Description of the degree program

Architecture (Master)
PO 3

Date: 29.01.2026

Table of contents

Design Projects

Title	Architectural Design		
Number	4198060	**Module version**	
Shorttext	ARC-STD2-06	**Language**	german
Frequency of offer		**Teaching unit**	Fakultät Architektur, Bauingenieurwesen und Umweltwissenschaften
Module duration	1	**Institution**	
Hours per Week / ECTS	4 / 14,0	**Module owner**	
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	364
Compulsory requirements			
Expected performance/ Type of examination			
Course achievement			
Contents			
Objective qualification			
Literature			
Literaturangaben nach den jeweiligen Themen und Schwerpunktsetzungen			

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german

	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	2,0	Project	german
	4,0	Project	german
	2,0	Project	german

Title	Architectural Design		
Number	4198070	**Module version**	
Shorttext	ARC-STD2-07	**Language**	german
Frequency of offer		**Teaching unit**	Fakultät Architektur, Bauingenieurwesen und Umweltwissenschaften
Module duration	1	**Institution**	
Hours per Week / ECTS	4 / 14,0	**Module owner**	
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	364
Compulsory requirements			
Expected performance/ Type of examination			
Course achievement			
Contents			
Objective qualification			
Literature			
Literaturangaben nach den jeweiligen Themen und Schwerpunktsetzungen			

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german

	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	2,0	Project	german
	4,0	Project	german
	2,0	Project	german

Title	Architectural Design		
Number	4198080	**Module version**	
Shorttext	ARC-STD2-08	**Language**	german
Frequency of offer		**Teaching unit**	Fakultät Architektur, Bauingenieurwesen und Umweltwissenschaften
Module duration	1	**Institution**	
Hours per Week / ECTS	4 / 14,0	**Module owner**	
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	364
Compulsory requirements			
Expected performance/ Type of examination			
Course achievement			
Contents			
Objective qualification			
Literature			
Literaturangaben nach den jeweiligen Themen und Schwerpunktsetzungen			

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german

	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	2,0	Project	german
	4,0	Project	german
	2,0	Project	german

Title	Experimental Design		
Number	4198090	**Module version**	
Shorttext	ARC-STD2-09	**Language**	german
Frequency of offer		**Teaching unit**	Fakultät Architektur, Bauingenieurwesen und Umweltwissenschaften
Module duration	1	**Institution**	
Hours per Week / ECTS	4 / 14,0	**Module owner**	
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	364
Compulsory requirements			
Expected performance/ Type of examination			
Course achievement			
Contents			
Objective qualification			
Literature			

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german

	4,0	Project	german
	4,0	Project	german
	4,0	Project	german

Title	Experimental Design		
Number	4198220	**Module version**	
Shorttext	ARC-STD2-22	**Language**	german
Frequency of offer		**Teaching unit**	Fakultät Architektur, Bauingenieurwesen und Umweltwissenschaften
Module duration	1	**Institution**	
Hours per Week / ECTS	4 / 14,0	**Module owner**	
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	364
Compulsory requirements			
Expected performance/ Type of examination			
Course achievement			
Contents			
Objective qualification			
Literature			

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german

	4,0	Project	german
	4,0	Project	german
	4,0	Project	german

Title	Research Thesis		
Number	4198100	**Module version**	
Shorttext	ARC-STD2-10	**Language**	german
Frequency of offer		**Teaching unit**	Fakultät Architektur, Bauingenieurwesen und Umweltwissenschaften
Module duration	1	**Institution**	
Hours per Week / ECTS	4 / 14,0	**Module owner**	
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	346
Compulsory requirements			
Expected performance/ Type of examination			
Course achievement			
Contents			
Objective qualification			
Literature			
Literaturangaben nach den jeweiligen Themen und Schwerpunktsetzungen.			

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german
	4,0	Project	german

Title	Short Term Architectural Design Project		
Number	4198110	**Module version**	
Shorttext	ARC-STD2-11	**Language**	german
Frequency of offer		**Teaching unit**	Fakultät Architektur, Bauingenieurwesen und Umweltwissenschaften
Module duration	1	**Institution**	
Hours per Week / ECTS	2 / 6,0	**Module owner**	
Workload (h)			
Class attendance (h)	28	**Self studying (h)**	152
Compulsory requirements			
Expected performance/ Type of examination			
Course achievement			
Contents			
Objective qualification			
Literature			
Literaturangaben nach Thema des Entwurfes.			

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german

	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german

Title	Short Term Architectural Design Project		
Number	4198120	**Module version**	
Shorttext	ARC-STD2-12	**Language**	german
Frequency of offer		**Teaching unit**	Fakultät Architektur, Bauingenieurwesen und Umweltwissenschaften
Module duration	1	**Institution**	
Hours per Week / ECTS	2 / 6,0	**Module owner**	
Workload (h)			
Class attendance (h)	28	**Self studying (h)**	152
Compulsory requirements			
Expected performance/ Type of examination			
Course achievement			
Contents			
Objective qualification			
Literature			
Literaturangaben nach Thema des Entwurfes			

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german

	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german
	2,0	Project	german

Title	Impromptu Design Projects		
Number	4199290	**Module version**	
Shorttext	ARC-STD-29	**Language**	german
Frequency of offer		**Teaching unit**	Fakultät Architektur, Bauingenieurwesen und Umweltwissenschaften
Module duration	2	**Institution**	
Hours per Week / ECTS	3 / 6,0	**Module owner**	
Workload (h)			
Class attendance (h)	14	**Self studying (h)**	166
Compulsory requirements			
Expected performance/ Type of examination			
Course achievement			
Contents			
Objective qualification			
Literature			
Literaturangaben nach den jeweiligen Themen und Schwerpunktsetzungen			

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	0,5	Exercise	german
	0,5	Exercise	german
	0,5	Exercise	german
	0,5	Exercise	german
	0,5	Exercise	german

	0,5	Exercise	german
	0,5	Exercise	german
	0,5	Exercise	german
	0,5	Exercise	german
	0,5	Exercise	german
	0,5	Exercise	german
	0,5	Exercise	german
	0,5	Exercise	german
	0,5	Exercise	german

Seminars and Specialisations

Title	Case Study in Architectural History		
Number	4118070	**Module version**	
Shorttext	ARC-ARCA-0	**Language**	german
Frequency of offer		**Teaching unit**	
Module duration	1	**Institution**	Institut für Baugeschichte Institut für Geschichte und Theorie der Architektur und Stadt
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Dr. Ulrike Fauerbach
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	124
Compulsory requirements			
Expected performance/ Type of examination	Examination: Oral presentation or written assignment or portfolio (each with presentation) dependent on type and topic of the course.		
Course achievement			

Contents

Advanced object-oriented work in the area of:
4. building survey and documentation
5. architectural analysis and reception
6. applied preservation of historical monuments

Objective qualification

The students will acquire a fundamental knowledge of architectural documentation and analysis while referring to examples of buildings and projects in the history of architecture from antiquity to the present. They will be able to independently apply procedures and methods of building documentation (such as building surveys and source research). They will become familiar with different approaches to architectural analysis and are able to understand and evaluate buildings and their design, development, and reception by placing them in their respective cultural and historical contexts. They can present, communicate, and discuss these contexts in writing, orally, and in drawings with the help of appropriate specialist vocabulary and subject-specific forms of presentation.

Literature

Bibliographical references are provided in the respective course offerings
Further information:
www.ibsg.tu-bs.de/baugeschichte
www.gtas-braunschweig.de

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Related courses			
Rules for the choice of courses			
Either a lecture course combined with and exercise (2 SWS + 2 SWS) or a seminar (4 SWS) with the corresponding subject matter must be taken. Information on the courses offered can be found in the current semester programme at www.tu-braunschweig.de/arch/studenten/semesterprogramm/. The module can be taken from the first semester.			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	2,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german

Title	Theory of Architecture and Urbanisation		
Number	4121020	**Module version**	
Shorttext	ARC-ARCA-0	**Language**	german
Frequency of offer		**Teaching unit**	
Module duration	1	**Institution**	Institut für Baugeschichte Institut für Geschichte und Theorie der Architektur und Stadt
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Dr. Ulrike Fauerbach
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	124
Compulsory requirements			
Expected performance/ Type of examination	Examination: Oral presentation or written assignment or portfolio (each with presentation) dependent on type and topic of the course.		
Course achievement			

Contents

1. trajectories in the history of architecture and the city and their mutual references to the history of culture, social history, and the history of ideas.
2. analysis and critical reflection of positions in urban and architectural theory
3. theory of the preservation of monuments

Objective qualification

The students will acquire in-depth knowledge of theories of architecture and the city, in particular their roles in cultural, social, economic, and political history. They be able to analyse and evaluate architectural and urban planning developments from this overarching perspective in a substantiated manner. They will be able to argue their conclusions in written and oral form using the corresponding subject-specific vocabulary. The students will be trained to think conceptually and in a structured way, to acquire relevant knowledge from disciplines outside the subject and to reflect on their own historical and position within the framework of theoretical positions in architecture. They will develop a sense of responsibility for the social dimensions of their own person as an architect and environmental designer.

Literature

Bibliographical references are provided in the respective course offerings
Further information:
www.ibsg.tu-bs.de/baugeschichte
www.gtas-braunschweig.de

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Related courses			
Rules for the choice of courses			
Either a lecture course combined with and exercise (2 SWS + 2 SWS) or a seminar (4 SWS) with the corresponding subject matter must be taken. Information on the courses offered can be found in the current semester programme at www.tu-braunschweig.de/arch/studenten/semesterprogramm/. The module can be taken from the first semester.			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Lecture/Exercise	german

Title	Spacial Concepts in Art and Media		
Number	4135030	**Module version**	
Shorttext	ARC-ARCB-0	**Language**	german
Frequency of offer		**Teaching unit**	
Module duration	1	**Institution**	Institut für Architekturbezogene Kunst Institut für Gestaltungmethodik und Darstellung
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Fahim Mohammadi
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	124
Compulsory requirements			
Expected performance/ Type of examination	Portfolio or home work or term paper (each one with presentation) depending on the type and scope of the course		
Course achievement			

Contents

At the interface between art and architecture, the term space represents a joint thinking and handling platform, which is used to question the meaning of the term space with respect to art and analysis. The design of the artistic and media-experimental space systems will be developed in reciprocity of theoretical activity and design-related practice.

Objective qualification

The students have immersed knowledge about the handling of analogue and digital media for the design, visualisation and materialisation of the space. They are capable to research, design and produce the space at the interface of art, architecture, media and urbanism. They are familiar with new methods of analysis, interpretation and facilitation as well as the design, visualisation and materialisation of the space. Through the development of alternatives and visions for future, artistic and media-experimental space systems, the students train the theoretical interest and therefore advance their capability for the conceptually permeation of their own work.
The students train their social competence and team capability in group works and they develop their rhetorical capabilities in continuous presentations.

Literature

Literaturempfehlungen beziehen sich jeweils auf die Lehrinhalte. Weitere Informationen und aktuelle Lehrbeispiele finden
Interessierte unter:
www.emd.tu-bs.de
www.tu-bs.de/ief

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Related courses

Rules for the choice of courses

The main subject with the associated courses must be documented, either a combined course consisting of lecture and exercise (2 SWS + 2 SWS) or a seminar (4 SWS). The current semester program listed under www.tu- braunschweig.de/arch/studenten/semesterprogramm/ provides information about the offered courses
The module can be taken as of the 1st semester.

Compulsory attendance

Name of the course	SWS	Eventtype	Language
	4,0	Seminar	german
		Seminar	german
		Seminar	german
		Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german

Title	Design Processes in Art and Media		
Number	4135040	**Module version**	
Shorttext	ARC-ARCB-0	**Language**	german
Frequency of offer		**Teaching unit**	
Module duration	1	**Institution**	Institut für Architekturbezogene Kunst Institut für Gestaltungmethodik und Darstellung
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Fahim Mohammadi
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	124
Compulsory requirements			
Expected performance/ Type of examination	Portfolio or home work or term paper (each one with presentation) depending on the type and subject of the course		
Course achievement			

Contents

The comprehensive research of materials and technologies of different medial processes is handled within the interdisciplinary, subject-related projects. For this purpose, conscious media changes and conceptional interlacings of technical and artistic design concepts play a central role. Intermedial processes between animation, computer codes, photography, information spaces, room and video installations, sculpture and drawing deliver a variety of options for the development of time based, performative and networked material systems

Objective qualification

The students have immersed knowledge about the handling of analogue and digital media for the design, visualisation and materialisation of architectural systems and artistic-spatial installations. They are capable of developing artistic and architectural systems in a dialogue with the analysis and design media used. They have competence in the artistic production, medial orchestration of space and form and the development of independent thinking and handling. The students are able to apply the design-relevant handling of the technology of the digital model construction and to make it productive in a dialogue with the technology of the analogue model construction.
The students train their social competence and team capability in group works and they develop their rhetorical capabilities in continuous presentations.

Literature

Literature recommendations refer to the lecture contents. Additional information and current lecture examples can be found under:
www.tu-braunschweig.de/ief
www.imd.tu-bs.de

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Related courses
Rules for the choice of courses
The main subject with the associated courses must be documented, either a combined course consisting of lecture and exercise (2 SWS + 2 SWS) or a seminar (4 SWS). The current semester program listed under www.tu- braunschweig.de/arch/studenten/semesterprogramm/ provides information about the offered courses The module can be taken as of the 1st semester.
Compulsory attendance

Name of the course	SWS	Eventtype	Language
	4,0	Seminar	german
		Seminar	german
		Seminar	german
		Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german

Title	Construction Systems and Efficiency		
Number	4136020	**Module version**	
Shorttext	ARC-ARCC-0	**Language**	german
Frequency of offer		**Teaching unit**	
Module duration	1	**Institution**	Institut für Bauklimatik und Energie der Architektur Institut für Baukonstruktion Institut für Konstruktives Entwerfen, Industrie- und Gesundheitsbau Institut für Tragwerksentwurf
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Helga Blocksdorf
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	124
Compulsory requirements			
Expected performance/ Type of examination	Examination: Oral presentation, written assignment, or portfolio (each with presentation)		
Course achievement			

Contents

- systematic, case-related study on one or more buildings (comparative)
- analysis of function, construction, and form in relation to the developed criteria by the given task
- development of methods for the illustrative representation of reversible design processes
- in-depth topic-related literature research
- documentation of the results in a suitable form

Objective qualification

The students are able to understand the constructive and energetic strategy and efficiency of a building with scientific methods in order to understand the relationship between construction and design and to show and evaluate their importance. They know the application forms of the construction principles, typologies and construction methods and can name them and assign them consequently.
They master terms and categories of architecture and the construction sector and are familiar with essential literature on the topic.

Literature

Literatur und Fachzeitschriften werden themenbezogen angegeben, bzw. Semesterapparate der TU-Bibliothek

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
Sustainability in Construction - Seminar	4,0	Seminar	english

Title	Construction Methods		
Number	4136040	**Module version**	
Shorttext	ARC-ARCC-0	**Language**	german
Frequency of offer		**Teaching unit**	Fakultät Architektur, Bauingenieurwesen und Umweltwissenschaften
Module duration	1	**Institution**	Institut für Bauklimatik und Energie der Architektur Institut für Baukonstruktion Institut für Konstruktives Entwerfen, Industrie- und Gesundheitsbau Institut für Tragwerksentwurf
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Helga Blocksdorf
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	124
Compulsory requirements			
Expected performance/ Type of examination	Examination: Oral presentation, written assignment, or portfolio (each with presentation)		
Course achievement			

Contents

- systematic, case-related study on one or more buildings (comparative)
- analysis of function, construction, and form in relation to the developed criteria by the given task
- development of methods for the illustrative representation of reversible design processes
- in-depth topic-related literature research
- documentation of the results in a suitable form

Objective qualification

The students are able to understand the constructive and energetic strategy and efficiency of a building with scientific methods in order to understand the relationship between construction and design and to show and evaluate their importance. They know the application forms of the construction principles, typologies and construction methods and can name them and assign them consequently.
They master terms and categories of architecture and the construction sector and are familiar with essential literature on the topic.

Literature

Literatur und Fachzeitschriften werden themenbezogen angegeben bzw. Semesterapparate der TU-Bibliothek

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
Sustainability in Construction - Seminar	4,0	Seminar	english

Title	Formations of City and Landscape		
Number	4128030	**Module version**	
Shorttext	ARC-ARCD-0	**Language**	german
Frequency of offer		**Teaching unit**	
Module duration	1	**Institution**	Institut für Landschafts-architektur Institut für Nachhaltigen Städtebau Institut für Städtebau und Entwurfsmethodik
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Uwe Brederlau
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	124
Compulsory requirements			
Expected performance/ Type of examina-tion			
Course achievement			
Contents			
Objective qualification			
Literature			
Literaturangaben beziehen sich jeweils auf die semesterweise aktualisierten Lehrinhalte.			

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german

	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german

Title	Methods and Tools of Urban and Landscape Design		
Number	4131030	**Module version**	
Shorttext	ARC-ARCD-0	**Language**	german
Frequency of offer		**Teaching unit**	
Module duration	1	**Institution**	Institut für Landschafts-architektur Institut für Nachhaltigen Städtebau Institut für Städtebau und Entwurfsmethodik
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Uwe Brederlau
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	124
Compulsory requirements			
Expected performance/ Type of examination	Portfolio or term paper or presentation (each with presentation) depending on the type and scope of the course		
Course achievement			

Contents

- Expanded and deepened scientific work in the field of urban design and landscape architecture through critical comparative studies of design processes and planning tools.
- Transmitting of different perspectives of urban design and landscape architecture
- Transmitting of advanced information on disciplines that are important for urban design
- Development of innovative design methods
- Communication and documentation of the acquired contents with the help of professional terminology and adequate presentation techniques

Objective qualification

Students have deepened and expanded skills in learning and applying systems, methods and planning tools in an urban planning and landscape architecture context. They have a critical awareness and assessment ability for the built environment and can situate individual projects in the urban planning context. They are able to present their knowledge in a clear and convincing manner using appropriate media. The aim is to consolidate an independent design methodology for the urban planning and landscape architecture context.

Literature

Literaturangaben beziehen sich jeweils auf die Lehrinhalte

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german

Title	Architectural Typology and Form		
Number	4138010	**Module version**	
Shorttext	ARC-ARCE-0	**Language**	german
Frequency of offer		**Teaching unit**	Fakultät Architektur, Bauingenieurwesen und Umweltwissenschaften
Module duration	1	**Institution**	Institut für Entwerfen und Baugestaltung Institut für Entwerfen und Gebäudelehre Institut für Entwerfen und Raumkomposition Institut für Experimentelles Entwerfen
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Dan Schürch
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	124
Compulsory requirements			
Expected performance/ Type of examination	Examination: Oral presentation, written assignment, or portfolio (each with presentation)		
Course achievement			

Contents

Specialized knowledge and in-depth study in building design with emphasis on the following:
- Studies of building concepts using the example of selected architects or specific trends and developments.
- Studies on the interrelationships between building task, function and design
- Studies on the relationships between building concept and its implementation in built form, from overall appearance to detailing and materiality

Objective qualification

history of development. They are able to understand an architectural project or a building as a synthesis of artistic
and design requirements, social and economic demands as well as technical and functional requirements. They know the relevance of the formation of individual architectural elements and details as well as the material for a consistent (overall) design.
In group work, students train their social competence and teamwork skills and develop their rhetorical skills in
ongoing presentations their rhetorical skills.

Literature

Literaturangaben beziehen sich jeweils auf die Lehrinhalte

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german

Title	Processes and Methods of Architectural Design		
Number	4138040	**Module version**	
Shorttext	ARC-ARCE-0	**Language**	german
Frequency of offer		**Teaching unit**	
Module duration	1	**Institution**	Institut für Entwerfen und Baugestaltung Institut für Entwerfen und Gebäudelehre Institut für Entwerfen und Raumkomposition Institut für Experimentelles Entwerfen
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Dan Schürch
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	124
Compulsory requirements			
Expected performance/ Type of examination	Examination: Oral presentation, written assignment, or portfolio (each with presentation)		
Course achievement			

Contents

Specialized knowledge and deepening in design theory with the following focal points:
- Studies on conceptual and design-theoretical paradigms and design strategies using the example of selected
architects or specific trends and developments.
- Studies on design aspects and boundary conditions (concept, context, composition, space formation, use, construction, atmosphere)
-Investigations into methods and techniques of design from certain points of view (e.g. the site as a design parameter, design and digital techniques, conceptualization with model studies)

Objective qualification

The students are informed about the current architectural discourse. They know conditions and tendencies of current architectural production. They are able to grasp processes and strategies of architectural design. They are familiar with creativity techniques as well as with the design potential of objective boundary conditions of architectural design. In group work, students train their social competence and ability to work in a team and develop their rhetorical skills in ongoing presentations.

Literature

Literaturangaben beziehen sich jeweils auf die Lehrinhalte.

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german

Title	Incorporation of Cultural and Historical Context		
Number	4199130	**Module version**	
Shorttext	ARC-ARCA-0	**Language**	german
Frequency of offer		**Teaching unit**	
Module duration	1	**Institution**	Institut für Baugeschichte Institut für Geschichte und Theorie der Architektur und Stadt
Hours per Week / ECTS	2 / 6,0	**Module owner**	Prof. Dr. Ulrike Fauerbach
Workload (h)			
Class attendance (h)	30	**Self studying (h)**	150
Compulsory requirements			
Expected performance/ Type of examination	Examination: Oral presentation, written assignment, or portfolio (each with presentation)		
Course achievement			

Contents

-Advanced fundamentals and in-depth knowledge in elective area A - Cultural and historical knowledge in relation to the topic of a design or a thesis.
-Integration of in-depth knowledge into the design or work

Objective qualification

The students will become familiar with particular domains of architecture and the possibility for deepening their knowledge in the cultural and historical aspects of the field. They will be able to familiarise themselves with a specific issue largely independently and carry out the necessary research in order to do so. They will master the required documentation and analysis techniques of the field. They will be able to summarise the results of their research and classify them in the context of the subject; in particular, they are able to integrate the acquired in-depth knowledge and skills into their design or work.

Literature

Bibliographical references according to topics and focal points, further information at:
www.ibsg.tu-bs.de/baugeschichte
www.gtas-braunschweig.de

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Related courses			
Rules for the choice of courses			
Cooperation with a course from the modules Design ME 1 - 3, ME X or Independent Work M FA. The module can be taken from the first semester onwards.			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**

Title	Incorporation of Cultural and Historical Context		
Number	4199400	**Module version**	
Shorttext	ARC-STD-40	**Language**	german
Frequency of offer		**Teaching unit**	
Module duration	1	**Institution**	Institut für Baugeschichte Institut für Geschichte und Theorie der Architektur und Stadt
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Dr. Ulrike Fauerbach
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	124
Compulsory requirements			
Expected performance/ Type of examination	Examination: Oral presentation or written assignment or portfolio (each with presentation)		
Course achievement			

Contents

- Advanced fundamentals and in-depth knowledge in elective area A - Cultural and historical knowledge in relation to the topic of a design or a thesis.
- Integration of in-depth knowledge into the design or work

Objective qualification

The students will become familiar with particular domains of architecture and the possibility for deepening their knowledge in the cultural and historical aspects of the field. They will be able to familiarise themselves with a specific issue largely independently and carry out the necessary research in order to do so. They will master the required documentation and analysis techniques of the field. They will be able to summarise the results of their research and classify them in the context of the subject; in particular, they are able to integrate the acquired in-depth knowledge and skills into their design or work.

Literature

Literaturangaben nach Themen und Schwerpunktsetzungen.

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Related courses			
Rules for the choice of courses			
Cooperation with a course from the modules Design ME 1 - 3, ME X or Independent Work M FA. The module can be taken from the 1st semester onwards.			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**

Title	Illustration and Design		
Number	4199220	**Module version**	
Shorttext	ARC-ARCB-0	**Language**	german
Frequency of offer		**Teaching unit**	
Module duration	1	**Institution**	Institut für Architekturbezogene Kunst Institut für Gestaltungmethodik und Darstellung
Hours per Week / ECTS	2 / 6,0	**Module owner**	Prof. Fahim Mohammadi
Workload (h)			
Class attendance (h)	30	**Self studying (h)**	150
Compulsory requirements			
Expected performance/ Type of examination			
Course achievement			
Contents			
Objective qualification			
Literature			
Literaturangaben nach Themen und Schwerpunktsetzungen, weitere Informationen unter: www.tu-bs.de/ief www.emd.tu-bs.de			

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
		Seminar	german
		Seminar	german
		Seminar	german

	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german

Title	Illustration and Design		
Number	4199320	**Module version**	
Shorttext	ARC-STD-32	**Language**	german
Frequency of offer		**Teaching unit**	Fakultät Architektur, Bauingenieurwesen und Umweltwissenschaften
Module duration	1	**Institution**	Institut für Architekturbezogene Kunst Institut für Gestaltungmethodik und Darstellung
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Fahim Mohammadi
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	124
Compulsory requirements			
Expected performance/ Type of examination	Portfolio or home work or term paper (each one with presentation)		
Course achievement			

Contents

- Expanded basics and immersions in the choice area B - Presenting and design in connection with the subject of a design and/or a work
- Exemplary application of graphic, print graphic, plastic and cross-media approaches
- Integration of the immersed knowledge when handling analogue and digital media in design and/or work

Objective qualification

Based on the theoretical and practical examination of alternative, integral form generation and materialisation processes, the students can comprehend the interdependence of design, presentation and production. They reflect different issues and they are in a position to immerse themselves to a large extend independently into the specific set of problems. The students know the practices and methods of the visual arts and the medial presentation and can - in the area of the two, three or four dimensional design - integrate the acquired immersed knowledge and skills into the design and/or the work.

Literature

Literaturangaben nach Themen und Schwerpunktsetzungen, weitere Informationen unter:
www.tu-bs.de/ief
www.emd.tu-bs.de

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Related courses			
Rules for the choice of courses			
Cooperation with a course offering based on the modules Draft ME 1 - 3, ME X or Freie Arbeit M FA (free work MFA). The module can be taken as of the 1st semester.			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
		Seminar	german
		Seminar	german
		Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german

Title	Design and Construction		
Number	4136050	**Module version**	
Shorttext	ARC-ARCC-0	**Language**	german
Frequency of offer		**Teaching unit**	
Module duration	1	**Institution**	Institut für Bauklimatik und Energie der Architektur Institut für Baukonstruktion Institut für Konstruktives Entwerfen, Industrie- und Gesundheitsbau Institut für Tragwerksentwurf
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Helga Blocksdorf
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	124
Compulsory requirements			
Expected performance/ Type of examination	Oral presentation, written assignment, or portfolio (each with presentation)		
Course achievement			

Contents

- development of requirements and alternative solutions for materialization of a design idea and their evaluation based on advanced knowledge of construction and technology
- Analysis and application of technologies
- Selection of suitable solutions from a holistic architectural point of view
- Planning evidence by the integration of the solution by implementing it into the design / work

Objective qualification

Students are able to develop a holistic building concept with the aim of methodically linking functional, structural, ecological and economic aspects in an integrated planning approach. They are familiar with the principles of construction, their implementation and understand the interaction of design, structural and technical design parameters for the building conception.

Literature

Bibliographical references according to topics and focal points, further information at:
https://www.tu-braunschweig.de/ibea
https://www.tu-braunschweig.de/ite/
https://www.tu-braunschweig.de/ike
https://www.tu-braunschweig.de/baukonstruktion-1

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Related courses			
Rules for the choice of courses			
Cooperation with a course from the modules Design ME 1 - 3, ME X or Independent Work M FA. The module can be taken from the first semester onwards.			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german

Title	Design and Construction		
Number	4199340	**Module version**	
Shorttext	ARC-STD-34	**Language**	german
Frequency of offer		**Teaching unit**	
Module duration	1	**Institution**	Institut für Bauklimatik und Energie der Architektur Institut für Baukonstruktion Institut für Konstruktives Entwerfen, Industrie- und Gesundheitsbau Institut für Tragwerksentwurf
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Helga Blocksdorf
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	124
Compulsory requirements			
Expected performance/ Type of examination	Examination: Oral presentation, written assignment, or portfolio (each with presentation)		
Course achievement			

Contents

- development of requirements and alternative solutions for materialization of a design idea and their evaluation based on advanced knowledge of construction and technology
- Analysis and application of technologies
- Selection of suitable solutions from a holistic architectural point of view
- Planning evidence by the integration of the solution by implementing it into the design / work

Objective qualification

Students are able to develop a holistic building concept with the aim of methodically linking functional, structural, ecological and economic aspects in an integrated planning approach. They are familiar with the principles of construction, their implementation and understand the interaction of design, structural and technical design parameters for the building conception.

Literature

Literaturangaben nach Themen und Schwerpunktsetzungen, weitere Informationen unter:
https://www.tu-braunschweig.de/ibea
https://www.tu-braunschweig.de/ite/
https://www.tu-braunschweig.de/ike
https://www.tu-braunschweig.de/baukonstruktion-1
bzw. Semesterapparate der TU-Bibliothek

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Related courses			
Rules for the choice of courses			
Cooperation with a course from the modules Design ME 1 - 3, ME X or Independent Work M FA. The module can be taken from the first semester onwards.			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german

Title	Design and Construction: Urban Planing		
Number	4137020	**Module version**	
Shorttext	ARC-ARCD-0	**Language**	german
Frequency of offer		**Teaching unit**	Fakultät Architektur, Bauingenieurwesen und Umweltwissenschaften
Module duration	1	**Institution**	Institut für Landschafts-architektur Institut für Nachhaltigen Städtebau Institut für Städtebau und Entwurfsmethodik
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Uwe Brederlau
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	124
Compulsory requirements			
Expected performance/ Type of examina-tion			
Course achievement			
Contents			
Objective qualification			
Literature			
Literaturangaben nach Themen und Schwerpunktsetzungen, weitere Informationen unter: www.tu-braunschweig-ise.de			

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	4,0	Seminar	german
	4,0	Seminar	german

	4,0	Seminar	german

Title	Design and Construction: Urban Planing		
Number	4199380	**Module version**	
Shorttext	ARC-STD-38	**Language**	german
Frequency of offer		**Teaching unit**	
Module duration	1	**Institution**	Institut für Landschafts-architektur Institut für Nachhaltigen Städtebau Institut für Städtebau und Entwurfsmethodik
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Uwe Brederlau
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	124
Compulsory requirements			
Expected performance/ Type of examination			
Course achievement			
Contents			
Objective qualification			
Literature			
Literaturangaben nach Themen und Schwerpunktsetzungen, weitere Informationen unter: www.tu-braunschweig-ise.de			

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german

Title	Architectural Design		
Number	4198130	**Module version**	
Shorttext	ARC-STD2-1	**Language**	german
Frequency of offer		**Teaching unit**	
Module duration	1	**Institution**	Institut für Entwerfen und Baugestaltung Institut für Entwerfen und Gebäudelehre Institut für Entwerfen und Raumkomposition Institut für Experimentelles Entwerfen
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Dan Schürch
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	124
Compulsory requirements			
Expected performance/ Type of examination	Examination: Oral presentation, written assignment, or portfolio (each with presentation)		
Course achievement			

Contents

Advanced fundamentals and immersion in Elective E - Architectural Design related to the subject of a design or
thesis.
- Planning evidence through their integration into the design or work.

Objective qualification

The students are familiar with special fields of knowledge and possibilities of consolidation in building planning and
design theory. They are able to familiarize themselves with a specialist problem largely independently and to carry
out the necessary research. They are proficient in the necessary documentation and analysis techniques. They are
able to summarize the results and place them in the context of the subject; in particular, they can integrate the acquired in-depth knowledge and skills into the design.

Literature

Literaturangaben nach Themen und Schwerpunktsetzungen

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Related courses			
Rules for the choice of courses			
Cooperation with a course from the modules Design ME 1 - 3, ME X or Independent Work M FA. The module can be taken from the first semester onwards.			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german

Title	Architectural Design		
Number	4198140	**Module version**	
Shorttext	ARC-STD2-1	**Language**	german
Frequency of offer		**Teaching unit**	Fakultät Architektur, Bauingenieurwesen und Umweltwissenschaften
Module duration	1	**Institution**	Institut für Entwerfen und Baugestaltung Institut für Entwerfen und Gebäudelehre Institut für Entwerfen und Raumkomposition Institut für Experimentelles Entwerfen
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Dan Schürch
Workload (h)			
Class attendance (h)	56	**Self studying (h)**	124
Compulsory requirements			
Expected performance/ Type of examination	Examination: Oral presentation, written assignment, or portfolio (each with presentation)		
Course achievement			

Contents

- Advanced fundamentals and immersion in Elective E - Architectural Design related to the subject of a design or
thesis.
- Planning evidence through their integration into the design or work.

Objective qualification

The students are familiar with special fields of knowledge and possibilities of consolidation in building planning and
design theory. They are able to familiarize themselves with a specialist problem largely independently and to carry
out the necessary research. They are proficient in the necessary documentation and analysis techniques. They are
able to summarize the results and place them in the context of the subject; in particular, they can integrate the acquired in-depth knowledge and skills into the design or work.

Literature

Literaturangaben nach Themen und Schwerpunktsetzungen

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Related courses			
Rules for the choice of courses			
Cooperation with a course from the modules Design ME 1 - 3, ME X or Independent Work M FA. The module can be taken from the first semester onwards.			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german
	4,0	Seminar	german

Title	Systemic Principles of Construction Project Delivery		
Number	4321020	**Module version**	
Shorttext		**Language**	german
Frequency of offer	only in the winter term	**Teaching unit**	
Module duration	1	**Institution**	Institut für Bauwirtschaft und Baubetrieb
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Dr. Patrick Schwerdtner
Workload (h)	180		
Class attendance (h)	56	**Self studying (h)**	124
Compulsory requirements			
Expected performance/ Type of examination	Written Exam (120 min) or oral exam (20 min)		
Course achievement			

Contents

Developments and Mechanisms in the Construction:
Industry First, the characteristics of the construction market and construction production are explained and justified on the basis of the specific structures of the construction market. Responsibilities and interfaces are discussed in more detail on the basis of different roles, focusing on the respective contribution of different actors to the planning and implementation of construction production. In this context, the role of the public sector in the implementation of construction projects as a commissioning and licensing authority is also examined in more detail. The specific current and future challenges of the construction industry will be addressed in particular through selected aspects of the three dimensions of sustainability and the philosophy of lean management. Based on this, the basic requirements for the planning and execution process will be derived from contractual and regulatory constraints as a starting point for further courses and modules.

Project Delivery Systems:
At the start of a project, in the initiation phase, essential constraints and requirements are defined. Building on this, the German construction market offers various guiding principles for project management. These are presented with their specific characteristics - supplemented by insights into international models - and examined from different perspectives. From the unit-price contract with sole proprietors to the general contractor and partnering model to integrated project management, responsibilities, rights and obligations are defined and the appropriate projects or project types are assessed. The focus is on assessing opportunities and risks through early integration of execution expertise into the planning process and the importance of collaboration between project stakeholders. Particular attention is paid to the remuneration model, risk allocation and dispute resolution procedures.

Objective qualification

Students will have an in-depth knowledge of the structures of the construction industry and the organisation of planning and execution processes. They will be familiar with the basic requirements for the implementation of construction projects based on the demands of particular interests and social or regulatory expectations for the sustainability of construction production. Particular attention will be paid to explaining the interaction of the various participants against the background of their respective responsibilities for the preparation and implementation of the construction production process, so that students are enabled to think in their respective roles and to recognise the emerging interfaces. In this context, students will be able to identify suitable models of project management in construction from different perspectives and evaluate their impact on responsibilities and opportunities for efficient and goal-oriented implementation of the planning

and execution phases. Due to the range of models presented, students will be familiar with both conventional models and alternative models of project management based on increased levels of collaboration.
Literature

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	2,0	Lecture	german
	2,0	Lecture	german

Title	Construction Methods and Strategies		
Number	4321000	**Module version**	
Shorttext		**Language**	german
Frequency of offer	only in the winter term	**Teaching unit**	
Module duration	1	**Institution**	Institut für Bauwirtschaft und Baubetrieb
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Dr. Patrick Schwerdtner
Workload (h)	180		
Class attendance (h)	56	**Self studying (h)**	124
Compulsory requirements			
Expected performance/ Type of examination	Written exam (120 min) or oral exam (20 min)		
Course achievement			

Contents

Methodical Approach for Construction Method Selection:
After introductory remarks on the importance of construction process decisions and relevant production factors, as well as ideas on the basics of risk management, various construction process engineering concepts of in-situ production are presented. In addition to equipment-intensive processes (including special civil engineering and demolition measures, including possibilities for reuse), labour-intensive processes in the shell and extension phases of construction and civil engineering are also covered. Building on this, options for pre-production (on-site/off-site) and automation will be presented, with particular emphasis on additive manufacturing (3D printing). Process comparisons will be carried out in different scenarios and their impact on production factors, resilience of the processes to framework conditions and other criteria (including occupational safety) will be discussed.

Construction Safety and Health:
Students will learn how statutory accident insurance works and basic aspects of health and safety at work. After an introduction to the organisation of health and safety at work, different regulations for different construction activities (excavation, earthworks, building construction) are presented. The handling of hazardous substances and the design of workplaces and traffic routes are also discussed. An introduction to risk assessment and the use of personal protective equipment is provided for practical application. On successful completion of the course, you will have the opportunity to take part in a multi-day course to become a health and safety coordinator (not part of a university course; limited number of participants).

Objective qualification

Students will gain in-depth knowledge of specific issues in construction process engineering. They know the underlying processes and principles as well as the resources required for their implementation. Of particular importance are methodological comparisons of construction method variants, taking into account relevant health and safety regulations and relevant technical risks. Students will be able to make engineering considerations and decisions in the planning of construction production, and then implement and control the processes operationally. Students will also be able to make links with other sustainability objectives (including the environmental impact of processes and the requirements of the circular economy) in order to make decisions on the basis of holistic considerations and to optimise processes in terms of the best possible resource efficiency (including the reuse/recycling of building materials). This also includes the possibility of shifting construction processes to stationary (pre)production. Through intensive instruction in the fundamen-

tals of occupational safety, students will acquire a sound knowledge of accident prevention and will be able to deal responsibly with related issues of liability and the organisation of construction processes.
Literature

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	2,0	Lecture	german
	2,0	Lecture	german

Title	Integrated Production Planning in Construction		
Number	4321070	**Module version**	
Shorttext		**Language**	german
Frequency of offer	only in the summer term	**Teaching unit**	
Module duration	1	**Institution**	Institut für Bauwirtschaft und Baubetrieb
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Dr. Patrick Schwerdtner
Workload (h)	180		
Class attendance (h)	56	**Self studying (h)**	124
Compulsory requirements			
Expected performance/ Type of examination	Written exam (120 min) or oral exam (20 min)		
Course achievement			

Contents

Lean Construction Management:
After learning the basics of construction production planning, with a focus on scheduling and resource planning, students are introduced to the methods of lean (construction) management. The difficulties and trade-offs involved in planning and optimising construction production are illustrated, always taking into account the (sub)project objectives. Of particular importance are the project-specific influencing factors, which significantly determine the planned course of construction production and must be taken into account during planning. In this context, the special importance of dealing with interfaces is also made clear. Exercises and team-oriented workshops will be used to explain cycle planning and the last planner method using practical construction scenarios. The face-to-face meetings will take place on the Digital Construction Site to create a real connection and to discuss the possibilities and limitations of digital solutions.

Construction Logistics:
Based on the model of a 'mobile factory', construction logistics tasks in the context of supply, production and waste disposal in the different phases and stages of a construction project are first explained - including their significance from a sustainability perspective (including increasing resource efficiency), Based on this, various construction logistics models are presented (including the department store concept) Digital solutions based on the BIM methodology are also presented The application of various principles of lean construction management leads to an examination of relevant parameters for the planning and control of construction logistics This also includes the determination and visualisation of resource requirements based on an overlay of the quantity take-off and a schedule On this basis, the necessary construction site equipment is analysed in detail, including the dimensioning of the key elements The in-depth exercises are based on real scenarios from construction practice.

Objective qualification

Based on the philosophy and principles of Lean Construction, students will be able to carry out construction production planning taking into account construction logistics requirements. Students will have mastered the basics of scheduling and cycle planning and will be able to determine the resources required. To this end, students will be able to identify different requirements of construction processes and create a project breakdown structure as a basis for scheduling. In addition to the technological interdependencies to be considered, students will gain in-depth knowledge of the accompanying consideration of logistical constraints. By learning the conceptual principles of supply, production and disposal logistics, students will be able to plan and optimise construction production holistically and identify potential bottlenecks in the relevant production factors at an early stage. Furthermore, students will be able to assess the specific importance of sup-

ply chains in the supply of building materials and products to construction production and in reuse and recycling in the context of disposal. To this end, students will be familiar with relevant regulatory requirements and current solutions in the DIY market.
Literature

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	2,0	Lecture/Exercise	german
	2,0	Lecture/Exercise	german

Title	Economic Assessment and Procurement of Construction Services		
Number	4321090	**Module version**	
Shorttext		**Language**	german
Frequency of offer	only in the summer term	**Teaching unit**	
Module duration	1	**Institution**	Institut für Bauwirtschaft und Baubetrieb
Hours per Week / ECTS	6 / 6,0	**Module owner**	Prof. Dr. Patrick Schwerdtner
Workload (h)	180		
Class attendance (h)	84	**Self studying (h)**	96
Compulsory requirements			
Expected performance/ Type of examination	Written exam (120 min) or oral exam (20 min) or Written exam (60 min) or oral exam (15 min) and Course Achievement (successfull participation simulation game)		
Course achievement			

Contents

Public Tender and Contract Award:
Starting with the service description as the link between architecture/planning/construction on the one hand and construction on the other, the importance of clear and complete tender documents is explained. After a brief overview of the procurement of design services, different procurement procedures (national and European) and the rules of legal protection for public procurement are explained from the perspective of the client and contractor for construction services, and a possible transferability to privately financed projects is discussed. Sustainability requirements for design and construction processes are also addressed. Considerations are also given on how to draft a contract that fully describes the performance objective and all the rights and obligations of the contracting parties.

BIM-based Acquisition of Construction Projects (Role-Playing Game): The interactive and hands-on course presents and practises the essential steps of a tendering process. Students are divided into several teams and compete as (virtual) construction companies for a construction contract. The preparation of a tender based on a given specification is supported by the Building Information Modelling (BIM) methodology, after the basics of the methodology and the necessary software have been presented in self-developed tutorials. The construction companies and their indicative bids are presented by the respective teams to the potential clients (IBBs) in face-to-face meetings. In a second face-to-face meeting, additional information has to be integrated and the binding offers have to be negotiated in terms of financial and legal conditions before the contract is awarded to the best construction company.

Objective qualification

Students will acquire in-depth knowledge of the design of tender processes and specifications by the client, and of cost estimation and pricing by the contractor. Students will be familiar with the objectives and methods of costing as a planning task, as well as cost and performance accounting under the responsibility of executing companies. Different forms of planner and contractor deployment and remuneration models are considered. This will enable students to differentiate between the planner's or project manager's perspective (cost planning) and the contractor's perspective (cost accounting) and to understand the specific characteristics of each project phase. Students will also be able to take into account the constraints and specifications for the implementation of public sector projects and the specific implications for the tendering and awarding process and the drafting of contracts. In this context, students will also learn about the opportunities and consequences of integrating specific environmental and social requirements, including the import-

ance of supply chains. Alternatively, students can either take the perspective of a construction company in a planning and role-playing exercise, and then use BIM methodology to actively accompany a procurement process in construction projects with regard to calculating the bid price and negotiating the legal framework.
Literature

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	2,0	Lecture/Exercise	german
	2,0	Lecture/Exercise	german
	2,0	Lecture	german

Title	Organisation and Management of Construction and Business Processes		
Number	4321080	**Module version**	
Shorttext		**Language**	german
Frequency of offer	only in the winter term	**Teaching unit**	
Module duration	1	**Institution**	Institut für Bauwirtschaft und Baubetrieb
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Dr. Patrick Schwerdtner
Workload (h)	180		
Class attendance (h)	84	**Self studying (h)**	96
Compulsory requirements			
Expected performance/ Type of examination	Written exam (60 min) or Exam (30 min)		
Course achievement			

Contents

Construction Business Management:
The course presents and practises the three levels of business management and explores them in depth in a variety of scenarios with current references. While normative management explains the development of a vision and mission as well as the development of a corporate culture and corresponding goals, strategic management deals with fundamental questions and methods of strategy development as well as strategic tools. Operational management focuses on organisation and process management. Finally, problem-solving methods are presented.

Construction Site Management:
The course focuses on the typical responsibilities and tasks of construction management from the perspective of a contractor. The topics covered are based on the phases of construction management activities. Firstly, there are the preparatory considerations with clarification of the performance target and the agreed remuneration, as well as the project team and other parties involved. This is followed by the start-up phase, which involves scheduling and the procurement of goods and services. During implementation, processes need to be monitored and controlled for quality, time and cost. In this context, lean construction management methods are also presented. In the event of changes, the handling of additional offers and agreements is shown - accompanied by explanations on communication and documentation.

Private Construction and Architectural Law:
Contractual agreements form the basis for the provision of services in the course of the implementation of construction projects. After an explanation of the main features of public construction law and private construction contracts, special features of general terms and conditions are presented. This is followed by a discussion of the contractor's right to remuneration, distinguishing between contracts governed by the German Civil Code (BGB) and contracts governed by the German Construction Contract Procedures (VOB/B). This distinction also applies to the treatment of warranty rights, with acceptance being of particular importance and therefore treated separately. As further aspects of contract design and implementation, security and penalty clauses are also dealt with separately.

Objective qualification

Upon completion of the module, students will be able to take on company or site-specific management tasks in technical, organisational and economic terms for simple and medium-sized projects. On the one hand, students will learn to differentiate between the different perspectives and responsibilities of the client and contractor in the management of construction projects. On the other hand, students are familiarised with

the different levels of construction management and learn how to use strategic tools and problem-solving methods. The structure of the courses takes into account the content previously developed in other modules, so that students have a particular systemic understanding. Alternatively, students will acquire legal skills for drafting and implementing contracts based on the provisions of the German Civil Code (BGB) and the German Construction Contract Procedures (VOB) for assessing the resulting rights and obligations or claims.
Literature

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
	2,0	Lecture	german
	2,0	Lecture	german
	2,0	Lecture	german

Title	Digital Models and Methods in Construction and Real Estate Industry		
Number	4398570	**Module version**	
Shorttext		**Language**	german
Frequency of offer	only in the summer term	**Teaching unit**	
Module duration	1	**Institution**	Institut für Bauwirtschaft und Baubetrieb Institut für Geodäsie und Photogrammetrie
Hours per Week / ECTS	4 / 6,0	**Module owner**	Prof. Dr. Patrick Schwerdtner
Workload (h)	180 h		
Class attendance (h)	56	**Self studying (h)**	124
Compulsory requirements			
Expected performance/ Type of examination	Writte exam (60 Min.) or oral exam (approx. 15 Min.)		
Course achievement	Presentation		

Contents

The module consists of three parts:

[Foundations and Applications of digital models in the construction process]
First of all, basic knowledge concerning the methodology BIM will be taught (Schwerdtner): Basic knowledge of the methodology should be presented with specific reference to possible applications in the design and construction process. Based on this, recording methods for existing buildings and during the construction process will be explained (Gerke): Topics covered include the principles of building survey with an overview of modern detection methods (laser scanning, photogrammetry) and the challenges associated with the verification of tolerances. Finally, geodetic (pre-) services are linked with construction applications (Schwerdtner): In addition to the assessment and monitoring of performance, the focus will also be on issues of invoicing. There will be accompanying exercises in which a building is captured with modern methods and modeled for an application case.

[Development and integration of digital methods]
First, current developments in research with regard to the digitalisation of the design and construction process are presented. In this context, knowledge of the basics of scientific research is a requirement for a successful degree. Afterwards individual presentations will be elaborated with reference to one of the presentations that will take place in the companying seminar for digital design and construction. Participants search for suitable literature, read it critically and summarize it scientifically in the form of a presentation.

[Seminar for digital design and construction]
Representatives of companies and offices will explain the possibilities and limits of digital design and construction in different lectures.

Objective qualification

[Fundamentals and Applications of digital models in the construction process]
The participants get to know basic, methodological and technical knowledge of the methodology Building Information Modeling (BIM) in accordance with the guideline VDI/buildingSMART-MT 2552 Sheet 8.1 “BIM – Foundation Basics”. The (geometric) recording of buildings will play a major role. These competences conduce to in-depth understanding of the interfaces in model construction as well as geodetic and construction

applications. After successful completion, participants are able to evaluate and apply relevant applications of the BIM methodology.

[Development and integration of digital methods]
The aim of this course is to get to know and work on topics related to digitalisation in the building and real estate industry. After successful completion, participants of this course will have the following competencies:

- Knowledge of current developments in research on the digitalisation of the design and construction process
- Structure and procedure of a literature search and correct citation
- Critical reading of scientific articles
- Summarising of scientific articles

[Seminar for digital design and construction]
Based on presentations given by representatives with practical experience students learn about selected fields of application for digital methods in design and construction.

Literature
Will be announced during the course.

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Related courses
Rules for the choice of courses
Compulsory attendance

Name of the course	**SWS**	**Eventtype**	**Language**
	2,0	Lecture/Exercise	german
	1,0	Lecture	german
	1,0	Seminar	german

General Qualifications

Title	Professionalisation		
Number	4199160	**Module version**	
Shorttext	ARC-STD-16	**Language**	german
Frequency of offer		**Teaching unit**	Fakultät Architektur, Bauingenieurwesen und Umweltwissenschaften
Module duration	2	**Institution**	
Hours per Week / ECTS	6 / 6,0	**Module owner**	
Workload (h)			
Class attendance (h)	84	**Self studying (h)**	96
Compulsory requirements			
Expected performance/ Type of examination			
Course achievement			
Contents			
Objective qualification			
Literature			
abhängig von den einzelnen Lehrveranstaltungen			

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Related courses			
Rules for the choice of courses			
Compulsory attendance			
Name of the course	**SWS**	**Eventtype**	**Language**
architectural positions	2,0	Lecture series	german
	2,0	Lecture/Exercise	german
	2,0	Lecture/Exercise	german

	4,0	Workshop	german
	2,0	Lecture	german
	4,0	Workshop	german
	4,0	Workshop	german
	2,0	Lecture/Exercise	german
		Project	german
		Project	german
	2,0	Lecture/Exercise	german
	2,0	Lecture/Exercise	german
		Project	german
		Project	german
		Project	german
		Project	german
		Project	german
		Project	german
		Lecture/Exercise	german
		Exercise	german
		Exercise	german
		Exercise	german
		Exercise	german
		Exercise	german
		Exercise	german
	1,0	Exercise	german
		Exercise	german
Technology and society	2,0	Exercise	german
		Exercise	german
	1,0	Workshop	german
		Excursion	german
		Excursion	german
		Excursion	german

		Excursion	german
		Excursion	german
		Excursion	german
		Excursion	german
		Excursion	german

Master's Thesis

Title	Master-Thesis		
Number	4199060	**Module version**	
Shorttext	ARC-STD-06	**Language**	german
Frequency of offer		**Teaching unit**	Fakultät Architektur, Bauingenieurwesen und Umweltwissenschaften
Module duration	1	**Institution**	
Hours per Week / ECTS	2 / 30,0	**Module owner**	
Workload (h)			
Class attendance (h)	30	**Self studying (h)**	870
Compulsory requirements			
Expected performance/ Type of examination			
Course achievement			
Contents			
Objective qualification			
Literature			
Literaturangaben nach den jeweiligen Themen und Schwerpunktsetzungen			

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Related courses
Rules for the choice of courses
Compulsory attendance

Name of the course	**SWS**	**Eventtype**	**Language**
	2,0	Master's thesis	german
	2,0	Master's thesis	german
	2,0	Master's thesis	german

	2,0	Master's thesis	german
	2,0	Master's thesis	german
	2,0	Master's thesis	german
	2,0	Master's thesis	german
	2,0	Master's thesis	german
	2,0	Master's thesis	german
	2,0	Master's thesis	german
	2,0	Master's thesis	german