- CNC programming processes
- Methods of computer-aided work scheduling
- Structure of CAD/CAM
- Systems interfaces
- Integration of CAD/CAM systems
- Production control technology
- Integration of methods for quality assurance in automated manufacturing
- Integration of sensors and process controls

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. F. Prekwinkel	4 LVS	Course attendance time		Home study	
Teaching assistant	2 LVS	Lecture	90 h	Course accompanying and exam preparation	90 h
	-	Exercise			
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Laboratory practical training

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Production planning**	**BH 4-9**		01.09.2018
Study semester: 4th semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 6 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: Prof. Dr.-Ing. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Students become familiar with different planning and organizational methodologies and be able to use them as examples. Furthermore, they are able to analyze operational processes in wood and furniture production and evaluate them with regard to their economic efficiency.

Contents:

- Goals of production planning and management
- Strategic, tactical and operational production planning
- Production planning and control system concepts
- Legal and organizational framework
- Structural and process organization
- Flow production, workshop production, group production
- Layout planning
- Warehouse and transport planning
- Profitability calculations
- Key figures for the evaluation of production units
- Investment and financing
- Technology and environmental management
- Project management and controlling

In addition, along with the lectures there will be an offer of field trips to leading manufacturers of furniture, components and supplier parts.

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. F. Prekwinkel	4 LVS	Course attendance time		Home study	
Teaching assistant	2 LVS	Lecture	90 h	Course accompanying and exam preparation	90 h
	-	Exercise			
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Field trips

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Business administration in industrial companies**	**BH 4-10**		01.02.2019
Study semester: 4th semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: N.N.	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Written examination (K2) -	

Module objectives/desired learning outcomes:

on cost and performance accounting: Students
- are able to reconcile data from external accounting to data from the cost-performance analysis
- can carry out cost center and cost unit accounting on the basis of different, operational accounting sheets within the framework of full cost accounting
- are able to carry out unit costing on a full cost basis in the form of divisional and overhead costing
- can interpret the results of various forms of full and partial cost accounting and use them for decision-making

on investment decisions: Students
- can understand and apply basic principles of decision theory
- are to assess the advantageousness of investments with the help of selected suitable procedures of static and/or dynamic investment calculation
- are able to select and apply investment appraisal methods that also take into account non-monetary benefits and inputs

Contents:

on cost and performance accounting:
- Accruals and deferrals
- Cost type accounting, in particular determination of imputed costs
- Cost center accounting and cost object accounting in full cost accounting systems
- Cost accounting in the context of different forms of partial cost accounting
- Basic concept of machine hourly rate calculation
- Cost analysis on the basis of flexible standard costing

on investment decisions:
- Basic principles of business administration decision-making theory
- Monetary and non-monetary methods of investment appraisal
- Static and dynamic processes in investment appraisal
- Decisions based on security, risk, uncertainty

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	4 LVS	Course attendance time		Home study	
	-	Lecture	50 h	Course accompanying and exam preparation	120 h
	-	Exercise	10 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**Project Furniture**	**BH 5-6**		01.09.2018
Study semester	Offered in		Credit points		Semester week hours
5th semester	WS		6 CP		6 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
Furniture and interior finishing		Prof. Dr.-Ing. Frank Prekwinkel	Lecture and workshops		
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites
	BH 4-8, BH 4-9
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Project work with colloquium -	

Module objectives/desired learning outcomes:

Students experience the planning, design and manufacturing of furniture or furniture systems including sales and costing for a product line in a completed project. The course focuses not only on aspects of design and construction. In the same way, they develop and present appropriate measures in the area of company organization, production planning, planning of turnover and sales measures as well as accompanying strategy and organization measures.

Contents:

- Designing furniture elements
- Design implementation
- Corporate planning or corporate development
- Cost and sales planning
- Sales and marketing planning
- Planning of sales support measures
- Development of a business plan (business strategy)

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. F. Prekwinkel	6 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	90 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Field trips

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Practical training phase**	**BH 6-1**		01.06.2021
Study semester: 6th semester / Offered in WS: + SS		Credit points: 30 CP		Semester week hours: n/a
Allocation to study specialization: All	Responsible for module: Prof. Dr. Ing. Mario Hanusrichter	Type of teaching, group size, if applicable: Pre- and post-seminar, practical phase		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
all CP from 1st + 2nd semester; additional 45 CP from semester 3 to 5	
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Seminar paper Student research paper without colloquium	15 weeks practical training (translates as 24 CP, pass/fail research paper (report) and seminar paper (translates as 6 CP) will be graded

Module objectives/desired learning outcomes:

- Application of previously acquired knowledge and skills in everyday professional practice, engineering work
- Gain competencies in an area that the student has designated for future employment
- Working in the training center is designed to give students some orientation for finding a topic for their Bachelor's thesis
- Stimulation to link non-specialist content with the student's own training to date
- Development of independent decision-making ability
- Presentation of the professional and social competence acquired during the course of study.

Contents:

Practical phase supervised by the wood engineering program of the Faculty of Architecture, Engineering and Conservation in a company, e.g. in the wood construction or furniture industry, in an engineering office, or comparable The company/institution must ensure that engineering supervision is possible during the practical phase, i.e. at least 1 engineer must provide supervision in the company (training facility). The regulations for the practical phase according to the Praxisphasenordnung (PraxisO) must be observed.

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Entire teaching staff, per student	0.1 LVS	Course attendance time		Home study	
	-	Lecture		Course accompanying and exam preparation	740 h
	-	Exercise			
	-	Other	10 h		
Total classroom time	**0.1 LVS**	**Total workload**			**750 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Individual profile studies**	**BH 7-1**		01.09.2018
Study semester: 7th semester / Offered in WS: + SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: All	Responsible for module: HAWK plus	Type of teaching, group size, if applicable: Course-dependent, according to information from HAWK plus		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types: Course-dependent -	If applicable, weighting of the study/examination achievements

Module objectives/desired learning outcomes:

Areas of competence of the Individual Profile Studies (IPS)
- Thinking and acting like an entrepreneur
- Leadership skills
- Communication and individual skills
- Social and societal skills
- Media skills
- Interdisciplinary specialized knowledge
- Language competence

Contents:

See the IPS Module Handbook for the current range of courses (https://www.hawk.de/de/hochschule/organisation-und-personen/zentrale-einrichtungen/hawk-plus/individuelles-profilstudium)

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Up to	4 LVS	Course attendance time		Home study	
	-	Lecture		Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other	60 h		
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Module for preparation of the final thesis**	**BH 7-2**		01.09.2018
Study semester: 7th semester / Offered in WS: + SS		Credit points: 6 CP		Semester week hours: n/a
Allocation to study specialization: All	Responsible for module: N.N.	Type of teaching, group size, if applicable: Supervised exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types: Student research paper without colloquium -	If applicable, weighting of the study/examination achievements

Module objectives/desired learning outcomes:

- Knowledge and skills in the application of the methods of academic work and writing
- Gain knowledge and skills in a field that the student has designated for his/her Bachelor's thesis
- Ability to grasp and present the state of the art in a given subject area
- Development of independent decision-making ability
- Presentation of acquired expertise in a given subject area

Contents:

For example:
Students conduct comprehensive literature searches covering not only monographs, but also journals and other series
Prepare and test experimental setups, test procedures or similar
Participation in seminars on methods used in academic work and writing (participation possible as early as 2nd semester)

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
All professors, per student	0.2 LVS	Course attendance time		Home study	
	-	Lecture		Course accompanying and exam preparation	177 h
	-	Exercise			
	-	Other	3 h		
Total classroom time	**0.2 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Bachelor's thesis**	**BH 7-4**		01.09.2018
Study semester: 7th semester / Offered in WS: + SS		Credit points: 12 CP		Semester week hours: n/a
Allocation to study specialization: All	Responsible for module: N.N.	Type of teaching, group size, if applicable: n/a		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
174 CP from semesters 1 bis 6	
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Final thesis with colloquium -	

Module objectives/desired learning outcomes:

- Ability to grasp and present the state of the art in a given subject area
- Develop and demonstrate independent decision-making skills
- Presentation of the acquired methodological competence
- Presentation of total expertise acquired in a given subject area

Contents:

For example:
Conducting comprehensive literature research with classification and evaluation, and/or
Carrying out practical investigations, test procedures or similar with evaluation, discussion and the student's own conclusions
and/or
Performing technical calculations with factual/technical appropriate presentation, and/or
Developing drafts from a given subject area in the field of wood engineering

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
First examiner	0.3 LVS	Course attendance time		Home study	
Second examiner	0.1 LVS	Lecture		Course accompanying and exam preparation	354 h
	-	Exercise			
	-	Other	6		
Total classroom time	**0.4 LVS**	**Total workload**			**360 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Practical training project**	**BHV 98**		01.09.2018
Study semester: 7th semester / Offered in WS: + SS		Credit points: 6 CP		Semester week hours: n/a
Allocation to study specialization: All	Responsible for module: N.N.	Type of teaching, group size, if applicable: Supervised external project		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Project work with colloquium -	

Module objectives/desired learning outcomes:

Practical training projects can be carried out in all the subject areas of wood engineering
Depending on the task, a subject-specific or interdisciplinary project with high practical relevance is carried out in cooperation with an engineering firm, a company, a specialist authority, etc. Students deal with a task that is narrowly defined in terms of content and scope, carry out experimental (laboratory/field) investigations if necessary, and work out solutions largely independently.
They are able to assess the effects and consequences of the solutions they have developed themselves, and they can make technical and economic assessments and classifications.

Contents:

Practical projects with different focuses from the fields of wood engineering or interdisciplinary
The assignment is coordinated with the students, the project partners and the supervisors for the intended task of the Bachelor's thesis and takes into account the specialization (major) chosen by the students.

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
entire teaching staff, per student	0.2 LVS	Course attendance time		Home study	
	-	Lecture		Course accompanying and exam preparation	177 h
	-	Exercise	3 h		
	-	Other			
Total classroom time	**0.2 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

HAWK Fakultät Bauen und Erhalten Hildesheim

Part 3

Specialization modules (majors) Wood engineering

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Mudbrick building**	**BHV 81**		03.12.2018
Study semester: 5th semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: -	Responsible for module: Prof. Dr.-Ing. Georg Maybaum	Type of teaching, group size, if applicable: Seminar		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types: Student research paper with colloquium -	**If applicable, weighting of the study/examination achievements**

Module objectives/desired learning outcomes:

Students
- understand mudbrick as a building material of the past, present and, in view of its renaissance in the 21st century, also as a building material of the future
  .
- are familiar with the design options that mudbrick offers as a building material.
- deal with its material properties as well as with traditional and modern construction methods and the state of the art of rehabilitation techniques within the framework of the basic theoretical principles.
- know about the connection to the Lehm e.V. network, which HAWK was involved in founding in 2008, the problems of production processes in the manufacture of mudbrick building products, the craftsmanship involved in the use of semi-finished mud products and, last but not least, the state of the art in research.
- gain valuable experience for quality assurance during their own practical exercises in the laboratory and valuable experience on site for tendering and construction management tasks.

Contents:

- History of mudbrick building
- Cultural heritage and world cultural heritage
- The building material and its characteristics
- Building methods such as adobe construction, Weller construction, rammed earth construction, half-timbered construction with compartments filled with clay/mud etc.
- Design options from yesterday, for today and for tomorrow
- Building improvement technologies
- Visits to construction sites, if applicable

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. G. Maybaum	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	90 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Practical exercises in the lab with a focus on quality assurance

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Safety and health protection**	**BHV-82**		20.03.2020
Study semester: 6th semester / Offered in SS:		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: -	Responsible for module: Prof. Dr. M. Hanusrichter	Type of teaching, group size, if applicable: Lecture, exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Safety and health protection during construction work (lecture):
- Acquisition of basic knowledge in health protection and occupational safety
- Acquisition of "occupational safety knowledge" in accordance with the Construction Site Ordinance in conjunction with RAB 30 Annex B
- Basic knowledge on how to prepare an operational risk assessment

Safety and health protection during construction work (exercise):
- Development of a sample risk assessment

Contents:

Occupational health and safety knowledge includes general principles of occupational health and safety, identification and assessment of hazards on construction sites and during subsequent work on the building structures, as well as the protective measures required for this and the organization of occupational health and safety on construction sites.

It focuses on, among other things:
Occupational health and safety legislation and system, site-specific accident and health hazards and necessary protective measures (measures for safety mining and civil engineering work, hazards due to falling, safe use of scaffolding, safe use of ladders, mobile scaffolds and lifting platforms, hazards due to electricity, operational fire protection, hazards due to hazardous substances, measures for safety during assembly work, measures for safety during demolition and renovation work, safe use of machinery and equipment), first aid facilities, day shelters, washrooms, toilets and other facilities, personal protective equipment

Based on this, students are gradually introduced to the preparation of a risk assessment for a construction company.

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant Dipl.-Ing. K. Oetke	4 LVS	Course attendance time		Home study	
	-	Lecture	50 h	Course accompanying and exam preparation	120 h
	-	Exercise	10 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Acquisition of the qualification for special coordinator knowledge according to Annex C (BaustellV, RAB 30), if applicable

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Practical training project**	**BHV 98**		01.09.2018
Study semester: 7th semester / Offered in WS: + SS		Credit points: 6 CP		Semester week hours: n/a
Allocation to study specialization: All	Responsible for module: N.N.	Type of teaching, group size, if applicable: Supervised external project		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Project work with colloquium -	

Module objectives/desired learning outcomes:

Practical training projects can be carried out in all the subject areas of wood engineering
Depending on the task, a subject-specific or interdisciplinary project with high practical relevance is carried out in cooperation with an engineering firm, a company, a specialist authority, etc. Students deal with a task that is narrowly defined in terms of content and scope, carry out experimental (laboratory/field) investigations if necessary, and work out solutions largely independently.
They are able to assess the effects and consequences of the solutions they have developed themselves, and they can make technical and economic assessments and classifications.

Contents:

Practical projects with different focuses from the fields of wood engineering or interdisciplinary
The assignment is coordinated with the students, the project partners and the supervisors for the intended task of the Bachelor's thesis and takes into account the specialization (major) chosen by the students.

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Entire teaching staff, per student	0.2 LVS	Course attendance time		Home study	
	-	Lecture		Course accompanying and exam preparation	177 h
	-	Exercise	3 h		
	-	Other			
Total classroom time	**0.2 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Special project**	**BHV 99**		01.09.2018
Study semester: 7th semester / Offered in WS: + SS		Credit points: 6 CP		Semester week hours: n/a
Allocation to study specialization: All	Responsible for module: N.N.	Type of teaching, group size, if applicable: Project with lab and field exercises		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Project work with colloquium -	

Module objectives/desired learning outcomes:

Practical training projects can be carried out in all the subject areas of wood engineering
Depending on the task, a subject-specific or interdisciplinary project with high practical relevance is carried out in cooperation with an engineering firm, a company, a specialist authority, etc., in which the student, largely independently, develops solutions that are designed to assess follow-up effects and provide technical and economic evaluations.

Contents:

Projects with different focuses from the fields of wood engineering or interdisciplinary The assignment will take into account the specialization/major chosen by the student.

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
All professors, per student	0.2 LVS	Course attendance time		Home study	
	-	Lecture		Course accompanying and exam preparation	177 h
	-	Exercise	3 h		
	-	Other			
Total classroom time	**0.2 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**CAD/CAM and joinery in wood construction**	**BHV 10**		14.03.2019
Study semester	Offered in		Credit points		Semester week hours
5th semester	WS		6 CP		4 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
Structural wood engineering		Prof. Dr.-Ing. Volker Krämer			
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites
	BH 3-2 ; BH 3-5 and BH 4-5
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K1) Project work with colloquium	

Module objectives/desired learning outcomes:

Students
- are able to independently design timber structures with special requirements and basic conditions
- are able to use CAD programs and to input the wood structures into CAD completely and according to the machine's requirements
- are able to use dimensioning programs and design the timber structures with dimensioning programs
- learn to export machine data for woodworking machines and produce the timber structure in cooperation with a timber construction company
- learn how to assemble and disassemble wooden structures

Contents:

- Planning and design of wooden structures in accordance with machine requirements
- Static calculation of wooden structures
- Use of CAD/CAM systems
- Controlling woodworking machines
- Joining, assembly and disassembly of wooden structures

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. V. Krämer	2 LVS	Course attendance time		Home study	
Teaching assistant	2 LVS	Lecture	30 h	Course accompanying and exam preparation	120 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**Special areas in wood engineering**	**BHV 31**		23.08.2018
Study semester	Offered in		Credit points		Semester week hours
5th semester	WS		6 CP		4 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
Structural wood engineering		Prof. Dr.-Ing. Volker Krämer	Lecture with exercises		
Can also be credited to study program			Language of instruction		
Bachelor of Civil Engineering			German		

Requirements according to examination regulations	Recommended prerequisites
Successful completion of BH 3-2 or BB 4-5	BH 2-12
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Students
- are able to independently design more complex components of timber structures in building construction in accordance with standards
- learn further joining techniques and their evidence in timber construction
- learn to design connections and the resulting additional stresses in the components
- learn how to verify cross laminated timber elements
- are enabled to design plate-shaped timber structures using the shear analogy method

Contents:

- Advanced topics in connection technology in timber construction
  - Multi-section connections
  - Interaction of different connection methods
  - Spring approaches (yielding) in timber construction
- Evidence of components subjected to transverse tensile stresses
- Evidence of breakthroughs in large-format components
- Determination of stresses in cross laminated timber elements
- Thrust analogy

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. V. Krämer	4 LVS	Course attendance time		Home study	
	-	Lecture	40 h	Course accompanying and exam preparation	120 h
	-	Exercise	20 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wooden bridge construction**	**BHV 33**		23.08.2018
Study semester: 5th semester / Offered in SS:		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Volker Krämer	Type of teaching, group size, if applicable: Lecture with exercises		
Can also be credited to study program: Bachelor of Civil Engineering		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Successful completion of BH 3-2 or BB 4-5	BH 2-12
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Student research paper with colloquium -	

Module objectives/desired learning outcomes:

Students
- are able to independently design load-bearing systems for bridges in timber construction.
- learn about load assumptions and regulations for wooden bridges.
- learn about structural wood protection for wooden bridges.
- are enabled to design footbridges and cycle bridges in timber construction.

Contents:

- General introduction to wooden bridges
  - Historical wooden bridges
  - Development of wooden bridges
  - Examples
- Load assumption for wooden bridges
- Materials / structural wood protection
- Load-bearing systems
- Student research paper

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. V. Krämer	4 LVS	Course attendance time		Home study	
	-	Lecture	20 h	Course accompanying and exam preparation	120 h
	-	Exercise	40 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Fire safety and wood preservation**	**BHV 34**		01.09.2018
Study semester: 5th semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Sabine Iffert-Schier	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Solid construction:
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Seminar paper -	

Module objectives/desired learning outcomes:

1. Students receive a basic introduction to the multifaceted areas of fire safety and wood preservation and are sensitized to this subject matter.
2. Knowledge of the legal regulations
3. Knowledge of the terminology used in fire safety and wood preservation
4. Knowledge of fire safety and wood preservation in structures
5. Ability to take into account the requirements of fire safety and wood preservation in compliance with standards and regulations in the design and construction of structures

Contents:

Fire safety
1. Standards, regulations and codes
2. Basic principles
3. Fire, burning, definition, origin
4. Structural fire safety
5. Building materials, building products, building parts
6. Construction, escape routes, stairs, necessary corridors
7. Fire safety for special buildings
8. Fire safety concepts

Wood preservation
9. Basic principles
10. Animal and plant wood pests and their living conditions
11. Structural wood preservation
12. Wood preservation concepts

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. S. Iffert-Schier	2 LVS	Course attendance time		Home study	
Teaching assistant	2 LVS	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Fire safety**	**BHV 35**		23.10.2020
Study semester: 5th semester / Offered in: WS		Credit points: 3 CP		Semester week hours: 2 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr. Sabine Iffert-Schier	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Solid construction:
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K1)	

Module objectives/desired learning outcomes:

1. Students receive a basic introduction to the multifaceted areas of fire safety and wood preservation and are sensitized to this subject matter.
2. Knowledge of the legal regulations
3. Knowledge of the terminology used in fire safety and wood preservation
4. Knowledge of fire safety and wood preservation in structures
5. Ability to take into account the requirements of fire safety and wood preservation in compliance with standards and regulations in the design and construction of structures

Contents:

Fire safety

1. Standards, regulations and codes
2. Basic principles
3. Fire, burning, definition, origin
4. Structural fire safety
5. Building materials, building products, building parts
6. Construction, escape routes, stairs, necessary corridors
7. Fire safety for special buildings
8. Fire safety concepts

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	2 LVS	Course attendance time		Home study	
		Lecture	30 h	Course accompanying and exam preparation	60 h
		Exercise			
		Other			
Total classroom time	**2 LVS**	**Total workload**			**90 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Steel engineering**	**BHV 39**		01.09.2018
Study semester: 5th semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Stefanie Steppeler	Type of teaching, group size, if applicable: Lecture with integrated exercises		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	BH 1-1, BH 1-4, BH 2-4
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Students
- know the most important material properties of steel
- are able to apply the European safety concept in relation to steel construction-specific safety and the basic European dimensioning standards in steel construction
- are proficient in the standard-compliant verification of the structural safety and serviceability of simple tension and compression members and of bending girders in steel structures
- learn how to design and dimension simple connections in steel construction in accordance with standards
- detect components in steel construction that are at risk in terms of stability
- have mastered the basic standard-compliant checks for simple beams and columns in steel structures that are at risk in terms of stability

Contents:

- Steel and steel products, material properties
- Safety concept with regard to steel structure-specific safety features
- Introduction to the European dimensioning standards in steel construction
- Basic principles of dimensioning and design of simple tension and compression members as well as bending girders in steel construction
- Basic principles of dimensioning and design of simple bolted and welded joints
- Basic principles of the phenomena of stability specific to steel construction
- Basic principles of the dimensioning of simple beams and supports in steel structures that are subject to stability hazards

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Currently, teaching assistant	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Energy-efficient building**	**BHV 40**		01.09.2018
Study semester: 5th semester / Offered in SS:		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Alfred Breukelman	Type of teaching, group size, if applicable: Lecture with exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Student research paper without colloquium -	

Module objectives/desired learning outcomes:

Awareness of the connection between energy consumption, nature and the environment
Holistic assessment of building concepts and analysis of materials, structures and building services systems according to energy efficiency criteria
Students gain knowledge of energy efficient design and construction in the overall context of building design
Knowledge of energy efficiency standards and energy balancing
Knowledge of the options for passive and active use of regenerative energies
Knowledge of tools and methods for a planning and construction process optimized according to energy efficiency criteria
Ability to develop project-specific objectives and solution strategies according to the criteria of energy efficiency and to put them into practice in project work

Contents:

Description of contents:
- Climate, energy, sustainability
- Energy needs in the building life cycle
- Development of environmentally and climate-compatible construction methods
- Legal regulations and requirements: EnEV, EEWärmeG, EEG, EU Building Directive, etc.
- Energy balance in buildings
- Basic principles of energy balancing: Balancing area, balancing criteria and balancing limits
- Energy needs and balancing according to EnEV for residential and non-residential buildings
- Building energy standards: Passive house, KfW efficiency house, zero, plus energy house
- Energy-optimized building planning Building structure, building enclosure, building services Buildings as energy systems
- Passive and active planning strategies for reducing energy needs and optimizing energy supply
- Energy efficiency in existing buildings
- Environmentally compatible building materials and structures
- Examples of buildings in detail

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. A. Breukelman	4 LVS	Course attendance time		Home study	
	-	Lecture	45 h	Course accompanying and exam preparation	120 h
	-	Exercise	15 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Building acoustics in wood structures**	**BHV-44**		01.02.2019
Study semester: 5th semester / Offered in: WS		Credit points: 3 CP		Semester week hours: 2 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr. A. Breukelman	Type of teaching, group size, if applicable: Lecture, with some parts as a seminar		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K1) -	

Module objectives/desired learning outcomes:

- Understanding of building acoustical relationships in wood structures
- Ability to evaluate building acoustical situations in wood structures
- Ability to perform building acoustical calculations and preliminary dimensioning in project design
- Ability to perform structural and detailed planning in accordance with building acoustical requirements

Contents:

- Basic principles of soundproofing/building acoustics according to DIN 4109
- Methods of calculation and dimensioning for timber and lightweight construction according to DIN 4109
- Analysis of components and structural designs
- Building site measurements and building acoustics in actual practice
- Excursion on application technology
- Practical lab work

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Dipl.-Ing. G. Sponfelder	2 LVS	Course attendance time		Home study	
	-	Lecture	20 h	Course accompanying and exam preparation	60 h
	-	Exercise			
	-	Other	10 h		
Total classroom time	**2 LVS**	**Total workload**			**90 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**FEM in structural wood engineering**	**BHV-47**		29.07.2021
Study semester: 5th semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. V. Krämer	Type of teaching, group size, if applicable: Contact studies		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Static 1 to 3, Wood engineering 1 und 2
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Student research paper with colloquium -	

Module objectives/desired learning outcomes:

Students
- have basic knowledge on how FEM programs work.
- are able to use a FEM system commonly used in the construction industry with confidence.
- can check the results of computer calculations.
- are familiar with methods of pre- and post-processing.

Contents:

- History and areas of application for FEM
- Description of half-timbered structures with systems of equations
- Computer-aided solution of equation systems
- Basic structure of FEM programs
- Introduction to an FEM system
- Formation of static systems in the field of timber construction
- Calculation of flat and spatial static systems
- Modeling taking into account connection stiffnesses and eccentricities
- Quality control of the static calculation
- Using a spreadsheet program with a macro language for pre- and post-processing

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Dipl.-Ing. C. Seifart	4 LVS	Course attendance time		Home study	
	-	Lecture	45 h	Course accompanying and exam preparation	120 h
	-	Exercise	15 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Supporting structures in wood engineering**	**BHV-48**		29.07.2021
Study semester: 4th semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. V. Krämer	Type of teaching, group size, if applicable: Contact studies		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Lectures in wood engineering 1 and 2, static
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Student research paper with colloquium -	

Module objectives/desired learning outcomes:

Students
- acquire knowledge of the advantages and disadvantages of different structural designs.
- know criteria used for structural design.
- know the relationships between design and the static system.
- are able to analyze existing timber structures.

Contents:

- Discussion of typical wooden structures such as beams, frames and arches
- Bracing of the supporting structures via planar primary and secondary systems
- Room support structures and girder grids
- Design of connections and supports (joints, restraints)

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Dipl.-Ing. C. Seifart	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**CAD-CAM practical training project**	**BHV 02**		01.02.2019
Study semester: 5th semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: Prof. Dr.-Ing. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture with exercises		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types: Student research paper with colloquium -	If applicable, weighting of the study/examination achievements

Module objectives/desired learning outcomes:

- Independent work with CNC machines with 5 machining axes
- Independent work with CAD/CAM systems
- Independent execution of projects in groups
- Within the project work they develop their own team, conflict, facilitation and leadership skills
- Knowledge of the structure of CAD/CAM systems and how they work
- Knowledge of the different processing strategies
- Practical application of theoretical knowledge already acquired

Contents:

- Planning, design, manufacture and assembly of furniture or stairs on a smaller scale
- Conversion of digital 3D CAD designs into 3D models using 5-axis technology
- Programming methods with 5 processing axes
- Milling technology with 5 processing axes
- Multi-side processing
- 4/5 axes simultaneous processing
- Structure of different CAD/CAM systems and how they work
- Data exchange between different CAD/CAM systems
- 3D digitization
- Practical application of materials and material knowledge
- Consideration of occupational safety and accident prevention when operating processing machines

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	2 LVS	Course attendance time		Home study	
Dipl.-Ing. N. Linda	2 LVS	Lecture	30 h	Course accompanying and exam preparation	120 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**CIM – Computer-integrated furniture manufacturing**	**BHV 03**		01.09.2018
Study semester: 5th semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: Prof. Dr.-Ing. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		
Requirements according to examination regulations		Recommended prerequisites: BH 4-8, BH 4-9		
Study/examination achievements/ examination types: Project work with colloquium -		If applicable, weighting of the study/examination achievements		

Module objectives/desired learning outcomes:

Students learn about different strategies for modern computer-aided manufacturing and are able to evaluate their potential applications. They also learn about the selection, implementation and integration strategies for CIM systems and components. In addition, they acquire basic knowledge of the structure and functioning of database-driven production planning and control systems (PPS/ERP).

Contents:

- Structure of computer-integrated production systems (CIM systems)
- Basic technology, such as relational databases, SQL e.a.
- CIM components (CAD, CAM, ERP/PPS e.a.)
- Scope of services and performance evaluation
- Development of CIM concepts based on examples of production strategies
- Integration strategies
- Interfaces and limits
- Outlook on future developments
- IT project management and controlling
- Practical examples

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. F. Prekwinkel	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Field trips

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Additive production technology**	**BHV 04**		01.09.2018
Study semester: 5th semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: N.N.	Type of teaching, group size, if applicable: Project work, max. of 12 participants		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Knowledge corresponding to BH 2-8 and BH 2-10
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Project work with colloquium -	

Module objectives/desired learning outcomes:

Module objectives/desired learning outcomes:

Application of methods for identifying development potential in the furniture sector, selection and application of methods for generating ideas
Selection and application of methods for prototyping

Creation of prototypes (rapid prototyping) on HAWK equipment
Digital collaborative knowledge documentation and digital collaborative knowledge management (wikis).

Contents:

Description of contents:
Development of furniture, furniture details or related topics using the design techniques from the BH2-8 Design Theory module and extensive CAD knowledge in 3D modeling
Implementation of the concept as a practical prototype with current rapid prototyping techniques, if necessary in combination with skilled trade techniques, 3D data acquisition and the use of C-technologies
Project-related knowledge documentation and knowledge management in a project-related topic wiki

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Dipl.-Ing. E. Puls, M.A.	4 LVS	Course attendance time		Home study	
	-	Lecture	10 h	Course accompanying and exam preparation	120 h
	-	Exercise	50 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**Experimental furniture design**	**BHV 05**		01.02.2019
Study semester	Offered in		Credit points		Semester week hours
5th semester	WS		6 CP		4 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
Furniture and interior finishing		Prof. Dr. Frank Prekwinkel	Lecture		
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Student research paper with colloquium -	

Module objectives/desired learning outcomes:

- Students recognize and take advantage of material properties that are not typical of the furniture making field.
- Use of materials for special requirements in technical and/or design form
- Enable and encourage unconventional thinking

Contents:

- Search for unconventional materials
- Exercises on materials in technical and/or design terms
- Design of furniture using conventional and unconventional materials
- Implementation of the design as a sample, model or prototype

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	4 LVS	Course attendance time		Home study	
	-	Lecture	10 h	Course accompanying and exam preparation	120 h
	-	Exercise	50 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**Freehand drawing for engineers**	**BHV 06**		01.02.2019
Study semester	Offered in		Credit points		Semester week hours
5th semester	WS		6 CP		4 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
Furniture and interior finishing		Prof. Dr. Frank Prekwinkel	Lecture		
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Student research paper with colloquium -	

Module objectives/desired learning outcomes:

- Drawing and sketching without tools, such as a ruler or CAD
- Representing ideas in the form of sketches as a means of communication

Contents:

- Lessons on how to sketch and draw
- Criticism and guidance for improvement and clarification

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	4 LVS	Course attendance time		Home study	
	-	Lecture	10 h	Course accompanying and exam preparation	120 h
	-	Exercise	50 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**IMOS 1 – Object-oriented CAD/CAM**	**BHV 07**		01.09.2018
Study semester: 5th semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: Prof. Dr.-Ing. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture with exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Project work with colloquium -	

Module objectives/desired learning outcomes:

Students learn about object-oriented CAD/CAM techniques in order to be able to evaluate the possibilities of automation in technical order processing. Furthermore, the students should be able to structure the processes in order processing in furniture and interior design (planning, order entry, order processing, design, parts lists, work schedules, production planning, NC programming) in such a way that efficiency and quality can be increased with a high degree of individuality and planning freedom using CAD/CAM techniques.

Contents:

- Structure of object-oriented CAD/CAM systems
- Analysis of processes and organizational structures
- Requirements within the processes for planning, order entry, order processing, design, bills of material, work schedules, production planning, NC programming
- Definition of objects and properties as well as development of rules for design and production planning
- Graphical order entry and complete order processing
- Definition of parts lists and production documents
- Cost and time analyses, evaluation processes
- Practical examples

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. F. Prekwinkel	2 LVS	Course attendance time		Home study	
Teaching assistant	2 LVS	Lecture	30 h	Course accompanying and exam preparation	120 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**IMOS 2 – Practical examples for the use of CAD/CAM**	**BHV 08**		01.09.2018
Study semester	Offered in		Credit points		Semester week hours
5th semester	WS		6 CP		4 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
Furniture and interior finishing		Prof. Dr.-Ing. Frank Prekwinkel	Lecture with exercise		
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites
	BHV 07
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Project work with colloquium -	

Module objectives/desired learning outcomes:

Students deepen their understanding of the use of object-oriented CAD/CAM techniques using a variety of application examples. To this end, practical examples will also be implemented with industry partners. The main focus will be on:
- Handling a customer-specific project from initial planning to CNC machine connection
- Creation of product catalogs with configuration logic and pricing methodology
- Implementation of internet-based business models for furniture production

Students are able to analyze and structure common interior design and furniture production processes and optimize them using modern software technologies.

Contents:

- Acquisition of advanced knowledge regarding object-oriented CAD/CAM systems
- Connection of CNC machines, optimization of the machining strategy
- Analysis of customer requirements, product catalogs, and fulfillment processes when using Internet-based order fulfillment systems
- Use of a product configurator for the customized configuration of furniture elements
- Creation of product catalogs
- Structure and design of calculation and pricing logistics
- Practical examples

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. F. Prekwinkel	2 LVS	Course attendance time		Home study	
Teaching assistant	2 LVS	Lecture	30 h	Course accompanying and exam preparation	120 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Field trips

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Digitization in the wood and furniture industries**	**BHV 09**		01.09.2018
Study semester: 5th semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: Prof. Dr.-Ing. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture with exercises		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Student research paper with colloquium -	

Module objectives/desired learning outcomes:

Modern corporate and, in particular, product and production strategies are characterized by a trend toward digitization. Whether it's Industry 4.0, Internet-of-Things (ioT) or the use of web-based configuration and communication technologies: The aim is to get the end customer more closely involved in the business processes.
This course is designed to familiarize students with technologies from Industry 4.0 and ioT. In addition, different industry examples are to be analyzed and their success factors identified.
Students should be able to evaluate the feasibility of their own and other people's digitization ideas, implement strategies for planning, realizing and operating digital processes, and develop criteria for success monitoring, profitability analysis and performance enhancement.

Contents:

- Status quo of technologies for Industry 4.0 and internet of Things (ioT)
- Possible applications of different technologies, especially in the furniture industry
- Analysis of different digitization strategies from the USA, China and Europe
- Standardization efforts
- Technologies for product configuration in the furniture industry
- Strategies for web-based order process management
- Practical examples
- Economic efficiency analysis of selected practical examples
- Identification of success factors based on selected practical examples

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. F. Prekwinkel	2 LVS	Course attendance time		Home study	
Teaching assistant	2 LVS	Lecture	30 h	Course accompanying and exam preparation	120 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Field trips

Literature

is listed in Stud.IP

March 2022

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HAWK Fakultät Bauen und Erhalten Hildesheim

Part 1

Structural wood engineering

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Building materials science**	**BH 1-1**		10.03.2021
Study semester: 1st semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: All	Responsible for module: Prof. Dr.-Ing. Iris Marquardt	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Students acquire basic knowledge of the properties of building materials and their behavior under different stresses. They learn the basic principles for the appropriate use of building materials with regard to load-bearing behavior and durability, as well as building physics requirements.
They are enabled to independently expand and update learned knowledge from the areas covered.

Contents:

1. Basic studies: Technical building regulations; systematics of building materials and building material properties; basics of material testing and quality assurance; microstructure and structure of building materials; mechanical behavior; behavior towards liquids and gases; thermal behavior; fire behavior

2. Mineral binding agents

3. Concrete: Raw materials; classification of fresh and hardened concretes; test methods; production, processing and quality assurance; strength and deformation behavior of normal concrete; durability; concretes for special requirements; mortars

4. Steel: Production, testing , requirements

5. Artificial stone and brickwork

6. Synthetic materials in the building industry

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr.-Ing. Iris Marquardt	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Mathematics**	**BH 1-2**		01.09.2018
Study semester: 1st semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 6 SWS
Allocation to study specialization: All	Responsible for module: Prof. Dr.-Ing. Axel Stödter	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

- Students are able to apply mathematical techniques, procedures and algorithms.
- They are able to solve problems from the field of building technology.

Contents:

- Equations and systems of linear equations
- Determinants and matrices
- Vector algebra
- Functions and curves
- Differential calculus
- Basic principles of integral calculus

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	6 LVS	Course attendance time		Home study	
	-	Lecture	90 h	Course accompanying and exam preparation	90 h
	-	Exercise			
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Building construction, Building physics 1**	**BH 1-3**		01.09.2018
Study semester: 1st semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 6 SWS
Allocation to study specialization: All	Responsible for module: Prof. Dr.-Ing. Alfred Breukelman	Type of teaching, group size, if applicable: Lecture/exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
none	none
Study/examination achievements/ examination types Written examination (K2) -	**If applicable, weighting of the study/examination achievements**

Module objectives/desired learning outcomes:

- Students acquire knowledge of the elements of load-bearing and non-load-bearing building structures and basic principles of building physics.
- They acquire knowledge about standardization and building authority licensing.
- They develop the ability to recognize structural design and building physics principles and modes of action in context and discuss them across different disciplines.
- They develop the ability to independently implement structural design and building physics requirements in solving building and construction tasks in context.
- They are able to apply design rules independently.
- They are able to independently produce construction drawings.

Contents:

Building design:
- Basic legal principles of building planning
- Construction drawings
- Building structure and load-bearing systems
- Structural stability
- Basic principles of brickwork construction
- Walls used in brickwork construction
- Walls used in wood construction
- Soil and foundation systems
- Structural waterproofing and drainage systems
- Ceiling and floor design

Building physics:
- Basic principles of building physics
- Protection against heat and humidity

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. A. Breukelman (Building design)	4 LVS	Course attendance time		Home study	
Prof. Dr. M. Deck (Building physics)	2 LVS	Lecture	60 h	Course accompanying and exam preparation	90 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**Technical mechanics, static 1**	**BH 1-4**		06.04.2021
Study semester	Offered in		Credit points		Semester week hours
1st semester	WS		6 CP		4 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
All		Prof. Dr.-Ing. Thomas Wedemeier	Lecture		
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Written examination (K2) -	

Module objectives/desired learning outcomes:

- Students are confident in their use of relevant quantities and terms of engineering mechanics.
- They are proficient with respect to the simplest basic principles and methods of plane statics.
- They are able to model the structural system of simple structures.
- They are able to model the structural system of simple structures.

Contents:

- Forces, momentum and force systems
- Equilibrium and equivalence
- Stability of rigid bodies
- Basic terminology used in structural engineering, types of structures and their application
- Method of sections, shear diagram
- Reaction forces, internal force variable of statically determinate supports
- Load case superposition

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr.-Ing. Thomas Wedemeier	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Key qualifications**	**BH 1-6**		01.09.2018
Study semester: 1st semester / Offered in: WS		Credit points: 3 CP		Semester week hours: 2 SWS
Allocation to study specialization: All	Responsible for module: Prof. Dr. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture and exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types: Student research paper with colloquium -	If applicable, weighting of the study/examination achievements

Module objectives/desired learning outcomes:

Students are aware of the different methods of general presentation.
They are able to prepare presentations targeted to specific audiences.
They are able to create posters with a color plotter.
They are aware of the design concepts and their implementation.

Contents:

Basic principles of presentation technology
Slides and poster design
Preparing presentations, stage fright
Delivering presentations
Post-presentation analysis
Rhetoric
Examples of presentations from professional practice and university, job application

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	2 LVS	Course attendance time		Home study	
	-	Lecture	20 h	Course accompanying and exam preparation	60 h
	-	Exercise	10 h		
	-	Other			
Total classroom time	**2 LVS**	**Total workload**			**90 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wood technology**	**BH 1-7**		01.09.2018
Study semester: 1st semester / Offered in: WS		Credit points: 3 CP		Semester week hours: 2 SWS
Allocation to study specialization: All	Responsible for module: N.N.	Type of teaching, group size, if applicable		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Written examination (K1) -	

Module objectives/desired learning outcomes:

Students learn about the structure of wood and how it is formed.
They will be able to explain the wood technological properties based on the structure and select and apply different types of wood in practice.

Contents:

Forest, timber harvesting, eco-cycle
European and tropical types of wood, differences
Wood anatomy
Structure of a wood cell
Tasks of a wood cell
Types of cells
Wood growth
Wood properties based on the structure of the wood

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	2 LVS	Course attendance time		Home study	
	-	Lecture	20 h	Course accompanying and exam preparation	60 h
	-	Exercise			
	-	Other	10 h		
Total classroom time	**2 LVS**	**Total workload**			**90 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wood construction project 1**	**BH 2-1**		01.12.2018
Study semester: 2nd semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Thomas Wedemeier	Type of teaching, group size, if applicable: Project work with supervision in groups		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Project work with colloquium -	

Module objectives/desired learning outcomes:

The students acquire knowledge of the development of a design and drawing representation of a simple project based on a wood frame construction.
They should be able to independently apply the construction rules of timber construction to simple building tasks and recognize the structural, design, functional, economic, energy and building physics requirements of timber frame construction using the example of a simple building project, in the overall context.

Contents:

- Execution and detail planning
- Development and drawing of the construction details of the building.
- Calculations and verifications of protection against dampness

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. Th. Wedemeier	4 LVS	Course attendance time		Home study	
	-	Lecture	10 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other	50 h		
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Building construction, Building physics 2**	**BH 2-3**		01.09.2018
Study semester: 2nd semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 6 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.- Ing. Alfred Breukelman	Type of teaching, group size, if applicable: Lecture/exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Successful completion of BH 1-3
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

- Students acquire knowledge of the elements of load-bearing and non-load-bearing building structures and basic principles of building physics.
- They acquire knowledge about standardization and building authority licensing.
- They develop the ability to recognize structural design and building physics principles and modes of action in context and discuss them across different disciplines.
- They develop the ability to independently implement structural design and building physics requirements in solving building and construction tasks in context.
- They are able to apply design rules independently.
- They are able to independently produce construction drawings.

Contents:

Building design:
- Wood building construction
- Wooden frame construction, wooden panel construction
- Sloped roofs
- Flat roofs
- Windows and doors
- Stairways

Building physics:
- Protection against moisture
- Soundproofing and fire safety

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. A. Breukelman (Building design)	4 LVS	Course attendance time		Home study	
Prof. Dr. M. Deck (Building physics)	2 LVS	Lecture	60 h	Course accompanying and exam preparation	90 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**Technical mechanics, static 2**	**BH 2-4**		06.04.2021
Study semester	Offered in		Credit points		Semester week hours
2nd semester	SS		6 CP		6 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
Structural wood engineering		Prof. Dr.-Ing. Thomas Wedemeier	Lecture		
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites
	BH 1-4, Static 1
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

- Students are able to assess the state of forces of statically determinate structures.
- They acquire skills for determining the internal stress of parts of the structure.
- They are able to assess the load-bearing capacity of structures.
- They acquire the prerequisites for the material-dependent design and dimensioning of load-bearing structures.

Contents:

- Reaction forces, internal force variables of statically determinate supports
- Stresses, strain, sliding, material laws
- Determination of area values of cross-sections used in construction (center of gravity, moments of area, ...)
- Determination of normal stresses due to bending moments and normal forces
- Determination of shear stresses due to shear forces and torsion
- Stresses in case of failing tension zone

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr.-Ing. Thomas Wedemeier	6 LVS	Course attendance time		Home study	
	-	Lecture	90 h	Course accompanying and exam preparation	90 h
	-	Exercise			
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**CAD-1**	**BH 2-9**		14.03.2019
Study semester: 2nd semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Volker Krämer	Type of teaching, group size, if applicable: Lecture with integrated exercises		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types Student research paper with colloquium -	If applicable, weighting of the study/examination achievements

Module objectives/desired learning outcomes:

Students
- are able to take advantage of digital tools in their working environment.
- know the requirements of a CAD system in the field of timber construction.
- possess extensive theoretical and practical basic CAD knowledge.
- are able to process complete 3D wooden structures.
- are able to create 2D plans and lists on the basis of 3D wood structures.

Contents:

- Creation of spatially complex 3D wood structures
- Labeling and dimensioning sections
- Perspectives, photorealistic representations and of assembly plans
- Configuring and automatic output for lists and dimensioned single part drawings
- Each student creates a 3D spatial structure of his or her own choice and generates from it all the planning documents required for the production of the structure.

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wood as a building material**	**BH 2-12**		24.08.2018
Study semester: 2nd semester / Offered in: SS		Credit points: 3 CP		Semester week hours: 2 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Volker Krämer	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Wood technology BH1-7
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K1) -	

Module objectives/desired learning outcomes:

Students
- learn about wood and wood-based materials.
- learn about the mechanical strength and damage mechanisms of wood.
- learn how to sort construction timber according to the normative principles.
- learn how to independently evaluate the stiffness, strength and durability of structural timber.
- learn about the manufacture, structure and properties of glued laminated timber.

Contents:

- Wood anatomy/wood formation
- Wood characteristics/mechanical properties of structural timber
- Durability of structural timber
- Wood physics
- Strength grading of structural timber
- Cut timber/solid wood products
- Glued laminated timber
- Lab exercise

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. V. Krämer	2 LVS	Course attendance time		Home study	
	-	Lecture	30 h	Course accompanying and exam preparation	60 h
	-	Exercise			
	-	Other			
Total classroom time	**2 LVS**	**Total workload**			**90 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**Engineering computer science**	**BH 2-14**		14.03.2019
Study semester	Offered in		Credit points		Semester week hours
2nd semester	SS		3 CP		2 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
Structural wood engineering		Prof. Dr.-Ing. Volker Krämer	Lecture		
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K1) -	

Module objectives/desired learning outcomes:

Students
- are able to take advantage of digital tools in their working environment.
- are familiar with basic terminology used in data processing.
- know common construction-specific application software for standard engineering tasks.
- know the structure of user input in structural analysis software (FEM).
- know that results of computer-aided calculations must be subjected to critical scrutiny.
- can solve engineering tasks with the help of spreadsheets they have created themselves.
- know the basics of a programming language.
- are able to read and debug program code.
- are familiar with basic algorithms and data structures.
- understand the meaning and application of object-oriented programming.

Contents:

- Presentation of software solutions for standard engineering tasks
- Criteria for the selection of suitable software solutions
- short presentation of FEM software, a design program and a CAS solution
- Introduction to a spreadsheet program
- Introduction to a programming language

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Dipl.-Ing. C. Seifart	2 LVS	Course attendance time		Home study	
	-	Lecture	30 h	Course accompanying and exam preparation	60 h
	-	Exercise			
	-	Other			
Total classroom time	**2 LVS**	**Total workload**			**90 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wood construction project 2**	**BH 3-1**		01.12.2018
Study semester: 3rd semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Thomas Wedemeier	Type of teaching, group size, if applicable: Project work with supervision in groups		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Project work with colloquium -	

Module objectives/desired learning outcomes:

Students are to acquire basic knowledge in planning, working through and drawing a project from the field of wood panel construction and timber frame construction and be able to independently apply the construction rules of timber construction.
In the process, they will acquire knowledge and skills in integrated and interdisciplinary building design and become familiar with production and manufacturing methods used in timber construction.

Contents:

- Development of a planning concept including investigation of different solution variants (preliminary planning)
- Development of the final building and structural solution and integration of the specialized planning with graphic representation of the structural draft (draft planning)
- Preparation of position plans as well as static calculation and dimensioning (permit planning)
- Development and drawing of the structure with structural details and all the information necessary for the execution (execution planning)

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. Th. Wedemeier	6 LVS	Course attendance time		Home study	
	-	Lecture	10 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other	50 h		
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wood engineering**	**BH 3-2**		23.08.2018
Study semester: 3rd semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Volker Krämer	Type of teaching, group size, if applicable: Lecture with exercises		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Wood as a building material
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Students
- are able to independently design components of simple timber structures in building construction and dimension them in accordance with standards.
- learn to connect the components to each other in a force-fit manner using pin-shaped, metallic fasteners.
- are enabled to apply timber construction-specific solution concepts for simple timber construction projects and to transfer these solution concepts independently to other planning tasks in timber construction.

Contents:

- History, built objects, wood technology
- Basic principles for the dimensioning of structural components made of wood and wood-based materials (e.g. beams, supports)
- Verification of the stability of buckling bars and bending beams made of wood and wood-based materials that are at risk of tilting
- Basic principles for the dimensioning of pin-shaped fasteners (e.g. bar dowels, nails)
- Basic principles for the design and dimensioning of simple load-bearing structures made of wood

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. V. Krämer	4 LVS	Course attendance time		Home study	
	-	Lecture	40 h	Course accompanying and exam preparation	120 h
	-	Exercise	20 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Planning technology, prefabrication**	**BH 3-3**		09.07.2018
Study semester: 3rd semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Volker Krämer	Type of teaching, group size, if applicable: Contact studies		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	1/2 Planning technology – 1/2 Prefabrication

Module objectives/desired learning outcomes:

Students
- are familiar with common types of construction for wooden dwellings.
- are familiar with common roof, ceiling and wall constructions.
- know that the constructions have to meet static, structural and production requirements.
- can weigh up the advantages and disadvantages of workshop production versus construction site production.
- know the function of roof, ceiling and wall panels.
- know the spatial interaction of panels to brace buildings.

- are familiar with preliminary planning, draft planning, permit planning, execution planning.
- Tendering, scheduling
- Calculation

Contents:

- Presentation and discussion of various forms of construction in residential construction
- Evaluation criteria for construction types
- Evaluation criteria for material
- Details of roof, ceiling and wall constructions
- Information on the topics of elements, manufacturing, transport and assembly
- Basic information on load transfer and bracing

- Breakdown of costs according to DIN 276
- Application of the HOAI (fee calculation for architects and engineers)
- Preparation of specifications
- Basic information on the building code
- Basic information on planning regulations
- Basic information on tendering, awarding and invoicing
- Examples

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	2 LVS	Course attendance time		Home study	
Dipl.-Ing. C. Seifart	2 LVS	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Technical mechanics, static 3**	**BH 3-4**		06.04.2021
Study semester: 3rd semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Thomas Wedemeier	Type of teaching, group size, if applicable: Lecture with integrated exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	BH 1-4, BH 2-4
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

- Students are able to assess the deformation behavior of load-bearing structures and to quantitatively determine deformation variables.
- They acquire skills for determining the load-bearing behavior of statically indeterminate structures as a result of load and constraint actions.
- They are able to assess the influence of deformations on the load-bearing behavior.
- They are able to assess the stability failure of prismatic and planar components.
- They understand the quantitative determination of the bending buckling and bending torsion buckling loads of prismatic components.
- They are able to analyze the behavior of supporting structures under mobile loading.

Contents:

- Solution of the differential equation for the bending line for simple conditions
- Application of the working theorem of elastostatics to plane composite static systems to determine deformations
- Determination of internal forces of statically indeterminate systems by means of force magnitude methods
- Checks of internal forces calculations of statically indeterminate systems
- Elastic stability of bar supports
- Determination of influence lines

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr.-Ing. Thomas Wedemeier	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**CAD-2**	**BH 3-5**		14.03.2019
Study semester: 3rd semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 6 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. V. Krämer	Type of teaching, group size, if applicable: Lecture with integrated exercises		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	BH 2-9 CAD-1
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Students
- deepen their knowledge of CAD-1 on a 3D structure from engineering timber construction.
- are able to apply many of the special modules required in timber construction.
- learn in the accompanying lecture the theoretical basics of 2D and 3D CAD/CAM systems.
- know the meaning of e.g. layer technology, coordinate systems and different element types.
- know interfaces for data exchange with other CAD or CAM systems.
- know how to extract and insert digital information from BIM models.

The lecture and the exercise are coordinated in such a way that theory and practice contribute to the overall understanding.

Contents:

- 3D design and plan output in engineered timber construction
- Working with a joinery program
- Creating details for the automatic production of wall, ceiling and roof elements
- Generating lamella extension and press bed in glulam construction
- Creating parameterized 3D designs
- Control of joinery systems using the example of Hundegger K2 joinery machine
- Using the stair program

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	4 LVS	Course attendance time		Home study	
Teaching assistant	2 LVS	Lecture	90 h	Course accompanying and exam preparation	90 h
	-	Exercise			
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wood construction project 3**	**BH 4-1**		01.12.2018
Study semester: 4th semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Thomas Wedemeier	Type of teaching, group size, if applicable: Project work with supervision in groups		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Project work with colloquium -	

Module objectives/desired learning outcomes:

Students should be able to independently design, construct, dimension, and draw the structural framework and structural details of a structurally challenging wooden building.
They are enabled to develop their own learning strategies and conduct independent research. Within the project work they develop their own team, conflict, facilitation and leadership skills and are also able to conduct project discussions in English. The project improves their motivation, professional open-mindedness and agility, as well as their creativity.

Contents:

- Project management with special consideration of interdisciplinary and intercultural aspects (project language)
- Design and comparison of structural systems in terms of aesthetics, wood construction, statics and economics
- Structural design of the selected structure
- Processing of the service phases of preliminary planning, draft, permit and execution planning
- Proposals and plans for the manufacture, prefabrication and assembly of the building, as well as the choice of building materials
- Example for the preparation of a timber construction-specific construction contract cost estimate (calculation of the final sum)
- Considerations for optimizing the economy/cost of the selected design
- Preparation of the contract awarding
- Presentation of milestone-specific results of project processing in English

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. Th. Wedemeier	6 LVS	Course attendance time		Home study	
	-	Lecture	10 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other	50 h		
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**Drywalling and finishing construction**	**BH 4-2**		01.09.2018
Study semester	Offered in		Credit points		Semester week hours
4th semester	SS		6 CP		4 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
All		N.N.	Lecture/exercise		
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Student research paper with colloquium -	

Module objectives/desired learning outcomes:

- Knowledge of materials, types of construction, elements of construction, principles of construction of interior design
- Knowledge of soundproofing and fire safety for interior finishing
- Ability to develop an execution and detailed design plan taking into account the technical, structural, functional and design interrelationships and dependencies
- Ability to independently prepare execution and detailed drawings

Contents:

- Materials in drywall and finishing
- Wall, ceiling and floor design
- Designs with special requirements
- Development of a finishing plan as execution and detail planning within the scope of a practical project

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. A. Breukelman	4 LVS	Course attendance time		Home study	
	-	Lecture	30 h	Course accompanying and exam preparation	120 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wood engineering**	**BH 4-3**		03.07.2018
Study semester: 4th semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 6 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Volker Krämer	Type of teaching, group size, if applicable: Contact studies		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Wood engineering BH 3-2
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	2/3 Wood engineering - 1/3 Wood paneling

Module objectives/desired learning outcomes:

Students
learn further joining techniques in timber construction and how to verify them in accordance with standards.
Students are also able to determine the compliance of lanyards and the influence of compliance on internal forces and buckling lengths.
Students learn how to determine internal forces on composite members (rigid and yielding) and how to verify composite members.
They learn to design and verify large-format timber components, with non-parallel component edges.
- They are familiar with the load-bearing behavior of a shear field.
- They are able to calculate wooden panels with the static system of a shear field.
- They can carry out the structural safety and serviceability for wooden panels according to the European design standard.
- They know about the necessary storage conditions and the interaction of wooden panels.
- They can plan and calculate the spatial bracing of buildings with panels.
- They are familiar with several forms of construction of wooden panels.

Contents:

- Methods of joining in carpentry
- Specially designed dowels
- Screws
- Yielding of connections
- Bending resistant connections, spring stiffnesses
- Composite components
- Pitched roof girders
- Saddle roof girders (straight / curved bottom chord)

- Calculating the internal and external force magnitudes on wooden panels
- Explanation of the design rules based on European standardization
- Static verifications for wall, ceiling and roof panels
- Calculation of the deformation of wooden panels
- Calculation of bracing systems

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. V. Krämer	4 LVS	Course attendance time		Home study	
Dipl.-Ing. C. Seifart	2 LVS	Lecture	90 h	Course accompanying and exam preparation	90 h
	-	Exercise			
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**Solid construction, Geotechnics**	**BH 4-4**		01.06.2021
Study semester	Offered in		Credit points		Semester week hours
4th semester	SS		6 CP		6 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
Structural wood engineering		Prof. Dr.-Ing. Michael Hansen	Lecture		
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites
	Static 1 - 3
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Solid construction:
Students know the basic principles of reinforced concrete design in uncracked and cracked conditions. They are able to perform a cross-section design under normal force and bending stress and to determine longitudinal bending reinforcement on the basis of this. In addition, they can calculate the reinforcement resulting from a shear load and outline the total reinforcement required. In addition, students know how to design brickwork structures and how to execute them correctly from a structural and design point of view.

Geotechnics:
Students have a basic working knowledge of soil identification and classification.
They are able to understand a subsoil report and to dimension simple shallow foundations. They also have a basic knowledge of deep foundations and foundation improvements.

Contents:

Solid construction (reinforced concrete construction)
- Basic principles of bending and shear force design of reinforced concrete components
- Dimensioning and construction of standard structural elements (beams, uniaxially spanned ceilings, ...)
- Design rules and basics of reinforcement design

Solid construction (brickwork construction)
- Building materials and load-bearing behavior of brickwork
- Basic principles in the design of brickwork structures

Geotechnics:
- Formation of soils as well as methods for soil identification
- Classification of soils according to various criteria and determination of relevant soil mechanical properties
-
- Load-bearing behavior of the subsoil and measures for subsoil improvement
- Methods of securing the excavation pit

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr.-Ing. habil. M. Hansen	4 LVS	Course attendance time		Home study	
Prof. Dr.-Ing. G. Maybaum	2 LVS	Lecture	90 h	Course accompanying and exam preparation	90 h
	-	Exercise			
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Surveying**	**BH 4-5**		01.09.2018
Study semester: 2nd semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 6 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Axel Stödter	Type of teaching, group size, if applicable		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types: Student research paper without colloquium -	If applicable, weighting of the study/examination achievements

Module objectives/desired learning outcomes:

Students will independently apply appropriate procedures to the methods listed below using concrete and practical examples and compile or map and draw evaluations of professional practice. They should be able to estimate required accuracies and increase them, if necessary. They are to acquire practical knowledge with special reference to the project study in the field of planning and construction as well as for inventories for redevelopment objects.

Contents:

- Basic principles of surveying
- Building survey
- Staking out buildings
- Leveling
- Recording the profile
- Determining area and mass
- Trigonometry, introduction to tachymetry, traverse line, tachymetric survey
- Routing elements for road construction, etc.

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. A. Stödter	6 LVS	Course attendance time		Home study	
Dipl.-Ing. S. Wethkamp	4 LVS	Lecture	30 h	Course accompanying and exam preparation	90 h
	-	Exercise	60 h		
	-	Other			
Total classroom time	**10 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wood construction project 4**	**BH 5-1**		01.12.2018

Study semester	Offered in	Credit points	Semester week hours
5th semester	WS	6 CP	4 SWS

Allocation to study specialization	Responsible for module	Type of teaching, group size, if applicable
Structural wood engineering	Prof. Dr.-Ing. Thomas Wedemeier	Project work with supervision in groups
Can also be credited to study program: -		Language of instruction: German

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Project work with colloquium -	

Module objectives/desired learning outcomes:

Students are to acquire in-depth and comprehensive knowledge (LP 1 - 6) within the scope of planning timber structures for new buildings as well as for existing buildings. On the one hand, the students are to independently develop an overall concept for the new construction of a structure made of wood, with special consideration for a specific utilization concept. On the other hand, the students are to deal with the special features of construction in existing buildings by being given a construction task on an existing building. The respective supporting structures are to be designed, constructed, dimensioned, depicted in drawings, assessed in terms of construction costs and prepared for the invitation to tender in the form of service specifications. They are enabled to develop their own learning and work strategies and to conduct independent research to successfully complete complex planning tasks.

Within the project work they develop their own team, conflict, facilitation and leadership skills. They are also able to conduct project discussions in English. In addition, the project improves their motivation, professional open-mindedness and agility, as well as their creativity.

Contents:

- Development, set-up and operation of a project management system for the respective sub-projects with special consideration of a quality-oriented, on-time and efficient project processing (quality, deadlines, costs)
- Complete draft (LP 1 - 6) of a new building in timber construction taking into account a special concept of use
- Complete draft (LP 1 - 6) of a timber construction within the scope of a conversion/extension or modernization measure (construction in existing buildings)
- Detailed design of the structures, justification of the choice of building materials
- Detailed description of the manufacturing, prefabrication and assembly process
- Determination of construction costs in the degree of accuracy of a cost calculation (DIN 276)
- Presentation of ways to optimize the economic efficiency of the designs in the investment and operation phases
- Processing of work phases 1 to 6 according to HOAI

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. Th. Wedemeier	6 LVS	Course attendance time		Home study	
	-	Lecture	10 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other	50 h		
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Practical training phase**	**BH 6-1**		01.06.2021
Study semester: 6th semester / Offered in WS: + SS		Credit points: 30 CP		Semester week hours: n/a
Allocation to study specialization: All	Responsible for module: Prof. Dr. Ing. Mario Hanusrichter	Type of teaching, group size, if applicable: Pre- and post-seminar, practical phase		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
All CP from 1st and 2nd semester, a further 45 CP from semesters 3 to 5	
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Seminar paper Student research paper without colloquium	15 weeks of practical training (translates as 24 CP, pass/fail research paper (report) and seminar paper (translates as 6 CP) will be graded

Module objectives/desired learning outcomes:

- Application of previously acquired knowledge and skills in everyday professional practice, engineering work
- Gain competencies in an area that the student has designated for future employment
- Working in the training center is designed to give students some orientation for finding a topic for their Bachelor's thesis
- Stimulation to link non-specialist content with the student's own training to date
- Development of independent decision-making ability
- Presentation of the professional and social competence acquired during the course of study

Contents:

Practical phase supervised by the wood engineering program of the Faculty of Architecture, Engineering and Conservation in a company, e.g. in the wood construction or furniture industry, in an engineering office, or comparable The company/institution must ensure that engineering supervision is possible during the practical phase, i.e. at least 1 engineer must provide supervision in the company (training facility). The regulations for the practical phase according to the Praxisphasenordnung (PraxisO) must be observed.

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Entire teaching staff, per student	0.1 LVS	Course attendance time		Home study	
	-	Lecture		Course accompanying and exam preparation	740 h
	-	Exercise			
	-	Other	10 h		
Total classroom time	**0.1 LVS**	**Total workload**			**750 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Individual profile studies**	**BH 7-1**		01.09.2018
Study semester: 7th semester / Offered in WS: + SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: All	Responsible for module: HAWK plus	Type of teaching, group size, if applicable: Course-dependent, according to information from HAWK plus		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types Course-dependent -	If applicable, weighting of the study/examination achievements

Module objectives/desired learning outcomes:

Areas of competence of the Individual Profile Studies (IPS)
- Thinking and acting like an entrepreneur
- Leadership skills
- Communication and individual skills
- Social and societal skills
- Media skills
- Interdisciplinary specialized knowledge
- Language competence

Contents:

See the IPS Module Handbook for the current range of courses (https://www.hawk.de/de/hochschule/organisation-und-personen/zentrale-einrichtungen/hawk-plus/individuelles-profilstudium)

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
up to	4 LVS	Course attendance time		Home study	
	-	Lecture		Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other	60 h		
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Module for preparation of the final thesis**	**BH 7-2**		01.09.2018
Study semester: 7th semester / Offered in WS: + SS		Credit points: 6 CP		Semester week hours: n/a
Allocation to study specialization: All	Responsible for module: N.N.	Type of teaching, group size, if applicable: Supervised exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types Student research paper without colloquium -	If applicable, weighting of the study/examination achievements

Module objectives/desired learning outcomes:

- Knowledge and skills in the application of the methods of academic work and writing
- Gain knowledge and skills in a field that the student has designated for his/her Bachelor's thesis
- Ability to grasp and present the state of the art in a given subject area
- Development of independent decision-making ability
- Presentation of acquired expertise in a given subject area

Contents:

For example:
Students conduct comprehensive literature searches covering not only monographs, but also journals and other series.
Prepare and test experimental setups, test procedures or similar
Participation in seminars on methods of academic work and writing (participation possible as early as 2nd semester)

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
All professors, per student	0.2 LVS	Course attendance time		Home study	
	-	Lecture		Course accompanying and exam preparation	177 h
	-	Exercise			
	-	Other	3 h		
Total classroom time	**0.2 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Bachelor's thesis**	**BH 7-4**		01.09.2018
Study semester: 7th semester / Offered in WS: + SS		Credit points: 12 CP		Semester week hours: n/a
Allocation to study specialization: All	Responsible for module: N.N.	Type of teaching, group size, if applicable: n/a		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
174 CP from semesters 1 bis 6	
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Final thesis with colloquium -	

Module objectives/desired learning outcomes:

- Ability to grasp and present the state of the art in a given subject area
- Develop and demonstrate independent decision-making skills
- Presentation of the acquired methodological competence
- Presentation of total expertise acquired in a given subject area

Contents:

For example:
Conducting comprehensive literature reviews with classification and evaluation and/or
Carrying out practical investigations, test procedures or similar with evaluation, discussion and the student's own conclusions
and/or
Performing technical calculations with factual/technical appropriate presentation and/or
Developing drafts from a given subject area in the field of wood engineering

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
First examiner	0.3 LVS	Course attendance time		Home study	
Second examiner	0.1 LVS	Lecture		Course accompanying and exam preparation	354 h
	-	Exercise			
	-	Other	6		
Total classroom time	**0.4 LVS**	**Total workload**			**360 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Practical training project**	**BHV 98**		01.09.2018
Study semester: 7th semester / Offered in WS: + SS		Credit points: 6 CP		Semester week hours: n/a
Allocation to study specialization: All	Responsible for module: N.N.	Type of teaching, group size, if applicable: Supervised external project		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Project work with colloquium -	

Module objectives/desired learning outcomes:

Practical training projects can be carried out in all the subject areas of wood engineering
Depending on the task, a subject-specific or interdisciplinary project with high practical relevance is carried out in cooperation with an engineering firm, a company, a specialist authority, etc. Students deal with a task that is narrowly defined in terms of content and scope, carry out experimental (laboratory/field) investigations if necessary, and work out solutions largely independently.
They are able to assess the effects and consequences of the solutions they have developed themselves, and they can make technical and economic assessments and classifications.

Contents:

Practical projects with different focuses from the fields of wood engineering or interdisciplinary
The assignment is coordinated with the students, the project partners and the supervisors for the intended task of the Bachelor's thesis and takes into account the specialization (major) chosen by the students.

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Entire teaching staff, per student	0.2 LVS	Course attendance time		Home study	
	-	Lecture		Course accompanying and exam preparation	177 h
	-	Exercise	3 h		
	-	Other			
Total classroom time	**0.2 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

HAWK Fakultät Bauen und Erhalten Hildesheim

Part 2

Furniture and interior finishing

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Building materials science**	**BH 1-1**		10.03.2021
Study semester: 1st semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: All	Responsible for module: Prof. Dr.-Ing. Iris Marquardt	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Students acquire basic knowledge of the properties of building materials and their behavior under different stresses. They learn the basic principles for the appropriate use of building materials with regard to load-bearing behavior and durability, as well as building physics requirements.
They are enabled to independently expand and update learned knowledge from the areas covered.

Contents:

1. Basic studies: Technical building regulations; systematics of building materials and building material properties; basics of material testing and quality assurance; microstructure and structure of building materials; mechanical behavior; behavior towards liquids and gases; thermal behavior; fire behavior

2. Mineral binding agents

3. Concrete: Raw materials; classification of fresh and hardened concretes; test methods; production, processing and quality assurance; strength and deformation behavior of normal concrete; durability; concretes for special requirements; mortars

4. Steel: Production, testing , requirements

5. Artificial stone and brickwork

6. Synthetic materials in the building industry

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr.-Ing. Iris Marquardt	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Mathematics**	**BH 1-2**		01.09.2018
Study semester: 1st semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 6 SWS
Allocation to study specialization: All	Responsible for module: Prof. Dr.-Ing. Axel Stödter	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

- Students are able to apply mathematical techniques, procedures and algorithms.
- They are able to solve problems from the field of building technology.

Contents:

- Equations and systems of linear equations
- Determinants and matrices
- Vector algebra
- Functions and curves
- Differential calculus
- Basic principles of integral calculus

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	6 LVS	Course attendance time		Home study	
	-	Lecture	90 h	Course accompanying and exam preparation	90 h
	-	Exercise			
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Building construction, Building physics 1**	**BH 1-3**		01.09.2018
Study semester: 1st semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 6 SWS
Allocation to study specialization: All	Responsible for module: Prof. Dr.-Ing. Alfred Breukelman	Type of teaching, group size, if applicable: Lecture/exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
none	none
Study/examination achievements/ examination types Written examination (K2) -	**If applicable, weighting of the study/examination achievements**

Module objectives/desired learning outcomes:

- Students acquire knowledge of the elements of load-bearing and non-load-bearing building structures and basic principles of building physics.
- They acquire knowledge about standardization and building authority licensing.
- They develop the ability to recognize structural design and building physics principles and modes of action in context and discuss them across different disciplines.
- They develop the ability to independently implement structural design and building physics requirements in solving building and construction tasks in context.
- They are able to apply design rules independently.
- They are able to independently produce construction drawings.

Contents:

Building design:
- Basic legal principles of building planning
- Construction drawings
- Building structure and load-bearing systems
- Structural stability
- Basic principles of brickwork construction
- Walls used in brickwork construction
- Walls used in wood construction
- Soil and foundation systems
- Structural waterproofing and drainage systems
- Ceiling and floor design

Building physics:
- Basic principles of building physics
- Protection against heat and humidity

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. A. Breukelman (Building design)	4 LVS	Course attendance time		Home study	
Prof. Dr. M. Deck (Building physics)	2 LVS	Lecture	60 h	Course accompanying and exam preparation	90 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**Technical mechanics, static 1**	**BH 1-4**		06.04.2021
Study semester	Offered in		Credit points		Semester week hours
1st semester	WS		6 CP		4 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
All		Prof. Dr.-Ing. Thomas Wedemeier	Lecture		
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Written examination (K2) -	

Module objectives/desired learning outcomes:

- Students are confident in their use of relevant quantities and terms of engineering mechanics.
- They are proficient with respect to the simplest basic principles and methods of plane statics.
- They are able to model the structural system of simple structures.
- They are able to model the structural system of simple structures.

Contents:

- Forces, momentum and force systems
- Equilibrium and equivalence
- Stability of rigid bodies
- Basic terminology used in structural engineering, types of structures and their application
- Method of sections, shear diagram
- Reaction forces, internal force variable of statically determinate supports
- Load case superposition

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr.-Ing. Thomas Wedemeier	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Key qualifications**	**BH 1-6**		01.09.2018
Study semester: 1st semester / Offered in: WS		Credit points: 3 CP		Semester week hours: 2 SWS
Allocation to study specialization: All	Responsible for module: Prof. Dr. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture and exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types: Student research paper with colloquium -	If applicable, weighting of the study/examination achievements

Module objectives/desired learning outcomes:

Students are aware of the different methods of general presentation.
They are able to prepare presentations targeted to specific audiences.
They are able to create posters with a color plotter.
They are aware of the design concepts and their implementation.

Contents:

Basic principles of presentation technology
Slides and poster design
Preparing presentations, stage fright
Delivering presentations
Post-presentation analysis
Rhetoric
Examples of presentations from professional practice and university, job application

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	2 LVS	Course attendance time		Home study	
	-	Lecture	20 h	Course accompanying and exam preparation	60 h
	-	Exercise	10 h		
	-	Other			
Total classroom time	**2 LVS**	**Total workload**			**90 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wood technology**	**BH 1-7**		01.09.2018
Study semester: 1st semester / Offered in: WS		Credit points: 3 CP		Semester week hours: 2 SWS
Allocation to study specialization: All	Responsible for module: N.N.	Type of teaching, group size, if applicable		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Written examination (K1) -	

Module objectives/desired learning outcomes:

Students learn about the structure of wood and how it is formed.
They will be able to explain the wood technological properties based on the structure and select and apply different types of wood in practice.

Contents:

Forest, timber harvesting, eco-cycle
European and tropical types of wood, differences
Wood anatomy
Structure of a wood cell
Tasks of a wood cell
Types of cells
Wood growth
Wood properties based on the structure of the wood

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	2 LVS	Course attendance time		Home study	
	-	Lecture	20 h	Course accompanying and exam preparation	60 h
	-	Exercise			
	-	Other	10 h		
Total classroom time	**2 LVS**	**Total workload**			**90 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Construction project**	**BH 2-6**		01.09.2018
Study semester: 2nd semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: N.N.	Type of teaching, group size, if applicable: Project work		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Module BH 2-8 Take course on Theory of construction at same time
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Project work with colloquium -	

Module objectives/desired learning outcomes:

Students learn about the development and design process in the furniture industry by developing a new product for the marketplace. They learn about and apply techniques to generate new ideas.
The project is carried out in project groups with a maximum of 5 students, who learn to organize themselves.

Contents:

Definition of objectives and development of specifications
Procedure according to VDI 2221
Use of various idea generation techniques
Selection of findings, evaluation procedure for the selection of a concept
Drafting and elaboration according to valid standards
Project presentation with lecture, poster and colloquium

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	6 LVS	Course attendance time		Home study	
Teaching assistant	6 LVS	Lecture	10 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other	50 h		
Total classroom time	**12 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Construction theory**	**BH 2-8**		01.09.2018
Study semester: 2nd semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: N.N.	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Students learn the systematics and methodology of drafting/design according to VDI 2221 and how to apply construction methods under supervision on the basis of practical examples.

Students are able to assess and evaluate a design on the basis of various criteria.

Contents:

Construction procedures according to VDI 2221
Application of construction methods intuitively, systematically-analytically, triz-based,
Methods for drafting and elaboration
Special features of technical drawing and drawing organization according to ISO 9001
Materials in furniture and interior finishing

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**CAD 1 Furniture**	**BH 2-10**		19.03.2019
Study semester: 2nd semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: Prof. Dr.-Ing. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture with exercises		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types: Student research paper without colloquium -	If applicable, weighting of the study/examination achievements

Module objectives/desired learning outcomes:

Students should be able to independently create extensive 2D and 3D design drawings using a CAD program and understand CAD technology.

Contents:

- General handling of AutoCad, basic terminology
- Coordinates, object snap methods, drawing commands
- Object selection, change commands
- Layering techniques
- Text and dimensioning
- Standards
- Parameterization and geometric dependencies
- Model/paper area (layout)
- Coordinate systems, moving in three-dimensional space
- View control, 3D orbit
- Volume modeling
- Change commands in 3D
- Lighting
- Animation and presentation
- Shade and render techniques

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Dipl.-Ing. E. Puls, M.A.	4 LVS	Course attendance time		Home study	
	-	Lecture	30 h	Course accompanying and exam preparation	120 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wood type identification**	**BH 2-11**		01.02.2019
Study semester: 2nd semester / Offered in: SS		Credit points: 3 CP		Semester week hours: 2 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: N.N.	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Written examination (K1) -	

Module objectives/desired learning outcomes:

Students are able to
carry out wood type identification macroscopally
carry out wood type identification
microscopally

Contents:

Wood anatomy
Structure of wood
Types of cells
Structure of a wood cell
Exercises in using a microscope
European types of wood
Tropical types of wood

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Dr. R. Buchholz	2 LVS	Course attendance time		Home study	
	-	Lecture	15 h	Course accompanying and exam preparation	60 h
	-	Exercise	15 h		
	-	Other			
Total classroom time	**2 LVS**	**Total workload**			**90 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Building survey, technical drawing**	**BH 2-13**		01.02.2019
Study semester: 2nd semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: N.N.	Type of teaching, group size, if applicable: Lecture with exercises		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Student research paper with colloquium -	

Module objectives/desired learning outcomes:

- Basic understanding in the recording of spatial conditions and constructive relationships based on the recording and representation in floor plans, sections and views
- Ability to plan a building survey and the drawings required in the process
- Ability to work in teams and work in an organized manner in groups
- Ability to independently make initial building surveys
- Development of spatial perception
- Ability to represent in two and three dimensions (axonometric and perspective)
- Training of sensitivity and creativity related to space and shape

Contents:

- History of building surveys
- Areas of application in building surveys
- Techniques used in building surveys
- Tools of the trade, equipment and instruments, CAD
- Levels of precision of the construction survey
- Two- and three-dimensional design basics and representation techniques
- Freehand drawing perspective
- Correspondence between representation and design

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
C. Prinzorn, Verw.-Prof.	2 LVS	Course attendance time		Home study	
Teaching assistant	2 LVS	Lecture	15 h	Course accompanying and exam preparation	120 h
	-	Exercise	45 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Engineering computer science**	**BH 2-14**		14.03.2019
Study semester: 2nd semester / Offered in: SS		Credit points: 3 CP		Semester week hours: 2 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Volker Krämer	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K1) -	

Module objectives/desired learning outcomes:

Students
- are able to take advantage of digital tools in their working environment.
- are familiar with basic terminology used in data processing.
- know common construction-specific application software for standard engineering tasks.
- know the structure of user input in structural analysis software (FEM).
- know that results of computer-aided calculations must be subjected to critical scrutiny.
- can solve engineering tasks with the help of spreadsheets they have created themselves.
- know the basics of a programming language.
- are able to read and debug program code.
- are familiar with basic algorithms and data structures.
- understand the meaning and application of object-oriented programming.

Contents:

- Presentation of software solutions for standard engineering tasks
- Criteria for the selection of suitable software solutions
- short presentation of FEM software, a design program and a CAS solution
- Introduction to a spreadsheet program
- Introduction to a programming language

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Dipl.-Ing. C. Seifart	2 LVS	Course attendance time		Home study	
	-	Lecture	30 h	Course accompanying and exam preparation	60 h
	-	Exercise			
	-	Other			
Total classroom time	**2 LVS**	**Total workload**			**90 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**Production technology project, business administration**	**BH 3-6**		01.09.2018
Study semester	Offered in		Credit points		Semester week hours
3rd semester	WS		6 CP		4 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
Furniture and interior finishing		N.N.	Project work		
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites
	BH2-6, BH2-8, BH3-8, courses taken at the same time
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Project work with colloquium -	

Module objectives/desired learning outcomes:

Students learn about interdisciplinary project work in groups.
Students use existing knowledge from the lectures and combine it with knowledge they have acquired on their own.
The project runs under a fixed deadline and milestones to be met precisely.

Contents:

In this project work, students work on tasks from actual practice of industrial companies. In the process, students identify the interfaces and produce a specification sheet. The results of the project work are to be presented in a practical manner for an audience of engineers.

A design is translated into work plans and manufacturing is planned. The workstations and machines are to be dimensioned and arranged in an operating layout. An organigram for the people employed in the plant is to be drawn up on the basis of the production and the operational environment.
The costs of the enterprise will be presented in an operational accounting sheet and the products calculated using overhead costing.

If possible, approaches for optimization are to be found on the basis of the findings.

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	6 LVS	Course attendance time		Home study	
	-	Lecture		Course accompanying and exam preparation	120 h
	-	Exercise	60 h		
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wood production technology**	**BH 3-7**		01.09.2018
Study semester: 3rd semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: N.N.	Type of teaching, group size, if applicable: Lecture with exercises		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types: Written examination (K2) -	If applicable, weighting of the study/examination achievements

Module objectives/desired learning outcomes:

Students learn about the organization of manufacturing and production.
They devise and evaluate manufacturing techniques on the basis of real-world examples.

Contents:

How manufacturing is organized and carried out
Types of manufacturing
Types of organization
Manufacturing techniques based on DIN 8580 for wood and wood-based materials
Cutting technology for wood
Production planning and control
Basic principles of materials handling
Examples from actual practice, supported by excursions

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	4 LVS	Course attendance time		Home study	
	-	Lecture	50 h	Course accompanying and exam preparation	120 h
	-	Exercise	10 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Woodworking machines and machine elements**	**BH 3-8**		01.09.2018
Study semester: 3rd semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 6 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: Prof. Dr.-Ing. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Students learn about the basic elements of as well as different concepts for woodworking machines. Furthermore, they should be able to evaluate different machines and create a catalog of criteria for the evaluation and investment calculation of different machines and production facilities.

Contents:

- Machine elements
- Materials and processing technologies
- Joining elements, rotary motion elements
- Bearings and guides
- Machine concepts and designs
- Frame components (set-up, materials)
- Static and dynamic loads
- Criteria for the analysis of machine components
- Vibration analyses
- Drives and controls (motors, gearboxes and powertrains)
- Electrical and electronic components
- Cost-effectiveness calculations, cost and performance analyses
- Interlinked and automated systems such as machining centers, manufacturing cells, manufacturing systems

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. F. Prekwinkel	4 LVS	Course attendance time		Home study	
Teaching assistant	2 LVS	Lecture	90 h	Course accompanying and exam preparation	90 h
	-	Exercise			
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Laboratory practical training

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Measurement and control technology**	**BH 3-9**		01.09.2018
Study semester: 3rd semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: Prof. Dr.-Ing. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Students acquire basic knowledge of sensor and actuator technology and a fundamental understanding of control processes. They should be enabled to realize simple control systems themselves on the basis of electronic contact controls and PLCs. They are to acquire the necessary expertise to plan the realization of extensive production control systems and to coordinate and control their realization by skilled technicians.

Contents:

- Defining terminology: Measurement, control and regulation
- Basic principles of measurement technology
- Elements making up electrical contact controls
- Electronic contact controls
- Electronic process controls SPS, microprocessors and PCs
- Programming microprocessors
- Programming SPS
- Sensor technology
- Basic principles of regulation technology: Characteristics of control loop elements
- Self-stable combinations
- Fuzzy regulators and neuronal networks

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. F. Prekwinkel	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**CAD 2 Furniture**	**BH 3-10**		19.03.2019
Study semester: 3rd semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: Prof. Dr.-Ing. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture with exercises		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	BH 2-10 CAD 1
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Student research paper without colloquium -	

Module objectives/desired learning outcomes:

Students are enabled to independently create design drawings using a discipline-specific, parametric CAD program.

Contents:

- Program overview, history
- General handling of Cimatron, basic terminology
- Coordinates, object snap methods, drawing commands
- Object selection, change commands
- Text and dimensioning
- Standards
- Processing of data collected elsewhere
- Overview of other CAD applications

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Dipl.-Ing. E. Puls, M.A.	2 LVS	Course attendance time		Home study	
Teaching assistant	2 LVS	Lecture	30 h	Course accompanying and exam preparation	120 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Drywalling and finishing construction**	**BH 4-2**		01.09.2018
Study semester: 4th semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: All	Responsible for module: N.N.	Type of teaching, group size, if applicable: Lecture/exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Student research paper with colloquium -	

Module objectives/desired learning outcomes:

- Knowledge of materials, types of construction, elements of construction, principles of construction of interior design
- Knowledge of soundproofing and fire safety for interior finishing
- Ability to develop an execution and detailed design plan taking into account the technical, structural, functional and design interrelationships and dependencies.
- Ability to independently prepare execution and detailed drawings

Contents:

- Materials in drywall and finishing
- Wall, ceiling and floor design
- Designs with special requirements
- Development of a finishing plan as execution and detail planning within the scope of a practical project

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. A. Breukelman	4 LVS	Course attendance time		Home study	
	-	Lecture	30 h	Course accompanying and exam preparation	120 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Project C-technology**	**BH 4-6**		01.02.2019
Study semester: 4th semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: Prof. Dr.-Ing. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture, practical lab training		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Successful completion of BH 3-8, BH 3-9
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Project work with colloquium -	

Module objectives/desired learning outcomes:

Students obtain practical experience in using CNC systems. They independently set up CNC machines for specific examples and design, create, test and document CNC programs.
They are enabled to develop their own learning strategies and conduct independent research. Within the project work they develop their own team, conflict, facilitation and leadership skills. They are also able to conduct project discussions in English.
The project improves their motivation, professional open-mindedness and agility, as well as their creativity.

Contents:

- Introduction to the existing CNC systems
- Commissioning of CNC systems
- Creating CNC programs
- Testing and quality assurance in CNC programming
- Documentation
- Optimization of CNC programs
- Optimization of process strategies
- Material-specific process strategies
- Start-up and shut-down movements
- Optimization of tool movements

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. F. Prekwinkel	4 LVS	Course attendance time		Home study	
Dipl.-Ing. N. Linda	2 LVS	Lecture	20 h	Course accompanying and exam preparation	120 h
Teaching assistant	2 LVS	Exercise	40 h		
	-	Other			
Total classroom time	**8 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**C-technology**	**BH 4-8**		01.09.2018
Study semester: 4th semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 6 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: Prof. Dr.-Ing. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Successful completion of BH 3-8, BH 3-9
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Students get to know the structure and operation of CNC-controlled manufacturing machines and systems. In addition, they are able to independently create CNC programs and install them without errors. They are also able to analyze the structure of CAD/CAM systems and implement them in practice. They analyze different functionalities and CAD/CAM strategies and evaluate them with regard to their suitability.

Contents:

- Structure and components of CNC systems
- CNC programming processes
- Methods of computer-aided work scheduling
- Structure of CAD/CAM
- Systems interfaces
- Integration of CAD/CAM systems
- Production control technology
- Integration of methods for quality assurance in automated manufacturing
- Integration of sensors and process controls

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. F. Prekwinkel	4 LVS	Course attendance time		Home study	
Teaching assistant	2 LVS	Lecture	90 h	Course accompanying and exam preparation	90 h
	-	Exercise			
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Laboratory practical training

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Production planning**	**BH 4-9**		01.09.2018
Study semester: 4th semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 6 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: Prof. Dr.-Ing. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Students become familiar with different planning and organizational methodologies and be able to use them as examples. Furthermore, they are able to analyze operational processes in wood and furniture production and evaluate them with regard to their economic efficiency.

Contents:

- Goals of production planning and management
- Strategic, tactical and operational production planning
- Production planning and control system concepts
- Legal and organizational framework
- Structural and process organization
- Flow production, workshop production, group production
- Layout planning
- Warehouse and transport planning
- Profitability calculations
- Key figures for the evaluation of production units
- Investment and financing
- Technology and environmental management
- Project management and controlling

In addition, along with the lectures there will be an offer of field trips to leading manufacturers of furniture, components and supplier parts.

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. F. Prekwinkel	4 LVS	Course attendance time		Home study	
Teaching assistant	2 LVS	Lecture	90 h	Course accompanying and exam preparation	90 h
	-	Exercise			
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Field trips

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Business administration in industrial companies**	**BH 4-10**		01.02.2019
Study semester: 4th semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: N.N.	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Written examination (K2) -	

Module objectives/desired learning outcomes:

on cost and performance accounting: Students
- are able to reconcile data from external accounting to data from the cost-performance analysis
- can carry out cost center and cost unit accounting on the basis of different, operational accounting sheets within the framework of full cost accounting
- are able to carry out unit costing on a full cost basis in the form of divisional and overhead costing
- can interpret the results of various forms of full and partial cost accounting and use them for decision-making

on investment decisions: Students
- can understand and apply basic principles of decision theory
- are to assess the advantageousness of investments with the help of selected suitable procedures of static and/or dynamic investment calculation
- are able to select and apply investment appraisal methods that also take into account non-monetary benefits and inputs

Contents:

on cost and performance accounting:
- Accruals and deferrals
- Cost type accounting, in particular determination of imputed costs
- Cost center accounting and cost object accounting in full cost accounting systems
- Cost accounting in the context of different forms of partial cost accounting
- Basic concept of machine hourly rate calculation
- Cost analysis on the basis of flexible standard costing

on investment decisions:
- Basic principles of business administration decision-making theory
- Monetary and non-monetary methods of investment appraisal
- Static and dynamic processes in investment appraisal
- Decisions based on security, risk, uncertainty

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	4 LVS	Course attendance time		Home study	
	-	Lecture	50 h	Course accompanying and exam preparation	120 h
	-	Exercise	10 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**Project Furniture**	**BH 5-6**		01.09.2018
Study semester	Offered in		Credit points		Semester week hours
5th semester	WS		6 CP		6 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
Furniture and interior finishing		Prof. Dr.-Ing. Frank Prekwinkel	Lecture and workshops		
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites
	BH 4-8, BH 4-9
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Project work with colloquium -	

Module objectives/desired learning outcomes:

Students experience the planning, design and manufacturing of furniture or furniture systems including sales and costing for a product line in a completed project. The course focuses not only on aspects of design and construction. In the same way, they develop and present appropriate measures in the area of company organization, production planning, planning of turnover and sales measures as well as accompanying strategy and organization measures.

Contents:

- Designing furniture elements
- Design implementation
- Corporate planning or corporate development
- Cost and sales planning
- Sales and marketing planning
- Planning of sales support measures
- Development of a business plan (business strategy)

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. F. Prekwinkel	6 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	90 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**6 LVS**	**Total workload**			**180 h**

Optional extra

Field trips

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Practical training phase**	**BH 6-1**		01.06.2021
Study semester: 6th semester / Offered in WS: + SS		Credit points: 30 CP		Semester week hours: n/a
Allocation to study specialization: All	Responsible for module: Prof. Dr. Ing. Mario Hanusrichter	Type of teaching, group size, if applicable: Pre- and post-seminar, practical phase		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
all CP from 1st + 2nd semester; additional 45 CP from semester 3 to 5	
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Seminar paper Student research paper without colloquium	15 weeks practical training (translates as 24 CP, pass/fail research paper (report) and seminar paper (translates as 6 CP) will be graded

Module objectives/desired learning outcomes:

- Application of previously acquired knowledge and skills in everyday professional practice, engineering work
- Gain competencies in an area that the student has designated for future employment
- Working in the training center is designed to give students some orientation for finding a topic for their Bachelor's thesis
- Stimulation to link non-specialist content with the student's own training to date
- Development of independent decision-making ability
- Presentation of the professional and social competence acquired during the course of study.

Contents:

Practical phase supervised by the wood engineering program of the Faculty of Architecture, Engineering and Conservation in a company, e.g. in the wood construction or furniture industry, in an engineering office, or comparable The company/institution must ensure that engineering supervision is possible during the practical phase, i.e. at least 1 engineer must provide supervision in the company (training facility). The regulations for the practical phase according to the Praxisphasenordnung (PraxisO) must be observed.

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Entire teaching staff, per student	0.1 LVS	Course attendance time		Home study	
	-	Lecture		Course accompanying and exam preparation	740 h
	-	Exercise			
	-	Other	10 h		
Total classroom time	**0.1 LVS**	**Total workload**			**750 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Individual profile studies**	**BH 7-1**		01.09.2018
Study semester: 7th semester / Offered in WS: + SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: All	Responsible for module: HAWK plus	Type of teaching, group size, if applicable: Course-dependent, according to information from HAWK plus		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types: Course-dependent -	If applicable, weighting of the study/examination achievements

Module objectives/desired learning outcomes:

Areas of competence of the Individual Profile Studies (IPS)
- Thinking and acting like an entrepreneur
- Leadership skills
- Communication and individual skills
- Social and societal skills
- Media skills
- Interdisciplinary specialized knowledge
- Language competence

Contents:

See the IPS Module Handbook for the current range of courses (https://www.hawk.de/de/hochschule/organisation-und-personen/zentrale-einrichtungen/hawk-plus/individuelles-profilstudium)

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Up to	4 LVS	Course attendance time		Home study	
	-	Lecture		Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other	60 h		
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Module for preparation of the final thesis**	**BH 7-2**		01.09.2018
Study semester: 7th semester / Offered in WS: + SS		Credit points: 6 CP		Semester week hours: n/a
Allocation to study specialization: All	Responsible for module: N.N.	Type of teaching, group size, if applicable: Supervised exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types: Student research paper without colloquium -	If applicable, weighting of the study/examination achievements

Module objectives/desired learning outcomes:

- Knowledge and skills in the application of the methods of academic work and writing
- Gain knowledge and skills in a field that the student has designated for his/her Bachelor's thesis
- Ability to grasp and present the state of the art in a given subject area
- Development of independent decision-making ability
- Presentation of acquired expertise in a given subject area

Contents:

For example:
Students conduct comprehensive literature searches covering not only monographs, but also journals and other series
Prepare and test experimental setups, test procedures or similar
Participation in seminars on methods used in academic work and writing (participation possible as early as 2nd semester)

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
All professors, per student	0.2 LVS	Course attendance time		Home study	
	-	Lecture		Course accompanying and exam preparation	177 h
	-	Exercise			
	-	Other	3 h		
Total classroom time	**0.2 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Bachelor's thesis**	**BH 7-4**		01.09.2018
Study semester: 7th semester / Offered in WS: + SS		Credit points: 12 CP		Semester week hours: n/a
Allocation to study specialization: All	Responsible for module: N.N.	Type of teaching, group size, if applicable: n/a		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
174 CP from semesters 1 bis 6	
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Final thesis with colloquium -	

Module objectives/desired learning outcomes:

- Ability to grasp and present the state of the art in a given subject area
- Develop and demonstrate independent decision-making skills
- Presentation of the acquired methodological competence
- Presentation of total expertise acquired in a given subject area

Contents:

For example:
Conducting comprehensive literature research with classification and evaluation, and/or
Carrying out practical investigations, test procedures or similar with evaluation, discussion and the student's own conclusions
and/or
Performing technical calculations with factual/technical appropriate presentation, and/or
Developing drafts from a given subject area in the field of wood engineering

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
First examiner	0.3 LVS	Course attendance time		Home study	
Second examiner	0.1 LVS	Lecture		Course accompanying and exam preparation	354 h
	-	Exercise			
	-	Other	6		
Total classroom time	**0.4 LVS**	**Total workload**			**360 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Practical training project**	**BHV 98**		01.09.2018
Study semester: 7th semester / Offered in WS: + SS		Credit points: 6 CP		Semester week hours: n/a
Allocation to study specialization: All	Responsible for module: N.N.	Type of teaching, group size, if applicable: Supervised external project		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Project work with colloquium -	

Module objectives/desired learning outcomes:

Practical training projects can be carried out in all the subject areas of wood engineering
Depending on the task, a subject-specific or interdisciplinary project with high practical relevance is carried out in cooperation with an engineering firm, a company, a specialist authority, etc. Students deal with a task that is narrowly defined in terms of content and scope, carry out experimental (laboratory/field) investigations if necessary, and work out solutions largely independently.
They are able to assess the effects and consequences of the solutions they have developed themselves, and they can make technical and economic assessments and classifications.

Contents:

Practical projects with different focuses from the fields of wood engineering or interdisciplinary
The assignment is coordinated with the students, the project partners and the supervisors for the intended task of the Bachelor's thesis and takes into account the specialization (major) chosen by the students.

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
entire teaching staff, per student	0.2 LVS	Course attendance time		Home study	
	-	Lecture		Course accompanying and exam preparation	177 h
	-	Exercise	3 h		
	-	Other			
Total classroom time	**0.2 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

HAWK Fakultät Bauen und Erhalten Hildesheim

Part 3

Specialization modules (majors) Wood engineering

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Mudbrick building**	**BHV 81**		03.12.2018
Study semester: 5th semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: -	Responsible for module: Prof. Dr.-Ing. Georg Maybaum	Type of teaching, group size, if applicable: Seminar		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types: Student research paper with colloquium -	**If applicable, weighting of the study/examination achievements**

Module objectives/desired learning outcomes:

Students
- understand mudbrick as a building material of the past, present and, in view of its renaissance in the 21st century, also as a building material of the future
  .
- are familiar with the design options that mudbrick offers as a building material.
- deal with its material properties as well as with traditional and modern construction methods and the state of the art of rehabilitation techniques within the framework of the basic theoretical principles.
- know about the connection to the Lehm e.V. network, which HAWK was involved in founding in 2008, the problems of production processes in the manufacture of mudbrick building products, the craftsmanship involved in the use of semi-finished mud products and, last but not least, the state of the art in research.
- gain valuable experience for quality assurance during their own practical exercises in the laboratory and valuable experience on site for tendering and construction management tasks.

Contents:

- History of mudbrick building
- Cultural heritage and world cultural heritage
- The building material and its characteristics
- Building methods such as adobe construction, Weller construction, rammed earth construction, half-timbered construction with compartments filled with clay/mud etc.
- Design options from yesterday, for today and for tomorrow
- Building improvement technologies
- Visits to construction sites, if applicable

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. G. Maybaum	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	90 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Practical exercises in the lab with a focus on quality assurance

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Safety and health protection**	**BHV-82**		20.03.2020
Study semester: 6th semester / Offered in SS:		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: -	Responsible for module: Prof. Dr. M. Hanusrichter	Type of teaching, group size, if applicable: Lecture, exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Safety and health protection during construction work (lecture):
- Acquisition of basic knowledge in health protection and occupational safety
- Acquisition of "occupational safety knowledge" in accordance with the Construction Site Ordinance in conjunction with RAB 30 Annex B
- Basic knowledge on how to prepare an operational risk assessment

Safety and health protection during construction work (exercise):
- Development of a sample risk assessment

Contents:

Occupational health and safety knowledge includes general principles of occupational health and safety, identification and assessment of hazards on construction sites and during subsequent work on the building structures, as well as the protective measures required for this and the organization of occupational health and safety on construction sites.

It focuses on, among other things:
Occupational health and safety legislation and system, site-specific accident and health hazards and necessary protective measures (measures for safety mining and civil engineering work, hazards due to falling, safe use of scaffolding, safe use of ladders, mobile scaffolds and lifting platforms, hazards due to electricity, operational fire protection, hazards due to hazardous substances, measures for safety during assembly work, measures for safety during demolition and renovation work, safe use of machinery and equipment), first aid facilities, day shelters, washrooms, toilets and other facilities, personal protective equipment

Based on this, students are gradually introduced to the preparation of a risk assessment for a construction company.

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant Dipl.-Ing. K. Oetke	4 LVS	Course attendance time		Home study	
	-	Lecture	50 h	Course accompanying and exam preparation	120 h
	-	Exercise	10 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Acquisition of the qualification for special coordinator knowledge according to Annex C (BaustellV, RAB 30), if applicable

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Practical training project**	**BHV 98**		01.09.2018
Study semester: 7th semester / Offered in WS: + SS		Credit points: 6 CP		Semester week hours: n/a
Allocation to study specialization: All	Responsible for module: N.N.	Type of teaching, group size, if applicable: Supervised external project		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Project work with colloquium -	

Module objectives/desired learning outcomes:

Practical training projects can be carried out in all the subject areas of wood engineering
Depending on the task, a subject-specific or interdisciplinary project with high practical relevance is carried out in cooperation with an engineering firm, a company, a specialist authority, etc. Students deal with a task that is narrowly defined in terms of content and scope, carry out experimental (laboratory/field) investigations if necessary, and work out solutions largely independently.
They are able to assess the effects and consequences of the solutions they have developed themselves, and they can make technical and economic assessments and classifications.

Contents:

Practical projects with different focuses from the fields of wood engineering or interdisciplinary
The assignment is coordinated with the students, the project partners and the supervisors for the intended task of the Bachelor's thesis and takes into account the specialization (major) chosen by the students.

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Entire teaching staff, per student	0.2 LVS	Course attendance time		Home study	
	-	Lecture		Course accompanying and exam preparation	177 h
	-	Exercise	3 h		
	-	Other			
Total classroom time	**0.2 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Special project**	**BHV 99**		01.09.2018
Study semester: 7th semester / Offered in WS: + SS		Credit points: 6 CP		Semester week hours: n/a
Allocation to study specialization: All	Responsible for module: N.N.	Type of teaching, group size, if applicable: Project with lab and field exercises		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Project work with colloquium -	

Module objectives/desired learning outcomes:

Practical training projects can be carried out in all the subject areas of wood engineering
Depending on the task, a subject-specific or interdisciplinary project with high practical relevance is carried out in cooperation with an engineering firm, a company, a specialist authority, etc., in which the student, largely independently, develops solutions that are designed to assess follow-up effects and provide technical and economic evaluations.

Contents:

Projects with different focuses from the fields of wood engineering or interdisciplinary The assignment will take into account the specialization/major chosen by the student.

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
All professors, per student	0.2 LVS	Course attendance time		Home study	
	-	Lecture		Course accompanying and exam preparation	177 h
	-	Exercise	3 h		
	-	Other			
Total classroom time	**0.2 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**CAD/CAM and joinery in wood construction**	**BHV 10**		14.03.2019
Study semester	Offered in		Credit points		Semester week hours
5th semester	WS		6 CP		4 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
Structural wood engineering		Prof. Dr.-Ing. Volker Krämer			
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites
	BH 3-2 ; BH 3-5 and BH 4-5
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K1) Project work with colloquium	

Module objectives/desired learning outcomes:

Students
- are able to independently design timber structures with special requirements and basic conditions
- are able to use CAD programs and to input the wood structures into CAD completely and according to the machine's requirements
- are able to use dimensioning programs and design the timber structures with dimensioning programs
- learn to export machine data for woodworking machines and produce the timber structure in cooperation with a timber construction company
- learn how to assemble and disassemble wooden structures

Contents:

- Planning and design of wooden structures in accordance with machine requirements
- Static calculation of wooden structures
- Use of CAD/CAM systems
- Controlling woodworking machines
- Joining, assembly and disassembly of wooden structures

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. V. Krämer	2 LVS	Course attendance time		Home study	
Teaching assistant	2 LVS	Lecture	30 h	Course accompanying and exam preparation	120 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**Special areas in wood engineering**	**BHV 31**		23.08.2018
Study semester	Offered in		Credit points		Semester week hours
5th semester	WS		6 CP		4 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
Structural wood engineering		Prof. Dr.-Ing. Volker Krämer	Lecture with exercises		
Can also be credited to study program			Language of instruction		
Bachelor of Civil Engineering			German		

Requirements according to examination regulations	Recommended prerequisites
Successful completion of BH 3-2 or BB 4-5	BH 2-12
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Students
- are able to independently design more complex components of timber structures in building construction in accordance with standards
- learn further joining techniques and their evidence in timber construction
- learn to design connections and the resulting additional stresses in the components
- learn how to verify cross laminated timber elements
- are enabled to design plate-shaped timber structures using the shear analogy method

Contents:

- Advanced topics in connection technology in timber construction
  - Multi-section connections
  - Interaction of different connection methods
  - Spring approaches (yielding) in timber construction
- Evidence of components subjected to transverse tensile stresses
- Evidence of breakthroughs in large-format components
- Determination of stresses in cross laminated timber elements
- Thrust analogy

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. V. Krämer	4 LVS	Course attendance time		Home study	
	-	Lecture	40 h	Course accompanying and exam preparation	120 h
	-	Exercise	20 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Wooden bridge construction**	**BHV 33**		23.08.2018
Study semester: 5th semester / Offered in SS:		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Volker Krämer	Type of teaching, group size, if applicable: Lecture with exercises		
Can also be credited to study program: Bachelor of Civil Engineering		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Successful completion of BH 3-2 or BB 4-5	BH 2-12
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Student research paper with colloquium -	

Module objectives/desired learning outcomes:

Students
- are able to independently design load-bearing systems for bridges in timber construction.
- learn about load assumptions and regulations for wooden bridges.
- learn about structural wood protection for wooden bridges.
- are enabled to design footbridges and cycle bridges in timber construction.

Contents:

- General introduction to wooden bridges
  - Historical wooden bridges
  - Development of wooden bridges
  - Examples
- Load assumption for wooden bridges
- Materials / structural wood protection
- Load-bearing systems
- Student research paper

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. V. Krämer	4 LVS	Course attendance time		Home study	
	-	Lecture	20 h	Course accompanying and exam preparation	120 h
	-	Exercise	40 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Fire safety and wood preservation**	**BHV 34**		01.09.2018
Study semester: 5th semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Sabine Iffert-Schier	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Solid construction:
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Seminar paper -	

Module objectives/desired learning outcomes:

1. Students receive a basic introduction to the multifaceted areas of fire safety and wood preservation and are sensitized to this subject matter.
2. Knowledge of the legal regulations
3. Knowledge of the terminology used in fire safety and wood preservation
4. Knowledge of fire safety and wood preservation in structures
5. Ability to take into account the requirements of fire safety and wood preservation in compliance with standards and regulations in the design and construction of structures

Contents:

Fire safety
1. Standards, regulations and codes
2. Basic principles
3. Fire, burning, definition, origin
4. Structural fire safety
5. Building materials, building products, building parts
6. Construction, escape routes, stairs, necessary corridors
7. Fire safety for special buildings
8. Fire safety concepts

Wood preservation
9. Basic principles
10. Animal and plant wood pests and their living conditions
11. Structural wood preservation
12. Wood preservation concepts

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. S. Iffert-Schier	2 LVS	Course attendance time		Home study	
Teaching assistant	2 LVS	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Fire safety**	**BHV 35**		23.10.2020
Study semester: 5th semester / Offered in: WS		Credit points: 3 CP		Semester week hours: 2 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr. Sabine Iffert-Schier	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Solid construction:
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K1)	

Module objectives/desired learning outcomes:

1. Students receive a basic introduction to the multifaceted areas of fire safety and wood preservation and are sensitized to this subject matter.
2. Knowledge of the legal regulations
3. Knowledge of the terminology used in fire safety and wood preservation
4. Knowledge of fire safety and wood preservation in structures
5. Ability to take into account the requirements of fire safety and wood preservation in compliance with standards and regulations in the design and construction of structures

Contents:

Fire safety

1. Standards, regulations and codes
2. Basic principles
3. Fire, burning, definition, origin
4. Structural fire safety
5. Building materials, building products, building parts
6. Construction, escape routes, stairs, necessary corridors
7. Fire safety for special buildings
8. Fire safety concepts

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	2 LVS	Course attendance time		Home study	
		Lecture	30 h	Course accompanying and exam preparation	60 h
		Exercise			
		Other			
Total classroom time	**2 LVS**	**Total workload**			**90 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Steel engineering**	**BHV 39**		01.09.2018
Study semester: 5th semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Stefanie Steppeler	Type of teaching, group size, if applicable: Lecture with integrated exercises		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	BH 1-1, BH 1-4, BH 2-4
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K2) -	

Module objectives/desired learning outcomes:

Students
- know the most important material properties of steel
- are able to apply the European safety concept in relation to steel construction-specific safety and the basic European dimensioning standards in steel construction
- are proficient in the standard-compliant verification of the structural safety and serviceability of simple tension and compression members and of bending girders in steel structures
- learn how to design and dimension simple connections in steel construction in accordance with standards
- detect components in steel construction that are at risk in terms of stability
- have mastered the basic standard-compliant checks for simple beams and columns in steel structures that are at risk in terms of stability

Contents:

- Steel and steel products, material properties
- Safety concept with regard to steel structure-specific safety features
- Introduction to the European dimensioning standards in steel construction
- Basic principles of dimensioning and design of simple tension and compression members as well as bending girders in steel construction
- Basic principles of dimensioning and design of simple bolted and welded joints
- Basic principles of the phenomena of stability specific to steel construction
- Basic principles of the dimensioning of simple beams and supports in steel structures that are subject to stability hazards

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Currently, teaching assistant	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Energy-efficient building**	**BHV 40**		01.09.2018
Study semester: 5th semester / Offered in SS:		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. Alfred Breukelman	Type of teaching, group size, if applicable: Lecture with exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Student research paper without colloquium -	

Module objectives/desired learning outcomes:

Awareness of the connection between energy consumption, nature and the environment
Holistic assessment of building concepts and analysis of materials, structures and building services systems according to energy efficiency criteria
Students gain knowledge of energy efficient design and construction in the overall context of building design
Knowledge of energy efficiency standards and energy balancing
Knowledge of the options for passive and active use of regenerative energies
Knowledge of tools and methods for a planning and construction process optimized according to energy efficiency criteria
Ability to develop project-specific objectives and solution strategies according to the criteria of energy efficiency and to put them into practice in project work

Contents:

Description of contents:
- Climate, energy, sustainability
- Energy needs in the building life cycle
- Development of environmentally and climate-compatible construction methods
- Legal regulations and requirements: EnEV, EEWärmeG, EEG, EU Building Directive, etc.
- Energy balance in buildings
- Basic principles of energy balancing: Balancing area, balancing criteria and balancing limits
- Energy needs and balancing according to EnEV for residential and non-residential buildings
- Building energy standards: Passive house, KfW efficiency house, zero, plus energy house
- Energy-optimized building planning Building structure, building enclosure, building services Buildings as energy systems
- Passive and active planning strategies for reducing energy needs and optimizing energy supply
- Energy efficiency in existing buildings
- Environmentally compatible building materials and structures
- Examples of buildings in detail

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. A. Breukelman	4 LVS	Course attendance time		Home study	
	-	Lecture	45 h	Course accompanying and exam preparation	120 h
	-	Exercise	15 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Building acoustics in wood structures**	**BHV-44**		01.02.2019
Study semester: 5th semester / Offered in: WS		Credit points: 3 CP		Semester week hours: 2 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr. A. Breukelman	Type of teaching, group size, if applicable: Lecture, with some parts as a seminar		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Written examination (K1) -	

Module objectives/desired learning outcomes:

- Understanding of building acoustical relationships in wood structures
- Ability to evaluate building acoustical situations in wood structures
- Ability to perform building acoustical calculations and preliminary dimensioning in project design
- Ability to perform structural and detailed planning in accordance with building acoustical requirements

Contents:

- Basic principles of soundproofing/building acoustics according to DIN 4109
- Methods of calculation and dimensioning for timber and lightweight construction according to DIN 4109
- Analysis of components and structural designs
- Building site measurements and building acoustics in actual practice
- Excursion on application technology
- Practical lab work

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Dipl.-Ing. G. Sponfelder	2 LVS	Course attendance time		Home study	
	-	Lecture	20 h	Course accompanying and exam preparation	60 h
	-	Exercise			
	-	Other	10 h		
Total classroom time	**2 LVS**	**Total workload**			**90 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**FEM in structural wood engineering**	**BHV-47**		29.07.2021
Study semester: 5th semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. V. Krämer	Type of teaching, group size, if applicable: Contact studies		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Static 1 to 3, Wood engineering 1 und 2
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Student research paper with colloquium -	

Module objectives/desired learning outcomes:

Students
- have basic knowledge on how FEM programs work.
- are able to use a FEM system commonly used in the construction industry with confidence.
- can check the results of computer calculations.
- are familiar with methods of pre- and post-processing.

Contents:

- History and areas of application for FEM
- Description of half-timbered structures with systems of equations
- Computer-aided solution of equation systems
- Basic structure of FEM programs
- Introduction to an FEM system
- Formation of static systems in the field of timber construction
- Calculation of flat and spatial static systems
- Modeling taking into account connection stiffnesses and eccentricities
- Quality control of the static calculation
- Using a spreadsheet program with a macro language for pre- and post-processing

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Dipl.-Ing. C. Seifart	4 LVS	Course attendance time		Home study	
	-	Lecture	45 h	Course accompanying and exam preparation	120 h
	-	Exercise	15 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Supporting structures in wood engineering**	**BHV-48**		29.07.2021
Study semester: 4th semester / Offered in: SS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Structural wood engineering	Responsible for module: Prof. Dr.-Ing. V. Krämer	Type of teaching, group size, if applicable: Contact studies		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Lectures in wood engineering 1 and 2, static
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Student research paper with colloquium -	

Module objectives/desired learning outcomes:

Students
- acquire knowledge of the advantages and disadvantages of different structural designs.
- know criteria used for structural design.
- know the relationships between design and the static system.
- are able to analyze existing timber structures.

Contents:

- Discussion of typical wooden structures such as beams, frames and arches
- Bracing of the supporting structures via planar primary and secondary systems
- Room support structures and girder grids
- Design of connections and supports (joints, restraints)

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Dipl.-Ing. C. Seifart	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**CAD-CAM practical training project**	**BHV 02**		01.02.2019
Study semester: 5th semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: Prof. Dr.-Ing. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture with exercises		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types: Student research paper with colloquium -	If applicable, weighting of the study/examination achievements

Module objectives/desired learning outcomes:

- Independent work with CNC machines with 5 machining axes
- Independent work with CAD/CAM systems
- Independent execution of projects in groups
- Within the project work they develop their own team, conflict, facilitation and leadership skills
- Knowledge of the structure of CAD/CAM systems and how they work
- Knowledge of the different processing strategies
- Practical application of theoretical knowledge already acquired

Contents:

- Planning, design, manufacture and assembly of furniture or stairs on a smaller scale
- Conversion of digital 3D CAD designs into 3D models using 5-axis technology
- Programming methods with 5 processing axes
- Milling technology with 5 processing axes
- Multi-side processing
- 4/5 axes simultaneous processing
- Structure of different CAD/CAM systems and how they work
- Data exchange between different CAD/CAM systems
- 3D digitization
- Practical application of materials and material knowledge
- Consideration of occupational safety and accident prevention when operating processing machines

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	2 LVS	Course attendance time		Home study	
Dipl.-Ing. N. Linda	2 LVS	Lecture	30 h	Course accompanying and exam preparation	120 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**CIM – Computer-integrated furniture manufacturing**	**BHV 03**		01.09.2018
Study semester: 5th semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: Prof. Dr.-Ing. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture		
Can also be credited to study program: -		Language of instruction: German		
Requirements according to examination regulations		Recommended prerequisites: BH 4-8, BH 4-9		
Study/examination achievements/ examination types: Project work with colloquium -		If applicable, weighting of the study/examination achievements		

Module objectives/desired learning outcomes:

Students learn about different strategies for modern computer-aided manufacturing and are able to evaluate their potential applications. They also learn about the selection, implementation and integration strategies for CIM systems and components. In addition, they acquire basic knowledge of the structure and functioning of database-driven production planning and control systems (PPS/ERP).

Contents:

- Structure of computer-integrated production systems (CIM systems)
- Basic technology, such as relational databases, SQL e.a.
- CIM components (CAD, CAM, ERP/PPS e.a.)
- Scope of services and performance evaluation
- Development of CIM concepts based on examples of production strategies
- Integration strategies
- Interfaces and limits
- Outlook on future developments
- IT project management and controlling
- Practical examples

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. F. Prekwinkel	4 LVS	Course attendance time		Home study	
	-	Lecture	60 h	Course accompanying and exam preparation	120 h
	-	Exercise			
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Field trips

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Additive production technology**	**BHV 04**		01.09.2018
Study semester: 5th semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: N.N.	Type of teaching, group size, if applicable: Project work, max. of 12 participants		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
	Knowledge corresponding to BH 2-8 and BH 2-10
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Project work with colloquium -	

Module objectives/desired learning outcomes:

Module objectives/desired learning outcomes:

Application of methods for identifying development potential in the furniture sector, selection and application of methods for generating ideas
Selection and application of methods for prototyping

Creation of prototypes (rapid prototyping) on HAWK equipment
Digital collaborative knowledge documentation and digital collaborative knowledge management (wikis).

Contents:

Description of contents:
Development of furniture, furniture details or related topics using the design techniques from the BH2-8 Design Theory module and extensive CAD knowledge in 3D modeling
Implementation of the concept as a practical prototype with current rapid prototyping techniques, if necessary in combination with skilled trade techniques, 3D data acquisition and the use of C-technologies
Project-related knowledge documentation and knowledge management in a project-related topic wiki

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Dipl.-Ing. E. Puls, M.A.	4 LVS	Course attendance time		Home study	
	-	Lecture	10 h	Course accompanying and exam preparation	120 h
	-	Exercise	50 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature
is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**Experimental furniture design**	**BHV 05**		01.02.2019
Study semester	Offered in		Credit points		Semester week hours
5th semester	WS		6 CP		4 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
Furniture and interior finishing		Prof. Dr. Frank Prekwinkel	Lecture		
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Student research paper with colloquium -	

Module objectives/desired learning outcomes:

- Students recognize and take advantage of material properties that are not typical of the furniture making field.
- Use of materials for special requirements in technical and/or design form
- Enable and encourage unconventional thinking

Contents:

- Search for unconventional materials
- Exercises on materials in technical and/or design terms
- Design of furniture using conventional and unconventional materials
- Implementation of the design as a sample, model or prototype

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	4 LVS	Course attendance time		Home study	
	-	Lecture	10 h	Course accompanying and exam preparation	120 h
	-	Exercise	50 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**Freehand drawing for engineers**	**BHV 06**		01.02.2019
Study semester	Offered in		Credit points		Semester week hours
5th semester	WS		6 CP		4 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
Furniture and interior finishing		Prof. Dr. Frank Prekwinkel	Lecture		
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Student research paper with colloquium -	

Module objectives/desired learning outcomes:

- Drawing and sketching without tools, such as a ruler or CAD
- Representing ideas in the form of sketches as a means of communication

Contents:

- Lessons on how to sketch and draw
- Criticism and guidance for improvement and clarification

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Teaching assistant	4 LVS	Course attendance time		Home study	
	-	Lecture	10 h	Course accompanying and exam preparation	120 h
	-	Exercise	50 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**IMOS 1 – Object-oriented CAD/CAM**	**BHV 07**		01.09.2018
Study semester: 5th semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: Prof. Dr.-Ing. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture with exercise		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites

Study/examination achievements/ examination types	If applicable, weighting of the study/examination achievements
Project work with colloquium -	

Module objectives/desired learning outcomes:

Students learn about object-oriented CAD/CAM techniques in order to be able to evaluate the possibilities of automation in technical order processing. Furthermore, the students should be able to structure the processes in order processing in furniture and interior design (planning, order entry, order processing, design, parts lists, work schedules, production planning, NC programming) in such a way that efficiency and quality can be increased with a high degree of individuality and planning freedom using CAD/CAM techniques.

Contents:

- Structure of object-oriented CAD/CAM systems
- Analysis of processes and organizational structures
- Requirements within the processes for planning, order entry, order processing, design, bills of material, work schedules, production planning, NC programming
- Definition of objects and properties as well as development of rules for design and production planning
- Graphical order entry and complete order processing
- Definition of parts lists and production documents
- Cost and time analyses, evaluation processes
- Practical examples

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. F. Prekwinkel	2 LVS	Course attendance time		Home study	
Teaching assistant	2 LVS	Lecture	30 h	Course accompanying and exam preparation	120 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Literature

is listed in Stud.IP

Allocation to course of study		Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering		**IMOS 2 – Practical examples for the use of CAD/CAM**	**BHV 08**		01.09.2018
Study semester	Offered in		Credit points		Semester week hours
5th semester	WS		6 CP		4 SWS
Allocation to study specialization		Responsible for module	Type of teaching, group size, if applicable		
Furniture and interior finishing		Prof. Dr.-Ing. Frank Prekwinkel	Lecture with exercise		
Can also be credited to study program			Language of instruction		
-			German		

Requirements according to examination regulations	Recommended prerequisites
	BHV 07
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Project work with colloquium -	

Module objectives/desired learning outcomes:

Students deepen their understanding of the use of object-oriented CAD/CAM techniques using a variety of application examples. To this end, practical examples will also be implemented with industry partners. The main focus will be on:
- Handling a customer-specific project from initial planning to CNC machine connection
- Creation of product catalogs with configuration logic and pricing methodology
- Implementation of internet-based business models for furniture production

Students are able to analyze and structure common interior design and furniture production processes and optimize them using modern software technologies.

Contents:

- Acquisition of advanced knowledge regarding object-oriented CAD/CAM systems
- Connection of CNC machines, optimization of the machining strategy
- Analysis of customer requirements, product catalogs, and fulfillment processes when using Internet-based order fulfillment systems
- Use of a product configurator for the customized configuration of furniture elements
- Creation of product catalogs
- Structure and design of calculation and pricing logistics
- Practical examples

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. F. Prekwinkel	2 LVS	Course attendance time		Home study	
Teaching assistant	2 LVS	Lecture	30 h	Course accompanying and exam preparation	120 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Field trips

Literature

is listed in Stud.IP

Allocation to course of study	Module name	Course code	Internal	Last updated
Bachelor of Wood Engineering	**Digitization in the wood and furniture industries**	**BHV 09**		01.09.2018
Study semester: 5th semester / Offered in: WS		Credit points: 6 CP		Semester week hours: 4 SWS
Allocation to study specialization: Furniture and interior finishing	Responsible for module: Prof. Dr.-Ing. Frank Prekwinkel	Type of teaching, group size, if applicable: Lecture with exercises		
Can also be credited to study program: -		Language of instruction: German		

Requirements according to examination regulations	Recommended prerequisites
Study/examination achievements/ examination types	**If applicable, weighting of the study/examination achievements**
Student research paper with colloquium -	

Module objectives/desired learning outcomes:

Modern corporate and, in particular, product and production strategies are characterized by a trend toward digitization. Whether it's Industry 4.0, Internet-of-Things (ioT) or the use of web-based configuration and communication technologies: The aim is to get the end customer more closely involved in the business processes.
This course is designed to familiarize students with technologies from Industry 4.0 and ioT. In addition, different industry examples are to be analyzed and their success factors identified.
Students should be able to evaluate the feasibility of their own and other people's digitization ideas, implement strategies for planning, realizing and operating digital processes, and develop criteria for success monitoring, profitability analysis and performance enhancement.

Contents:

- Status quo of technologies for Industry 4.0 and internet of Things (ioT)
- Possible applications of different technologies, especially in the furniture industry
- Analysis of different digitization strategies from the USA, China and Europe
- Standardization efforts
- Technologies for product configuration in the furniture industry
- Strategies for web-based order process management
- Practical examples
- Economic efficiency analysis of selected practical examples
- Identification of success factors based on selected practical examples

Course attendance time (in mandatory hours - LVS)		**Workload** (in hours)			
Prof. Dr. F. Prekwinkel	2 LVS	Course attendance time		Home study	
Teaching assistant	2 LVS	Lecture	30 h	Course accompanying and exam preparation	120 h
	-	Exercise	30 h		
	-	Other			
Total classroom time	**4 LVS**	**Total workload**			**180 h**

Optional extra

Field trips

Literature

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March 2022

This Module Handbook has been translated from German to English by Johnson Translations, Hildesheim.

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