

Module Handbook

B.Eng. ARCHITECTURE (IN ENGLISH) (SPO SS 26)

Faculty of Sustainable Infrastructure

Study and examination regulation SS 26

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1 Overview

The module handbook describes the individual modules of the Architecture program. It outlines the course content, the intended learning outcomes, and the assessment requirements for each module. It also describes the program's objectives and potential career paths that result from studying architecture.

Name of the study course	Architecture
Degree & type of program	Bachelor of Engineering (B.Eng.)
Profil §12 (6) BayStudAkkV	full time course
First start of program	Summer 2025 / 2026, every semester
Programme duration	8 Semester (240 ECTS) (+ 1Sem possible)
Place of study	THI, Campus Neuburg
Teaching Language/s	English / German
Kooperation §19 - 20 BayStudAkkV	none
Admission Requirement	University Entrance Qualification

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2 Introduction

2.1 Objective

The “Architecture” degree program aims to impart the specific expertise, methodological, professional, and social competencies that enable students to holistically address the architectural challenges of the built environment in the 21st century and to design livable, sustainable, and equitable environments. The program focuses on developing integrative design competencies that combine artistic and creative exploration with technical and constructive plausibility to create appropriate solutions for the respective site and social context.

Particular emphasis is placed on sustainable and resource-efficient construction as well as the development of innovative, user-centered concepts that consider ecological, technical-economic, and sociocultural dimensions of sustainability. Students acquire knowledge in life cycle assessment and energy-efficient design, as well as skills in integrating circular construction methods, low-emission and recyclable materials, and climate-resilient planning approaches.

In addition to specialist knowledge, the program promotes critical thinking, analytical, and reflective skills. This includes interdisciplinary and transdisciplinary collaboration, recognizing complex interrelationships, networked thinking, and the ability to question and further develop existing standards. Communication skills and the ability to form well-founded, balanced judgments are also strengthened.

2.2 Admission Requirements

For the bachelor's degree program, the general admission requirements for studying at universities of applied sciences must be met.

The binding regulations for this study plan can be found in:

- [Study and examination regulations \(SPO\) for the bachelor's degree program in Architecture in the version dated December, 15th, 2025](#) (the German version is legally binding)
- [General examination regulations \(APO\) of the Ingolstadt University of Technology](#)
- [Matriculation regulations of the Ingolstadt University of Technology](#). The relevant provisions of the study and examination regulations influence the course of study.
- Statutes for the aptitude test ([April, 20th, 2026, pdf](#))

2.3 Target Group

The program is aimed at people who:

- want to understand architecture as a connection between art, technology, history, and society
- enjoy creative work and design expression
- possess creative talent as well as strong spatial perception and imagination skills
- are interested in structural, technical, and social issues
- want to help shape sustainable and future-oriented living environments
- wish to develop skills in coordinating interdisciplinary collaboration

- want to strengthen their communication, negotiation, and leadership skills
- are seeking a meaningful field of work that plays an active role in shaping the built environment and social coexistence

2.4 Curriculum

The standard period of study is eight semesters, but this may be extended by one semester if additional language training is required. The program is divided into two stages. The first stage comprises three theoretical semesters. The second stage comprises five theoretical semesters and one practical semester, which is counted as the fifth / sixth semester.

The following figure shows the course structure.



2.5 Requirements for Advancement

Only students who have obtained at least 42 ECTS credits from the modules of the first stage of study are eligible to enter the second stage of study.

Students are only eligible to enter the internship of the practical semester if they have achieved at least a “sufficient” grade in all examinations and coursework relevant to the first stage of the program and have earned at least 40 ECTS credits from the compulsory modules of the second stage of the program.

2.6 Concept and Advisory Board

The degree programme was originally designed by subject-matter experts at THI in collaboration with representatives from professional practice. Since the launch of the programme, it has been continuously reviewed and further developed by the department's architects through an intensive and ongoing exchange with an independent network of representatives from other schools of architecture and professional bodies.

3 Qualification Profile

3.1 Mission statement

The course of study directly addresses the general mission statement of the THI “Personalities and innovations – for a future worth living.” and its concept is aimed at the individual focal points:

- We develop personalities for the professional world of the future.
- We create innovations and live sustainability – technology and business are our focus.
- We shape the transfer in the economy and society.
- We teach, research and work internationally and in an interdisciplinary manner.
- We act humanely, passionately and open to the world.

3.2 Objectives

Students acquire a solid foundation across all areas of architecture. Building on this, they develop the competencies to critically, creatively, and responsibly leverage digital technologies and sustainability principles in the design, planning, and transformation of the built environment.

3.2.1 Subject-specific competencies of the degree program

The graduates of the course will be able to:

- independently develop complex architectural designs based on a broad fundamental understanding of design, ecology, construction, and socio-cultural aspects
- methodically develop architectural design and layout concepts for buildings and urban spaces
- confidently apply structural engineering, construction, and material-related fundamental principles
- integrate principles of structural engineering, building physics, and building technology into planning processes
- apply fundamental building regulations, legal frameworks, and standards
- calculate and control construction costs and timelines, and evaluate them in terms of their life cycle
- implement sustainable, energy-efficient, and resource-saving design strategies
- reflect on historical and theoretical aspects of architecture, urban development, urban planning, building technology, and sociology
- use digital planning and visualization methods (CAD/BIM) professionally
- obtain professional qualification as an architect after at least two years of professional experience. (Prerequisite for registration with the Chamber of Architects.)
- continue with an in-depth master's degree to meet the requirements for worldwide registration or licensing. (Often necessary to achieve the minimum study period required by international guidelines.)

3.2.2 Interdisciplinary Competencies of the degree program

The graduates of the course will be able to:

- communicate design results clearly and precisely
- critically evaluate solutions from different perspectives and weigh ecological, economic, ethical, and social aspects in multidisciplinary teams
- understand user needs and social aspects
- apply their theoretical knowledge and practical experience creatively and innovatively in construction practice.
- design buildings and urban spaces responsibly and ethically for global change toward climate neutrality.
- organize complex planning processes in a structured way and manage projects methodically with strong communication, negotiation, and assertiveness skills.
- use compulsory and advanced content as a basis for further studies and professional qualifications
- to work in a scientific manner that is practice-based, design driven and informs theory

3.2.3 Examination Concept of the Study Program

The forms of examination enable the assessment of the transfer of knowledge in addition to the seminar form of teaching

3.3 Practical application of the Degree Program

The program is closely connected to architectural practice. Core design projects in each semester ensure practical relevance and provide an integrative framework in which students bring together design, technical, ecological, and social considerations.

Faculty members with established professional experience and a distinguished body of work guide students in the development of practice-oriented design and project work, provide insights into current challenges and developments in architecture, and support the formation of an independent architectural position. Interdisciplinary design and project work fosters collaboration in small teams and strengthens students' ability to apply knowledge from different fields to specific design challenges.

3.3.1 Contribution of individual modules to the Program Objectives

The program provides students with the disciplinary, methodological, and design foundations of architecture through its core modules. At its center is the ability to integrate design, technical, ecological, and social considerations within the architectural design process. Engagement with sufficiency, resource conservation, circularity, and climate resilience, as well as with continuously evolving digital design, communication, and production methods, is an integral part of the curriculum and shapes all phases of the program.

3.4 Potential career fields

Graduates of the course are prepared for specialist and management positions in the following areas:

- Planning and designing buildings and the built environment
- Implementation and detailed planning
- Project coordination and management of construction projects
- Construction management and property supervision
- Working in building authorities and planning authorities
- Sustainable construction and climate-friendly design

Graduates' professional areas of focus will be in the following areas:

- Architecture and planning offices
- Construction industry and construction companies
- Real estate and project development companies
- Public institutions (municipalities and building authorities, ministries)
- Housing industry and housing associations
- Industrial and commercial construction companies
- Engineering and specialist planning offices

4 Description of Modules

4.1 Compulsory modules

Design 1

Module abbreviation	ARC_Design1	Reg.-Nr.	1
Curriculum	Study Programme	Module type	Semester
	Architecture (in English) (SPO SS 26)	Compulsory Subject	1
Module frequency	not specified	Module duration	1 semester
Responsible for module	Mückenheim, Mark		
Lecturer(s)	Mückenheim, Mark		
Language of instruction	English	Language of exams	English
Credit points / SWS	5 ECTS / 4 SWS		
Workload	Contact hours	47 h	
	Self-study	78 h	
	Total	125 h	
Subjects of the module	Design 1		
Lecture types	SU/Ü - seminar-based teaching with exercise		
Examinations			
Exam Study Work, presentation 15 minutes, written composition (5-15 pages)			
Additional explanations regarding examinations			
The exam requirement is fulfilled in the form of course projects (Prüfungsstudienarbeiten - Exam-Relevant Study Projects). The semester requirement consists of 3–4 sequential course projects (architectural design exercises) that are worked on and documented over the course of the semester. Components of the final exam course assessment include the analytical documents, sketches, drawings, plans, models, and other task-related representations and documentation developed as part of the design exercises (Prüfungsstudienarbeiten - Exam-Relevant Study Projects), which students compile into a presentation at the end of the semester. At the end of the semester, the results of the design exercises are presented and explained as part of a final presentation. The presentation focuses on the key design decisions, conceptual approaches, analyses, and development steps. Grading is based on the examination projects completed throughout the semester as an overall performance. In particular, the following are evaluated: the quality of the analysis, the clarity of the design process, the development and implementation of the architectural concept, the treatment of space, materials, and context, the quality of the drawings and models, as well as the technical and argumentative quality of the final presentation. Students have the opportunity to earn bonus points worth 10% of the final grade for additional development work on the design exercises at the end of the semester and other assignment updates and improvements.			
Prerequisites according examination regulation			
None			

Recommended prerequisites

No specific prior technical knowledge is required. Prerequisites for successful participation in the module include an openness to creative and spatial issues, a willingness to engage experimentally with design tasks, and consistent participation throughout the semester. Regular attendance at the accompanying courses and lectures is expected, as these provide essential theoretical foundations and subject-specific context for working on the design assignments. Adherence to work and submission deadlines is a mandatory component of the module.

Objectives

Upon successful completion of the module, students will be able to

- identify and analyze the contextual, spatial, and functional parameters of a simple architectural design task.
- derive and develop initial architectural ideas, concepts, and spatial solutions based on an analysis of a design task.
- understand design processes as an iterative and open-ended approach, test variations, and gradually refine design solutions.
- apply fundamental design methods as well as experimental design approaches to explore spatial and formal issues.
- Incorporate scale, proportion, simple functional requirements, and site-specific conditions into the development of an architectural design.
- Develop, reflect on, and communicate spatial concepts in a comprehensible manner using sketches, models, and other architectural representation methods.
- Apply basic architectural representation and presentation techniques in a manner appropriate to the intended audience.

Translated with DeepL.com (free version)

Content

- Introduction to fundamental methods and strategies of architectural design
- Analysis and interpretation of space, place, and context as the basis for design
- Development of simple architectural concepts and spatial programs
- Design as an iterative process involving analysis, idea, design, and reflection
- Creative and experimental design methods
- Morphological development and the creation of design variants
- Fundamentals of spatial formation, spatial perception, and spatial organization
- Scale, proportion, and spatial order
- Functional relationships and their implementation in simple design tasks
- Topography, urban planning, surroundings, and cultural context as design parameters
- Model-making as a tool for analyzing, developing, and communicating design ideas
- Fundamentals of architectural representation through sketches, drawings, plans, and models
- Comparative analyses and series studies as methods of design development
- Theory and history of modern and contemporary architecture
- Architecture, art, and culture as a frame of reference for the design process
- Architectural quality as an expression of cultural, social, and spatial issues
- Introduction to sustainability as an integral part of architectural thinking and design
- Presentation and discussion of design concepts

Literature

- BIELEFELD, Bert, 2007. *Design ideas*. Basel ; Boston ; Berlin: Birkhäuser. ISBN 978-3-7643-8112-7, 3-7643-8112-4

		Architecture (in English) (SPO SS 26)

- DUNN, Nick, 2014. *Architectural modelmaking*. London: Laurence King Publishing. ISBN 1-78067-646-8, 1-78067-649-2
- BIELEFELD, Bert, 2021. *Basics Architectural Presentation*. Basel ; Boston ; Berlin: Birkhäuser. ISBN ISBN 978-3-0356-2314-7

Additional remarks
None

Fundamentals of Building Construction 1

Module abbreviation	ARC_Fundamentals-BuildConstruction	Reg.-Nr.	2
Curriculum	Study Programme	Module type	Semester
	Architecture (in English) (SPO SS 26)	Compulsory Subject	1
Module frequency	only summer term	Module duration	1 semester
Responsible for module	Bergmann, Daniela		
Lecturer(s)	Bergmann, Daniela		
Language of instruction	English	Language of exams	English
Credit points / SWS	5 ECTS / 4 SWS		
Workload	Contact hours	47 h	
	Self-study	78 h	
	Total	125 h	
Subjects of the module	Fundamentals of Building Construction 1		
Lecture types	SU/Ü – Seminar-style teaching with exercises 2 SWS lecture, 2 SWS exercise		
Examinations			
Exam Study Work, presentation 15 minutes, written composition (5-15 pages)			
Additional explanations regarding examinations			
- The basic principles are further developed and consolidated through project examples and an individual project assignment. The results are documented in an examination study paper. - The oral presentation of 15 minutes per person will take place in the examination phase. - The exact dates will be announced at the beginning of the semester in class and on Moodle.			
Prerequisites according examination regulation			
None			
Recommended prerequisites			
None			
Objectives			
Professional competence - Upon successful completion of the module students: - have basic knowledge of structural design and its technical foundations. - are familiar with the fundamental concepts of building construction. - are able to classify building regulations and technical standards within their professional context. - understand the fundamental interdependencies between construction, form, and design. They are aware of the relationship between building construction, material, load-bearing structure and design. - are able to explain the basic concepts and objectives of sustainable design. - are able to identify, analyse, reconstruct, and evaluate structural systems, construction principles, and jointing principles of simple building structures. - are able to transfer this knowledge to their own designs of low complexity, explain them in a comprehensible manner, and represent them using appropriate design and working drawings as well as physical models.			
Self and Social Competencies – Students are able to:			

- plan and critically reflect on their immediate work process.
- discuss different approaches objectively and constructively.

Content

- Designing with simple building elements in skeletal construction
- Analysis of exemplary buildings
- Construction and jointing of linear elements of simple complexity
- Relationship between spatial form, material, detail, construction, and design
- Fundamentals of building construction in skeletal systems
- Order, axes, and grids
- Building components: foundation, column, load-bearing structure, wall, staircase, floor slab, pitched roof
- Scale-accurate architectural drawings in orthographic projections and three-dimensional representations; model-making of simple complexity
- Introduction to building regulations and technical standards
- Introduction to the fundamentals of sustainable construction

Literature

- METTLER, Daniel, SCHEIDT, Paula, STUDER, Daniel, 2021. *Construction: Manual* [online]. Basel: Birkhäuser. PDF e-Book. ISBN 978-3-0356-2229-4. Available via: <https://doi.org/10.1515/9783035622294>.
- STEIGER, Ludwig, 2017. *Basics timber construction* [online]. Basel: Birkhäuser. PDF e-Book. ISBN 978-3-0356-1279-0. Available via: <https://doi.org/10.1515/9783035612790>.
- BAUER, Sascha and Daniel PAULI, 2024. *The joinery compendium: learning from traditional woodworking ; with English, German and Japanese terminology*. Berlin: Ruby Press. ISBN 978-3-944074-52-8, 3-944074-52-1
- SCHILLING, Alexander, Adam BLAUHUT and Robin BENSON, 2013. *Basics modelbuilding*. Basel, Switzerland: Birkhauser. ISBN 978-3-0356-1275-2
- MEISTERMANN, Alfred, 2017. *Basics Loadbearing Systems* [online]. Basel: Birkhäuser. PDF e-Book. ISBN 978-3-0356-1282-0. Available via: <https://doi.org/10.1515/9783035612820>.

Additional remarks

The provided lecture slides are to be supplemented by independent personal notes.

Sustainability and Building Materials

Module abbreviation	ARC_SutustainabilityBuildMate-rials	Reg.-Nr.	3
Curriculum	Study Programme	Module type	Semester
	Architecture (in English) (SPO SS 26)	Compulsory Subject	1
Module frequency	only summer term	Module duration	1 semester
Responsible for module	Blask, Oliver		
Lecturer(s)	Blask, Oliver; Uhde, Julia		
Language of instruction	English	Language of exams	English
Credit points / SWS	5 ECTS / 4 SWS		
Workload	Contact hours	47 h	
	Self-study	78 h	
	Total	125 h	
Subjects of the module	Sustainability and Building Materials		
Lecture types	Sustainability and Building Materials: SU/Ü - Seminar/Practical (ARK_NuB)		
Examinations			
schrP90 - written exam, 90 minutes			
Additional explanations regarding examinations			
None			
Prerequisites according examination regulation			
none			
Recommended prerequisites			
none			
Objectives			
After completing the module, students will be able to... • assess the sustainability of building materials using objective methods. • assess the durability of building materials depending on exposure. • differentiate between empirical and performance-based methods of service life assessment. • select suitable recycling methods for building materials. • consider recycling already in the planning stage.			
Content			
Upon completion of the module, students will be able to ... • identify the dimensions of sustainability in architectural design. • explain fundamental sustainability aspects related to energy, CO2 footprint, and resource consumption in the construction industry. • qualitatively classify buildings in terms of sustainability aspects. • evaluate the sustainability of building materials using objective methods. • assess the durability of building materials in relation to environmental impacts.			

		Architecture (in English) (SPO SS 26)

- distinguish between empirical and performance-based methods for evaluating the service life of building materials. - select appropriate recycling processes for building materials. - take recycling into account as early as the planning phase.
Literature
TAYLOR, G. D., . <i>Materials in Construction</i>. [s.l.]: Routledge. ISBN ISBN-13: 978-0-582-36889-7
Additional remarks
None

Representation 1

Module abbreviation	ARC_Representation1	Reg.-Nr.	4
Curriculum	Study Programme	Module type	Semester
	Architecture (in English) (SPO SS 26)	Compulsory Subject	1
Module frequency	not specified	Module duration	1 semester

Responsible for module	Mückenheim, Mark		
Lecturer(s)	Mückenheim, Mark		
Language of instruction	English	Language of exams	English
Credit points / SWS	5 ECTS / 4 SWS		
Workload	Contact hours	47 h	
	Self-study	78 h	
	Total	125 h	
Subjects of the module	Representation 1		
Lecture types	SU/Ü - seminar-based teaching with exercise		

Examinations

Exam Study Work, presentation 15 minutes, written composition (5-15 pages)

Additional explanations regarding examinations

The course assessment takes the form of a portfolio exam. The portfolio consists of 3–4 sequential course projects (presentation exercises) that are completed and documented over the course of the semester.

The portfolio includes the sketches, drawings, plans, models, and other analog and digital representations developed as part of the course projects and exercises (Prüfungsstudienarbeiten - Exam-Relevant Study Projects). The results of the work are collected, documented, and presented by the students in a presentation at the end of the semester. Freehand drawings are evaluated based on the maintenance of a sketch-book.

At the end of the semester, the results of the exercises (Prüfungsstudienarbeiten - Exam-Relevant Study Projects) are presented and explained as part of a final presentation (Portfolio Exam). The presentation focuses on the presentation methods used, the development of the work, and the design and communicative aspects of the chosen forms of presentation.

Grading is based on the portfolio as an overall performance.

- The components are weighted at 10%, 15%, 25%, and 50%.
- The exact dates will be announced at the beginning of the semester during the lecture and posted on Moodle.
- If any of the components are not completed, points will be deducted from the grade in proportion to the weighting. If the point deduction exceeds 30%, or if the exam is not taken, the entire course will be considered not completed.

Grading is based on the portfolio as an overall assessment. In particular, the following are evaluated: the confident application of basic representation and visualization techniques; the quality of the drawings, graphics, and models; the use of scale, proportion, and spatial representation; the clarity of the work process; and the technical and creative quality of the final presentation.

Prerequisites according examination regulation

None

Recommended prerequisites

No specific prior technical knowledge is required. Prerequisites for successful participation in the module include an openness to creative and expressive challenges across a wide variety of media (hand-drawn, digital, virtual, physical, etc.), a willingness to engage with presentation tasks in a technically sound manner, a commitment to craftsmanship, and consistent participation throughout the semester. Regular attendance at the accompanying courses and lectures is expected, as these provide essential theoretical foundations and subject-specific context for completing the presentation assignments. Adherence to work and submission deadlines is a mandatory component of the module.

Objectives

Upon successful completion of the module, students will be able to

- apply the basic rules and conventions of architectural representation.
- represent spatial objects and simple architectural relationships in two dimensions using three-panel projection.
- create, read, and relate elevations, floor plans, and sections to one another in accordance with standards.
- confidently apply scale, proportion, and geometry in drawings and models.
- transfer and interpret simple spatial relationships between two- and three-dimensional forms of representation (drawing vs. model).
- Use analog models as a means of investigating, representing, and communicating spatial relationships.
- Apply digital tools of computer-aided design (CAD) to create and edit planimetric architectural drawings.
- Develop drawings, models, and presentations with regard to their accuracy, legibility, and design quality, and present them professionally.

Content

- Introduction to Fundamental Methods of Architectural Representation
- Perception, Observation, and Analysis of Space, Form, and Proportion
- Fundamentals of Freehand Drawing and Architectural Sketching
- Drawing Objects, Spaces, and Spatial Situations
- Two-dimensional representation of space
- Fundamentals of scale, proportion, and geometric order
- Development of spatial imagination
- Introduction to orthogonal projections, elevations, floor plans, sections, and axonometric projections
- Analog and digital methods of architectural drawing
- Model-making as a means of spatial investigation and representation
- Material, surface, and texture in drawing and models
- Graphic organization and design of plans and presentations
- Architectural communication through images, drawings, plans, and models
- Comparative studies and exercises in representing spatial relationships
- Fundamentals of visual design, composition, and layout
- Architectural drawing as a tool for analysis, communication, and design
- Presentation and discussion of drawings, models, and visualizations

		Architecture (in English) (SPO SS 26)

Literature

- AFFLERBACH, Florian, 2017. *Basics Freehand Drawing* [online]. Basel: Birkhäuser. PDF e-Book. ISBN 978-3-0356-1271-4. Available via: <https://doi.org/10.1515/9783035612714>.
- DUNN, Nick, 2014. *Architectural modelmaking*. London: Laurence King Publishing. ISBN 1-78067-646-8, 1-78067-649-2
- ADLER, Gerald, Timothy BRITAIN-CATLIN and Gordana FONTANA-GIUSTI, 2012. *Scale: imagination, perception and practice in architecture*. Abingdon, Oxon [England] ; New York, N.Y.: Routledge. ISBN 978-0-203-72290-9

Additional remarks

Script (lecture slides) of the courses. Students are required to take lecture notes.
No bonus points

Structural Design 1

Module abbreviation	ARC_StructuralDesign1	Reg.-Nr.	5
Curriculum	Study Programme	Module type	Semester
	Architecture (in English) (SPO SS 26)	Compulsory Subject	2
Module frequency	only winter term	Module duration	1 semester
Responsible for module	Feucht, Thilo		
Lecturer(s)	Angerer, Ludwig; Feucht, Thilo		
Language of instruction	English	Language of exams	English
Credit points / SWS	5 ECTS / 4 SWS		
Workload	Contact hours	47 h	
	Self-study	78 h	
	Total	125 h	
Subjects of the module	Structural Design 1		
Lecture types	SU/Ü - seminar-based teaching with exercise		
Examinations			
PF - Portfolio Exam (with exams before and a written exam 90 min within the examination period)			
Additional explanations regarding examinations			
The portfolio assessment comprises three components: - During the semester, two written examinations (6th/7th and 10th/11th lecture weeks) will be held, each with a duration of 30 minutes. - During the examination period, a written examination lasting 90 minutes will take place. The overall mark is weighted according to the duration of the individual assessment components. If a student fails to sit one of the two written assessment components, zero marks will be awarded for that component, which will consequently lower the overall mark. The exact examination dates will be published on Moodle at the start of the semester. If the overall examination is not passed, the portfolio assessment must be retaken. No alternative exam dates will be offered. The resit exam in the following semester may be organised differently and will be specified in the module handbook.			
Prerequisites according examination regulation			
None			
Recommended prerequisites			
None			
Objectives			
After attending the module events, students will be able to: - recognise the significance of a structural system, its fundamental functions and the complex relationships between what supports and what is supported. - distinguish between loads and forces and their effects on the structural system. - assess appropriately the flow of forces and the resulting internal stresses in structural members. - to describe how material resistance counteracts the stresses caused by external actions and to design simple structural members. Personal and social skills – Students will be able to:			

- reflect on the results of their own calculations and discuss them in the lecture theatre.

Content

- Forces and moments
- Loads on structural systems
- Line of action
- Equilibrium of external and internal forces
- Material behaviour
- Structural members under tension, compression, bending and shear
- Deflections
- Stability
- Design
- Foundations
- Bracing

Literature

- ALBERT, Andrej, 2026. *Schneider - Bautabellen für Architekten: Entwurf - Planung - Ausführung*. 27. edition. Köln: Reguvis Fachmedien. ISBN 978-3-8462-1634-7, 3-8462-1634-8

Additional remarks

None

Building Physics

Module abbreviation	ARC_BuildingPhysics	Reg.-Nr.	6
Curriculum	Study Programme	Module type	Semester
	Architecture (in English) (SPO SS 26)	Compulsory Subject	2
Module frequency	only winter term	Module duration	1 semester
Responsible for module	Pichlmeier, Franziska		
Lecturer(s)	Pichlmeier, Franziska		
Language of instruction	English	Language of exams	English
Credit points / SWS	5 ECTS / 4 SWS		
Workload	Contact hours	47 h	
	Self-study	78 h	
	Total	125 h	
Subjects of the module	Building Physics		
Lecture types	SU/Ü - lecture with integrated exercises		
Examinations			
PF - Portfolio-Exam (all exams before the examination period)			
Additional explanations regarding examinations			
The portfolio assessment consists of two components: • Component 1 – Theory: Building Physics: 60-minute written examination, weighted at 50% (in the sixth week of lectures, ± 1 week) • Component 2 – Application: A project-based coursework assignment worth 60 points. Students are required to analyse the thermal and moisture performance of selected building elements, calculate thermal transmittance (U-values), assess thermal bridges and condensation risks, and evaluate the building physics performance of a building or construction detail. The assignment is due shortly before the start of the examination period. (Weighting: 50%) If a student fails to participate in a part of the assessment, zero marks will be awarded for that part, which will result in a lower overall mark. There is no pass mark for individual parts. The overall mark is calculated as the sum of the marks achieved in both parts. Participation in an part on an alternative date (one week after the scheduled date) is only possible upon presentation of a medical certificate (to be submitted to the SCS and the examiner). The exact examination and submission dates will be published on Moodle at the start of the semester. The repeat examination in the following semester will correspond in form and scope to the examination in the winter semester 2026/2027. Detailed information on the repeat examination will be published in the module handbook for the summer semester 2027 or on Moodle at the start of the summer semester 2027.			
Prerequisites according examination regulation			
None			
Recommended prerequisites			
None			

Objectives**Subject-specific competence – Students are able to:**

- explain the fundamental principles of heat transfer and energy flows relevant to the built environment;
- analyse the thermal and hygrothermal performance of building components, including the influence of material properties on heat and moisture transport;
- calculate the thermal resistance and thermal transmittance (U-values) of homogeneous and inhomogeneous building elements and assess thermal bridges and airtightness defects;
- evaluate moisture transport, condensation risks and mould prevention strategies in building components;
- explain the principles of thermal comfort, building energy performance, acoustics and fire safety and assess their influence on building quality and occupant well-being;
- apply building physics principles to the design and evaluation of energy-efficient, comfortable and durable buildings.

Content

- Fundamentals of heat, energy and heat transfer
- Winter and summer thermal protection and comfort
- Heat transfer through homogeneous and inhomogeneous building elements
- Thermal bridges, airtightness and their impact on energy demand and occupant comfort
- Moisture transport, condensation and mould prevention
- Energy performance requirements for buildings and fundamentals of energy assessment
- Fundamentals of acoustics and fire safety in building construction

Literature

- PINTERIĆ, Marko, 2021. *Building Physics: From physical principles to international standards* [online]. Cham: Springer International Publishing. PDF e-Book. ISBN 978-3-030-67372-7. Available via: <https://doi.org/10.1007/978-3-030-67372-7>.

Additional remarks

Bonus points: none

History and Theory of Architecture and the City 1

Module abbreviation	ARC_HistoryTheoryArchCity1		Reg.-Nr.	7
Curriculum	Study Programme		Module type	Semester
	Architecture (in English) (SPO SS 26)		Compulsory Subject	2
Module frequency	only winter term		Module duration	1 semester
Responsible for module	Hoelscher, Martin			
Lecturer(s)	Hoelscher, Martin			
Language of instruction	English	Language of exams	English	
Credit points / SWS	5 ECTS / 4 SWS			
Workload	Contact hours	47 h		
	Self-study	78 h		
	Total	125 h		
Subjects of the module	History and Theory of Architecture and the City 1			
Lecture types	SU Seminar-Style Instruction			
Examinations				
schrP90 - written exam, 90 minutes				
Additional explanations regarding examinations				
Written exam: 90 min.				
Prerequisites according examination regulation				
None				
Recommended prerequisites				
No prior technical knowledge is required. To successfully complete the module, students must have an interest in architectural, urban planning, historical, and cultural issues, as well as a willingness to engage with architecture and the city in an analytical and reflective manner. Students are expected to participate actively throughout the semester, attend classes regularly, be willing to prepare for and review course material independently, and meet all deadlines.				
Objectives				
Upon successful completion of the module, students will				
• become familiar with and understand architectural and urban planning developments within the context of social, cultural, religious, and technological conditions.				
• identify and historically contextualize key periods in European architectural and urban history from antiquity to the present.				
• recognize and distinguish the characteristic features of architectural periods and styles.				
• be able to identify and describe significant buildings, building typologies, and urban developments of the periods covered.				
• be able to confidently apply basic concepts and technical terms in the history of architecture and urbanism.				

- be able to describe and classify buildings and urban spaces in terms of their design and cultural characteristics.

Content

- Introduction to the History and Theory of Architecture and the City
- Selected Periods in the History of Architecture and Urban Development
- Buildings, Cities, and Their Authors
- Building Projects and Building Typologies Through Historical Change
- Discussion and Reflection on Historical Concepts of Architecture and Urban Development
- Interdependencies Between Buildings, Cities, and Open Spaces as an Expression of Sociocultural Developments
- History of Planning Disciplines and Professional Roles

Literature

Will be specified at the beginning

Additional remarks

None

Representation 2

Module abbreviation	ARC_Representation2	Reg.-Nr.	8
Curriculum	Study Programme	Module type	Semester
	Architecture (in English) (SPO SS 26)	Compulsory Subject	2
Module frequency	not specified	Module duration	1 semester
Responsible for module	Bergmann, Daniela		
Lecturer(s)	NN,		
Language of instruction	English	Language of exams	English
Credit points / SWS	5 ECTS / 4 SWS		
Workload	Contact hours	47 h	
	Self-study	78 h	
	Total	125 h	
Subjects of the module	Representation 2		
Lecture types	SU/Ü Seminar-Style Instruction / Exercise		
Examinations			
PF - Portfolio-Exam (all exams before the examination period)			
Additional explanations regarding examinations			
The course assessment takes the form of a portfolio exam. The portfolio consists of 3–4 sequential course projects (presentation exercises) that are completed and documented over the course of the semester. The portfolio includes the sketches, drawings, plans, models, and other analog and digital representations developed as part of the course projects (presentation exercises). The results of the work are collected, documented, and presented by the students in a presentation at the end of the semester. Freehand drawings are evaluated based on the maintenance of a sketchbook. At the end of the semester, the results of the presentation exercises are presented and explained as part of a final presentation. The presentation focuses on the presentation methods used, the development of the work, and the design and communicative aspects of the chosen forms of presentation. Grading is based on the portfolio as an overall performance. • The components are weighted at 10%, 15%, 25%, and 50%. • The exact dates will be announced at the beginning of the semester during the lecture and posted on Moodle. • If any of the components are not completed, points will be deducted from the grade in proportion to the weighting. If the point deduction exceeds 30%, or if the exam is not taken, the entire course will be considered not completed. Grading is based on the portfolio as a whole. In particular, the following are evaluated: the confident application of advanced representation and visualization techniques; the quality of the drawings, graphics, and models; the use of scale, proportion, and spatial representation; the clarity of the work process; and the technical and creative quality of the final presentation.			
Prerequisites according examination regulation			
None			

Recommended prerequisites

A prerequisite for successful participation in this module is the completion of Representation 1, which covers the essential foundational knowledge needed to successfully complete Representation 2. Knowledge of 2D CAD software and the basic standards for architectural drawings are required. Other prerequisites for successful participation in the module include an openness to creative and expressive challenges across a wide variety of media (hand-drawn, digital, virtual, physical, etc.), a willingness to engage with presentation tasks in a technically sound manner, a commitment to craftsmanship, and consistent participation throughout the semester. Regular attendance at the accompanying courses and lectures is expected, as these provide essential theoretical foundations and subject-specific context for completing the presentation assignments. Adherence to work and submission deadlines is a mandatory component of the module.

Objectives

Upon successful completion of the module, students will be able to

- create digital three-dimensional models of architectural objects and spaces using appropriate modeling strategies.
- convert two-dimensional drawings into three-dimensional digital models and digitally represent spatial relationships.
- apply digital 3D modeling tools to develop, edit, and visualize architectural geometries.
- derive elevations, floor plans, sections, axonometric projections, and other architectural representations from digital models.
- Confidently apply scale, proportions, geometry, and spatial organization in digital models and representations.
- Use basic methods of digital visualization to present architectural designs and spatial situations.
- Apply tools from the Adobe Creative Suite for the graphic preparation, design, and communication of architectural content.
- Use freehand sketches as a means of analysis, idea development, and spatial communication.
- Develop and use physical models to investigate, verify, and represent spatial relationships.
- Develop digital and analog representations with regard to their legibility, expressiveness, and design quality, and present them professionally.

Content

- Introduction to Digital Methods of Architectural Representation
- Fundamentals of Three-Dimensional Digital Modeling
- Modeling Architectural Geometries and Spatial Structures in Rhino 3D
- Converting Two-Dimensional Drawings into Three-Dimensional Digital Models
- Digital Organization and Structuring of Model Data
- Deriving Elevations, Floor Plans, Sections, and Axonometric Views from Digital Models
- Digital Representation of Space, Form, Materiality, and Geometry
- Fundamentals of Digital Visualization of Architectural Designs
- Introduction to Rendering and Visualization Techniques
- Digital Image Editing and Graphic Post-Processing
- Introduction to Adobe Creative Suite as a Tool for Architectural Communication
- Layout, Composition, and Graphic Design of Presentations and Design Documentation
- Diagrams, collages, and graphic communication strategies in architecture
- Freehand sketching as a tool for analysis, documentation, and idea development
- Physical model-making as a means of spatial investigation and representation
- Interactions between analog and digital representation media
- Architectural communication through digital models, visualizations, drawings, and models

		Architecture (in English) (SPO SS 26)

• Presentation and discussion of architectural representations and visualizations
Literature
Will be specified at the beginning
Additional remarks
None