Appendix 3 Module Catalogue B.A. in Architecture (BAR)

Please note: The German version of this document is the legally binding version. The English translation provided here is for information purposes only.

Overview of the modules

*Translations of these module descriptions are currently not available.

Occupational Safety								**Abbr.**
No.	**Workload**	**Credit Points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	150 h	**5**	5th sem.	Annual	Winter	1 sem.	Compulsory elective	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Lecture	4 SCH/60 h	90 h	Lecture	120	German

2 Learning outcomes / competences

On successful completion of the module, students have the following knowledge and skills: They are able to:

- recognise and solve safety-related problems on construction sites by applying the legal regulations.
- apply OSH expertise within the framework of special requirement profiles (such as SIGEKO).
- demonstrate partial knowledge of the qualification "Occupational Safety Specialist".

3 Contents

- Social security system and legal bases in occupational health and safety
- Responsibility and liability of the project participants
- Control system Occupational health and safety management system (AMS) Construction
- Handling of work equipment
- Safety and personal protective equipment (PPE) when carrying out work
- Occupational health and safety in the EU framework and RAB regulations (rules on occupational health and safety on construction sites)

4 Participation requirements

Formally, none; in terms of content, basic knowledge of the use of construction equipment and the implementation of construction procedures is assumed.

5 Form of assessment

Written exam

6 Condition for the award of credit points

Module examination pass

7 Application of the module (in the following study programmes)**:**

Project Management Construction (B.Eng.); Civil Engineering (B.Eng.); Infrastructure Engineering (B. Eng.); Architecture (B.A.)

8 Module coordinator

Prof. Dr.-Ing. Oliver Nister

9 Other information

The course is run by the employers' liability insurance association. The training will not take place at Bielefeld University of Applied Sciences. Students are required to be physically present at the training site. Lecturers Oliver Hanslik and Peter Wentland. This module is an additional offer as an elective for the architects, as it can only be taught in the winter semester for capacity reasons.

AVA – Tendering, Awarding, Billing								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	150 h	**5**	5th sem.	Annual	Winter	1 sem.	Compulsory	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Lecture	2 SCH/30 h	45 h	Lecture	60	German
	Exercise	2 SCH / 3 0h	45 h	Supervised group work and project work	20	German

2 Learning outcomes / competences

On successful completion of the module, students have the following knowledge and skills:
They are able to

- independently draw up a performance specification with bill of quantities for construction work.
- explain the procurement process of a public and a private contracting authority for construction services.
- independently prepare a standardised measurement for construction work and check a corresponding invoice.

3 Contents

- Scope of services for work phases 6 to 8 according to HOAI
- Requirements for specifications according to VOB/A
- Preparation of specifications with bill of quantities for construction work
- Procurement process of a public and private contracting authority for construction services
- Quantity determination and invoice verification on the basis of generally recognised rules of technology

4 Participation requirements

None

5 Form of assessment

Combination examination (term paper and written examination)

6 Condition for the award of credit points

Module examination pass

7 Application of the module (in the following study programmes)**:**

Architecture (B.A.)

8 Module coordinator

Prof. Dr.-Ing. Oliver Nister

9 Other information

The course is taught by a lecturer

Bachelor Thesis								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	360 h	**12**	6th sem.	Annual	Summer	1 sem.	Compulsory	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
			360 h		Group or individual work	German

2	**Learning outcomes / competences**
	By successfully completing the bachelor thesis, students are able to define, analyse and process an architectural design/project in terms of content, develop it into a holistic concept and present it using text and architectural means such as plan drawings, 3D visualisations and architectural and urban development models. Through the oral presentation of the bachelor thesis, the students prove whether they have been enabled by their previous studies to communicate their design work in the technical language of architecture and to argue and represent it to experts.
4	**Participation requirements**
	Successful completion of all but one of the module examinations and admission to the bachelor thesis.
5	**Form of assessment**
	Bachelor examination
6	**Condition for the award of credit points**
	Successful submission and presentation of the bachelor thesis, passing the bachelor examination
7	**Application of the module** (in the following study programmes)**:**
	Architecture (B.A.)
8	**Module supervisor**
	Prof. Dipl.-Ing. Gesche Grabenhorst, Prof. Dipl. Ing. Bettina Georg, Prof. Dipl. Ing. Bettina Mons, Prof. Dipl.-Ing. Bernd Niebuhr, Prof. Dipl. Ing. Peter Sassenroth, Prof. Dipl.-Ing. Georg Schönborn
9	**Other information**
	Successfully completing a bachelor thesis and passing the bachelor examination does not grant graduates of the BAR study programme in architecture a German authorisation to present building documents (‘Bauvorlagenberechtigung’). (The eligibility for the Chamber of Architects – registration as an architect in the list of the Chambers of Architects – as well as the right to use the professional title ‘architect’ is not achieved through this bachelor's degree study programme. This eligibility requires at least 8 semesters of study.

Building Construction I								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	270 h	**9**	3rd + 4th sem.	Annual	Winter + summer	2 sem.	Compulsory	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**planned Group size**	**Language**
	Lecture	2x2 SCH/60 h	30 h	Lecture	60	German
	Practical / Seminar	4 SCH/60 h	120 h	Group work, seminar	15	German

2 Learning outcomes / competences

After successfully participating in the module, students have the following knowledge and skills:

- Recognise, distinguish and apply different construction methods and material-appropriate constructions for the planning of building projects.
- Development of structural and load-bearing concepts for building designs for the implementation of specific design concepts and design intentions
- Distinguish and assess building components and elements in terms of sound, heat, fire and moisture protection
- Designing and planning components until they are ready for production, taking the design further and presenting basic solutions for realisation
- Drafting and presenting constructive solutions for building design according to the standard of implementation and detail planning
- Developing and applying social skills for teamwork

3 Contents

Development and interrelationships of different construction methods, especially skeleton construction (timber, steel, reinforced concrete skeleton construction);
- Material-appropriate constructions, joining techniques, connections, joints
- Structural concepts;
- Building envelopes and façade structures, taking into account construction-related, economic, ecological and design aspects, reflected in the building task and design concept;
- Further development and elaboration of drafts for construction solutions for the purpose of implementation and detailed planning. (Designing down to the last detail)

4 Participation requirements

Formally, none; in terms of content, the subject knowledge contained in the module "Fundamentals of Building Construction" is assumed

5 Form of assessment

Project work

6 Condition for the award of credit points

Passing the module examination (Successful submission / presentation of the constructive design / paper and passing the colloquium)

7 Application of the module (in the following study programmes)**:**

Architecture (B.A.)

8 Module supervisor

Professor Dipl.-Ing. Peter Sassenroth

9 Other information

Building Construction II								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	180 h	**6**	5th sem.	Annual	Winter	1 sem.	Compulsory	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Practical / Seminar	4 SCH/60 h	120 h	Group work, seminar	15	German

2 Learning outcomes / competences

After successfully participating in the module, students have the following knowledge and skills:

- Recognise, distinguish and apply different construction methods and material-appropriate constructions for the planning of complex building projects.
- Development of structural and load-bearing concepts for building designs for the implementation of specific design concepts and design intentions
- Distinguish and assess building components and elements in terms of sound, heat, fire and moisture protection
- Designing and planning components until they are ready for production, taking the design further and presenting basic solutions for realisation
- Drafting and presenting constructive solutions for building design according to the standard of implementation and detail planning
- Developing and applying social skills for teamwork

3 Contents

Development and interrelationships of different building methods, especially of the skeleton structure

- Material-appropriate constructions, joining techniques, connections, joints,
- Structural concepts;
- Building envelopes and façade structures, taking into account construction-related, economic, ecological and design aspects, reflected in the building task and design concept;
- Façade technology with special consideration of sun protection and ventilation concepts;
- Further development and elaboration of drafts for construction solutions in the sense of implementation and detailed planning. (Designing down to the last detail)
- Presenting the architect's overall plans for their work in a design project.

4 Participation requirements

Formally, none; in terms of content, the subject knowledge contained in the modules "Fundamentals of Building Construction" and “Building Construction I” is assumed

5 Form of assessment

Project work

6 Condition for the award of credit points

Passing the module examination (Successful submission / presentation of the constructive design / paper and passing the colloquium)

7 Application of the module (in the following study programmes)**:**

Architecture (B.A.)

8 Module supervisor

Professor Dipl.-Ing. Peter Sassenroth

9 Other information

Building Culture and Gender								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	150 h	**5**	6th sem.	Annual	Summer	1 sem.	Compulsory elective	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Lecture	1 SCH / 15 h	22.5 h	Lecture	20	German
	Exercise	2 SCH / 30 h	4 5 h	Group work	20	German
	Practical / Seminar	1 SCH / 15 h	22.5 h	Individual work	15	German

2 Learning outcomes / competences

After successfully participating in the module, students have the following knowledge and skills:
They are able to
- work scientifically.
- analyse, differentiate and assess specialist topics in the field of building culture.
- derive and apply gender and diversity-related aspects in their own professional practice.
- apply presentation and moderation techniques as well as social skills.

3 Contents

- Development and analysis of gender-specific characteristics in the occupational field of architecture and construction.
- Incorporate gender mainstreaming and diversity management into project processes and project content.
- Analysis and evaluation of selected special topics and issues, reflecting the current social and socio-political development of guiding ideas on the topic of "building culture and gender" and application to individual projects, also in cooperation with other institutions and population groups.

4 Participation requirements

None

5 Form of assessment

Project work

6 Condition for the award of credit points

Module examination pass

7 Application of the module (in the following study programmes)**:**

Architecture (B.A.);
by arrangement, also to prepare for other modules: "Design I / II", bachelor thesis

8 Module supervisor

Prof. Dipl.-Ing. Bettina Mons

9 Other information

Building Materials Science								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	240 h	**8**	1st + 2nd sem.	Annual	Winter + summer	2 sem.	Compulsory	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Lecture	2 SCH/30 h	45 h	Lecture	120	German
	Sem. lessons	2 SCH/30 h	45 h	Seminar +	< 35	German
	Laboratory practical course	2 SCH/30 h	30 h + 30 h	Exercise Presentation + group work	< 12	German

2	**Learning outcomes / competences**
	Describe the origin/production and possible uses of important building materials; state advantages and disadvantages or limits of use within the application of building materials; define objectives in the development of construction solutions in everyday working life; determine and apply short building material designations and design values; explain significant incompatibilities and formulate the possible uses; carry out and compare common building material tests and possible quick tests; describe technical problems and present technical approaches to solutions; argue as well as evaluate and draw conclusions for a binding use of building materials in each case; derive a necessary self-critical ability to regularly question selection, testing and calculation processes in the face of constantly changing building conditions.
3	**Contents**
	Introduction to the use of building materials in construction (including historical developments); extraction, production or manufacture and use of relevant building materials; typical and also harmful basic chemical reactions during production; chemical and physical behaviour of binders and building materials during construction; methods of practical calculation of compositions and characteristic values of building materials; testing and assessment by construction site or laboratory tests within the application; Aspects relating to durability and corrosion behaviour as well as environmental and health compatibility; application of associated standards and other regulations as well as literature sources Primarily for: Natural stone, aggregates, binders, concrete, artificial stones, steel and wood
4	**Participation requirements**
	None
5	**Form of assessment**
	Combination exam: Term paper (consisting of presentation in the laboratory practical and submission of the evaluation of all laboratory protocols in the laboratory portfolio submitted), written examination
6	**Condition for the award of credit points**
	Proven participation in the laboratory practicals and passing the module examination
7	**Use of the module** (in the following bachelor degree programmes)**:**
	Architecture (B.A.); Civil Engineering, Project Management Construction and Infrastructure Engineering (B.Eng.)
8	**Module supervisor**
	Prof. Dr.-Ing. Heiko Twelmeier
9	**Other information**

Business Administration								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	150 h	**5**	6th sem.	Annual	Winter	1 sem.	Compulsory elective	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Lecture	3 SCH 45 h	60 h	Lecture	120	German / English
	Exercise	1 SCH 15 h	30 h	Exercise	120	German / English /

2 Learning outcomes / competences

After completing the module, the students have an overview of the field of business administration. They know the fundamental control variables, methods and instruments of business administration as well as the necessary terminology. They can also transfer their knowledge to applications and task fields of business administration in the construction industry and explain them.

3 Contents

- Fundamentals and basic terms of business administration
- Introduction to economic thinking
- Legal influencing factors
- Phases of corporate development
- Legal forms of the companies
- Mergers and acquisitions
- Functions of business administration
- Business organisation
- Business plan

4 Participation requirements

None

5 Form of assessment

Written exam

6 Condition for the award of credit points

Module examination pass

7 Application of the module (in the following study programmes)**:**

Architecture (B.A.), Project Management Construction (B.Eng.), Infrastructure Engineering (B.Eng.), Civil Engineering (B.Eng.)

8 Module supervisor

Prof. Dr.-Ing. Gerald Ebel

9 Other information

Architectural Visualisation								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
X	**150 h**	**5**	1st sem.	Annual	Winter	1 sem.	Compulsory	BA

1	**Course type**	**Contact hours**	**Self-study**	**Teaching forms (learning methods)**	**Planned group size**	**Language**
	Lecture	1 SCH / 15 h	20 h	Lecture	100	German
	Exercise	1 SCH / 15 h	25 h	Individual/group work	15–20	German

2 Learning outcomes/competences

Architectural Visualisation Techniques sub-module:
N.N.

CAD sub-module:
Skills in modern computer-aided drafting. Understanding the graphical behaviour of model objects as well as visualising them on a computer. Acquisition of techniques for drawing and modelling buildings in conformity with standards.

3

Contents
Architectural Visualisation Techniques sub-module:
General information on visualisation techniques (drawing materials and equipment, sheet formats, line widths and types, hatching, sectional and plan views, plan contents); Basic geometric constructions; third-angle projection and derivations from these, such as true sizes of areas, flat projections and intersections.

CAD sub-module:
Functioning of modern CAD systems for the graphic and informational modelling of buildings as well as their construction elements, creation and editing of model objects on the computer of varying complexity, starting with simple objects, through more complex components with auxiliary constructions, to complete model drawings of buildings with dimensioning and plan frames. Derivation of elevations, sectional and plan views, taking into account DIN 1356 with regard to correct line widths, line types, hatchings and scales.

4 Participation requirements

None

5 Form of assessment

Subject-related and methodical in the form of a written examination as well as independently in the form of a term paper

6 Condition for the award of credit points

Written examination pass, successfully finished term paper, proof of participation in the exercises

7 Application of the module (in the following study programmes)**:**

Architecture (B.A.) and Project Management Construction (B.Eng.)

8 Module coordinator

Prof. Dr.-Ing. Eisfeld / N.N.

9 Other information

Introduction to the History of Architecture								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	150 h	**5**	1st sem.	Annual	Winter	1 sem.	Compulsory elective	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Lecture	2 SCH/30 h	45 h	Lecture	60	German
	Exercise	2 SCH/30 h	45 h	Individual/group work	20	German

2 Learning outcomes / competences

Through successful participation in the module course, students have a basic knowledge of the eras of architectural history and their socio-cultural context.
They are able to recognise, apply and assign architectural features of the individual eras, as well as structures and archetypes that transcend them, and to develop connections.
You will receive instructions on how to work scientifically.

3 Contents

- General overview of the classical eras of architectural history.
- From antiquity to the Industrial Revolution and up to the modern age.
- Capturing the cultural context and zeitgeist.
- Architectural theoretical backgrounds and architectural characteristics of different eras.

4 Participation requirements

None

5 Form of assessment

Term paper

6 Condition for the award of credit points

Successful submission of the term paper, passing the module examination

7 Application of the module (in the following study programmes)**:**

Architecture (B.A.)

8 Module supervisor

Prof. Dipl.-Ing. Bernd Niebuhr

9 Other information

Design I								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	180 h	**6**	3rd sem.	Annual	Winter	1 sem.	Compulsory	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Practical / Seminar	4 SCH/60 h	120 h	Individual/group work	15	German

2 Learning outcomes / competences

After successful participation in the module course, students will be able to:
- define, illustrate, organise and develop architectural/urban planning concepts.
- assess architectural contexts in terms of design, construction and building law.

They gain the ability and competence to intersect parameters:
- urban context, programme, construction, building services, economy, sustainability, material and design.
- architectural and urban design.

3 Contents

- Analysis of tasks.
- Designing architectural projects.
- Understanding the relationship between function, programme, construction and design.
- Implementation of the programme in form and material.
- Training in designing through sketching, drawing and making experimental models.
- Presentation of the designs by the media: Text, drawing, visualisation, model-making.

4 Participation requirements

Formally, none; in terms of content, the subject knowledge contained in the modules "Principles of Architectural Design I+II" and “Fundamentals of Design I+II” is assumed

5 Form of assessment

Project work

6 Condition for the award of credit points

Successful submission and presentation of the semester drafting project, passing the module examination

7 Application of the module (in the following study programmes)**:**

Architecture (B.A.).

8 Module supervisor

Prof. Dipl.-Ing. Gesche Grabenhorst, Prof. Dipl.-Ing. Bettina Georg, Prof. Dipl.-Ing. Bettina Mons, Prof. Dipl.-Ing. Bernd Niebuhr, Prof. Dipl.-Ing. Peter Sassenroth, Prof. Dipl.-Ing. Georg Schönborn

9 Other information

Design II								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	180 h	**6**	4th sem.	Annual	Summer	1 sem.	Compulsory	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Practical / Seminar	4 SCH/60 h	120 h	Individual/group work	15	German

2 Learning outcomes / competences

After successful participation in the module course, students will be able to:
- define, illustrate, organise and develop architectural/urban planning concepts
- assess architectural contexts in terms of design, construction and building law.

They gain the ability and competence to intersect parameters:
- urban context, programme, construction, building services, economy, sustainability, material and design.
- architectural and urban design.

3 Contents

- Analysis of tasks.
- Designing architectural projects.
- Understanding the relationship between function, programme, construction and design.
- Implementation of the programme in form and material.
- Training in designing through sketching, drawing and making experimental models.
- Presentation of the designs by the media: Text, drawing, visualisation, model-making.

4 Participation requirements

Formally, none; in terms of content, the subject knowledge contained in the modules "Principles of Architectural Design I+II", “Fundamentals of Design I+II” and “Design I” is assumed

5 Form of assessment

Project work

6 Condition for the award of credit points

Successful submission and presentation of the semester drafting project, passing the module examination

7 Application of the module (in the following study programmes)**:**

Architecture (B.A).

8 Module supervisor

Prof. Dipl.-Ing. Gesche Grabenhorst, Prof. Dipl.-Ing. Bettina Georg, Prof. Dipl.-Ing. Bettina Mons, Prof. Dipl.-Ing. Bernd Niebuhr, Prof. Dipl.-Ing. Peter Sassenroth, Prof. Dipl.-Ing. Georg Schönborn

9 Other information

Introduction for First-Semester Students								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	0	**0**	1st sem.	Annual	Winter	1 week	Compulsory	B.A.
1	**Course type**		**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**		**Planned group size**	**Language**
	Lecture Sem. lessons Exercise Internship / Seminar		One week introduction + classes in the 2nd week		Lecture Exercises and tutorials Excursions Projects			German
2	**Learning outcomes / competences** Students get to know their university campus. They become familiar with the basic conditions of the degree programme and gain knowledge of the study schedule and examination procedures as well as the exchange of information on campus.							
3	**Contents** The faculty, its facilities and the venue of study, Minden Structure of the degree programmes, timetables Introduction to the faculty library and how to use it Information on the university organisation and the student self-governing bodies Introduction to data processing Safety briefings							
4	**Participation requirements** Acceptance letter							
5	**Form of assessment** No examination							
6	**Condition for the award of credit points**							
7	**Application of the module** (in the following study programmes)**:** This module can be used in all degree programmes.							
8	**Module supervisor** Prof. Dr.-Ing. Britta Wißmann							
9	**Other information** Introductory events by tutors (students from higher semesters from the individual degree programmes), professors and academic staff from the various fields of study, safety officers, etc.							

First-Semester Students Maths Fitness								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	0	**0**	1st sem.	Annual	Winter	0.5 sem.	Compulsory elective	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Lecture	1 SCH	on demand	Lecture	35	German
	Exercises + Tutorials	1 SCH	on demand	Sem. lessons	35	German

2 Learning outcomes / competences

After successful completion of the module

- students are able to apply the school subject matter of mathematics in engineering studies by reviewing it in the Maths Fitness module,
- the students are able to enter the module Mathematics 1 with the basic knowledge imparted,
- the students have strengthened their study skills in terms of self, methodological and social competences and refreshed their school knowledge.

3 Contents

Mathematics:

- Numbers, basic rules for calculating with real numbers,
- Fractions, percentages and powers,
- Binomial formulae and quantities,
- Solving equations,
- Calculation and representation of linear and quadratic functions.

4 Participation requirements

Acceptance letter

5 Form of assessment

No examination

6 Condition for the award of credit points

7 Application of the module (in the following study programmes)**:**

This module can be used in all degree programmes.

8 Module supervisor

Prof. Dr.-Ing. Klaus Peters

9 Other information

Introductory lecture with exercises of 2 SCH on a total of 5 days in the morning until the middle of the semester in a block.

Technical English								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	150 h	**5**	1st sem.	Annual	Winter	1 sem.	Compulsory* Compulsory elective	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Sem. lessons	4 SCH/60 h	90 h	Sem. lessons Exercise	25	English

2 Learning outcomes / competences

On successful completion of the module, students have the following knowledge and skills:

- You can understand and summarise construction-related English-language texts and documents
- You are able to communicate in English with colleagues in meetings about construction projects
- You can make telephone calls in English
- You can produce simple written documents in English about construction projects
- You are able to use English technical vocabulary in your profession

3 Contents

- Professions in the construction industry
- Components and building constructions (e.g. foundation, roof)
- Building materials
- Drawings and plans
- Negotiations with clients
- Tenders and contracts
- Construction sites and construction organisation
- Telephone communication

4 Participation requirements

None

5 Form of assessment

Written exam

6 Condition for the award of credit points

Module examination pass

7 Application of the module (in the following study programmes)**:**

Project Management Construction (B.Eng.), Infrastructure Engineering (B.Eng.), Architecture (B.A.), Civil Engineering (B.Eng.),

8 Module supervisor

Cathrine Stones

9 Other information

For BAR it is compulsory * to take a module in Business English from the compulsory elective catalogue: either Technical English or English Presentations

English Presentations								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	150 h	**5**	6th sem.	Annual	Summer	1 sem.	Compulsory¹ Compulsory elective	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Sem. lessons	4 SCH/60 h	90 h	Sem. lessons Exercise	25	English

2 Learning outcomes / competences

On successful completion of the module, students have the following knowledge and skills:

- Students are able to create and conduct a presentation in English in an international professional context
- They can adapt the language register used to the listeners' knowledge of English and
- adapt the tone to their level of awareness
- They are able to apply learned linguistic structures and conventions that make the presentation more accessible to the audience

3 Contents

- Presentation techniques
- Structuring and “signposting”
- Presenting facts and data
- Intonation and articulation
- Dealing with questions
- Correct choice of tone (formal – casual)
- Linguistic use of visual aids
- Literature research and familiarisation with independently selected construction-related presentation themes

4 Participation requirements

Formally: none. In terms of content, knowledge of the module "Technical English" is assumed.

5 Form of assessment

Combination exam
(Oral examination (70%) and written examination (30%))

6 Condition for the award of credit points

Module examination pass

7 Application of the module (in the following study programmes)**:**

Project Management Construction (B.Eng.), Infrastructure Engineering (B.Eng.), Architecture (B.A.), Civil Engineering (B.Eng.)

8 Module supervisor

Cathrine Stones

9 Other information

For BAR it is compulsory* to take a module in Business English from the compulsory elective catalogue: either Technical English or English Presentations

Conceptual Design								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	120 h	**4**	5th sem.	Annual	Winter	1 sem.	Compulsory	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Exercise	3 SCH / 45 h	75 h	Individual/group work	20	German

2 Learning outcomes / competences

After successful completion of the module, students have the following knowledge and skills and are able to:
- deepen their practical and theoretical knowledge in drafting and design
- to develop individual expression techniques and to practically realise their design ideas in form and aesthetics.

By increasing the quality of their designs, their competitiveness increases. They learn to apply multimedia techniques in accordance with the demands of contemporary building culture

3 Contents

- Development of sophisticated design projects and concepts on free themes
- Competitions from the fields of art, architecture and design
- Conceptual design for building, open space and urban design
- Exhibition concepts and object development
- Architectural presentation with various graphic media, also films / videos / photography, digital and analogue

4 Participation requirements

Formally, none; in terms of content, the subject knowledge contained in the modules "Principles of Architectural Design I+II" and “Fundamentals of Design I+II” is assumed

5 Form of assessment

Project work

6 Condition for the award of credit points

Module examination pass

7 Application of the module (in the following study programmes)**:**

Architecture (B.A.)

8 Module coordinator

Professor Dipl.-Ing. Bettina Georg

9 Other information

Freehand Drawing								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	150 h	**5**	2nd sem.	Annual	Winter	1 sem.	Compulsory elective	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Exercise	3 SCH / 45 h	105 h	Individual work	20	German

2	**Learning outcomes / competences** At the end of the class, students are able to comprehend and grasp a spatial situation and then draw it freehand. Furthermore, they are enabled to express a spatial situation with a design idea in drawing. Furthermore, they will be able to quickly and confidently put freehand sketches and perspectives on paper for clients and specialist planners in their later professional life.
3	**Contents** - Perspective drawing (one and two vanishing points) - Different locations when drawing (frog, eye and bird's eye view) - Shadow construction in perspective drawing on site - Creating spatial depth - Hatching techniques - Drawing indoors and outdoors - Sheet division when drawing - Thematic series (cafés, churches, furniture, architectural details etc.)
4	**Participation requirements** None
5	**Form of assessment** Project work: Submission of a sketch diary with drawings on a given topic
6	**Condition for the award of credit points** Module examination pass
7	**Application of the module** (in the following study programmes)**:** Architecture (B.A.)
8	**Module coordinator** Professor Dipl.-Ing. Bettina Georg
9	**Other information** The course is taught by the lecturer Dipl.-Ing. Malte Wulf

History of Architecture								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	150 h	**5**	4th sem.	Annual	Summer	1 sem.	Compulsory	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Lecture	2 SCH/30 h	45 h		60	German
	Exercise	2 SCH/30 h	45 h	Individual/group work	20	German

2 Learning outcomes / competences

After successful participation in the module, students will:
- be able to allocate architecture and urban design to the different building eras and link them to their corresponding cultural contexts.
- be able to recognise and assign the architectural-theoretical connections of the eras to art, philosophy and politics and to develop correlations.
- receive instructions on how to work scientifically.

3 Contents

- History of architecture from the Industrial Revolution to the present.
  19th and 20th century: Revolutionary architecture, Classicism, Art Nouveau, 1920s (Bauhaus), post-WWII reconstruction.
- Thematisation of architectural development in the context of art, philosophy, politics, economy and industry.

4 Participation requirements

Formally, none; in terms of content, the subject knowledge contained in the modules “Principles of Architectural Design I+II”, “Fundamentals of Design I+II” is required.

5 Form of assessment

Term paper

6 Condition for the award of credit points

Successful submission of the term paper, passing the module examination

7 Application of the module (in the following study programmes)**:**

Architecture (B.A.)

8 Module supervisor

Prof. Dipl.-Ing. Bernd Niebuhr

9 Other information

Principles of Architectural Design I								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	210 h	**7**	1st sem.	Annual	Winter	1 sem.	Compulsory	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Lecture	2 SCH / 30 h	45 h	Lecture	66	German
	Seminar	3 SCH / 45 h	90 h	Individual/group work (supervised)	15	German

2 Learning outcomes / competences

On successful completion of the module, students have the following knowledge and skills:
- Students learn the craft of architectural drafting
- They gain an awareness of spatial thinking, which is supported by working on models.

They will be able to:
- define the functional, aesthetic and constructive relationships that make up a successful spatial organisation.
- to create an architectural plan graphic for a small construction project. In doing so, they develop the cognitive skills that are a prerequisite for architectural design.

3 Contents

Shapes and proportion, plastic design.
Teaching about the concept of structure, especially in relation to spatial structures and spatial sequences in an architectural context.
Analysis of the elements of architecture in the interior, space typology and floor plan typology of housing.
Completion of small construction tasks in the exercises. Learning how to present architectural plans.
Development of spatial concepts through the use of models (structure-work-presentation model)

4 Participation requirements

None

5 Form of assessment

Project work

6 Condition for the award of credit points

Module examination pass

7 Application of the module (in the following study programmes)**:**

Architecture (B.A.)

8 Module coordinator

Professor Dipl.-Ing. Bettina Georg

9 Other information

The module "Principles of Architectural Design II" builds on the module "Principles of Architectural Design I".

Principles of Architectural Design II								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	210 h	**7**	2nd sem.	Annual	Summer	1 sem.	Compulsory	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Lecture	2 SCH / 30 h	45 h	Lecture	66	German
	Seminar	3 SCH / 45 h	90 h	Individual/group work (supervised)	15	German

2 Learning outcomes / competences

The module builds on the introductory knowledge of the module "Principles of Architectural Design I". After successful participation, students will be able to:

- implement more complex (small) design tasks with higher functional and space requirements with clearly defined concept requirements.
- develop more sophisticated plan graphics to communicate and present the architectural design concept.

3 Contents

- Introduction to design theory and methodology
- Teaching about the relationships between spatial programme, function, construction and form, façade design, materiality and colour in an architectural context.
- Warm-ups using design exercises and development of buildings.
- Execution of design tasks for individual buildings on topics such as: residential buildings, hotels,
- Cafés, student housing, small libraries, etc.
- Introduction to contemporary architecture and critical analysis
- Presentation of architectural design draft graphics

4 Participation requirements

Formally, none; in terms of content, the subject knowledge contained in the module "Principles of Architectural Design I" is assumed

5 Form of assessment

Project work

6 Condition for the award of credit points

Module examination pass

7 Application of the module (in the following study programmes)**:**

Architecture (B.A.)

8 Module coordinator

Professor Dipl.-Ing. Bettina Georg

9 Other information

Fundamentals of Technical Building Equipment								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	180 h	**6**	1st/2nd sem. BPM 3rd/4th sem. BAR	Annual	Winter/ summer	2 sem.	Compulsory	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Lecture	3 SCHSCH/45 h	45 h	Lecture	99	German
	Exercise	3 SCHSCH/45 h	45 h	Group work	20	German

2	**Learning outcomes / competences**
	Knowledge of the sub-areas of technical building equipment; understanding of these sub-areas in the context of the building life cycle; Ability to develop, evaluate and decide on concepts of technical building equipment
3	**Contents**
	Based on the needs of the client and the building user (e.g. thermal and hygienic comfort), structural and technical means are developed to solve the various problems (e.g. heating systems, air conditioning concepts). The various sub-areas of technical building equipment are examined, their significance in the context of integral planning is elaborated and their particular relevance for construction and operating costs is demonstrated. References to the extensive body of standards, guidelines and laws supplement the teaching content.
4	**Participation requirements**
	None
5	**Form of assessment**
	Written exam
6	**Condition for the award of credit points**
	Module examination pass
7	**Use of the module** (in the following degree programmes)
	Architecture (B.A.) and Project Management Construction (B. Eng.)
8	**Module supervisor**
	Prof. Dr.-Ing. Ulrich Schramm
9	**Other information**

International Project								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	150 h	**5**	6th sem.	Annual	Summer	1 sem.	Compulsory elective	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Practical / Seminar	4 SCH/60 h	90 h	Individual/group work	15	German

2	**Learning outcomes / competences** Upon successful completion of the module, students will have the following knowledge and skills; they will be able to: - define, process, analyse, evaluate and develop architectural and urban planning concepts in international cooperation. Students have basic knowledge, competences, experience of project work in an international, socio-cultural context, possibly experience of teamwork with international partner colleges/universities. Language competence (e.g. technical English) will be reinforced.
3	**Contents** - Designing architectural/urban planning projects in an international context. - Design training, potentially through international teamwork / workshops / excursions - Imparting/reflecting knowledge through lectures/seminars, potentially together with international partner colleges/universities.
4	**Participation requirements** Formally, none; in terms of content, the subject knowledge contained in the modules "Principles of Architectural Design I+II" and “Fundamentals of Design I+II” is assumed
5	**Form of assessment** Project work
6	**Condition for the award of credit points** Successful participation in an international project, passing the module examination
7	**Application of the module** (in the following study programmes)**:** Architecture (B.A.)
8	**Module supervisor** Prof. Dipl.-Ing. Gesche Grabenhorst, Prof. Dipl.-Ing. Bettina Georg, Prof. Dipl.-Ing. Bettina Mons, Prof. Dipl.-Ing. Bernd Niebuhr, Prof. Dipl.-Ing. Peter Sassenroth, Prof. Dipl.-Ing. Georg Schönborn
9	**Other information**

Cost Estimation								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	150 h	**5**	4th sem.	Annual	Summer	1 sem.	Compulsory	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Lecture	2 SCH/30 h	45 h	Presentation, interactive exchange	39	German
	Exercise	2 SCH/30 h	45 h	Individual exercises	20	German

2 Learning outcomes / competences

After successful completion of the module, students are able to
- create realistic cost estimation in early project phases,
- develop planning specifications based on a given cost framework,
- examine the feasibility of the project scope under the given framework conditions,
- prepare DIN-compliant fee calculations and
- explore the material independently in more depth.

3 Contents

- Basics of cost estimation
- Presentation of influencing factors
- Definitions of terms (DIN 276, DIN 277, HOAI etc.)
- Overview of cost planning methods and procedures
- Use of planning and cost parameters ("design-to-cost")
- Fee calculation for architectural and engineering services according to HOAI

4 Participation requirements

None

5 Form of assessment

Written exam

6 Condition for the award of credit points

Module examination pass

7 Application of the module (in the following study programmes)**:**

Architecture (B.A.) and Project Management Construction (B.Eng.)

8 Module supervisor

N.N.

9 Other information

Planning Management								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	150 h	**5**	3rd sem. BPB 5th sem. BAR	Annual	Winter	1 sem.	Compulsory	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Lecture	2 SCH/30 h	45 h	Lecture	80–100	German
	Exercise	2 SCH/30 h	45 h	Individual and group work	20	German

2 Learning outcomes / competences

After successfully participating in the module, students have the following knowledge and skills:
They are able to:
- distinguish, develop and apply organisational and scheduling structures for complex planning and building construction projects to take on the generalist role of the architect in the planning and construction team or to take over the diverse tasks of project managers in construction management and real estate.
- strengthen their own professional competences.
- apply and improve presentation and moderation techniques as well as social skills in teamwork.

Contents

- Basics and terms of project management for the real estate and building construction;
- Structural and procedural organisation of construction projects;
- Internal and external project organisation;
- Organisational tools, information and documentation;
- Stakeholder models and fields of activity of those involved in the planning and construction process;
- Basics of quality management;
- Scheduling;
- Application of rules and regulations (e.g. HOAI, AHO series, etc.).

4 Participation requirements

None

5 Form of assessment

Combination examination (term paper and oral examination)

6 Condition for the award of credit points

Successful submission of the exercises and passing of the module examination

7 Application of the module (in the following study programmes)**:**

Architecture (B.A.) and Project Management Construction (B.Eng.)

8 Module supervisor

Prof. Dipl.-Ing. Bettina Mons

9 Other information

Law								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	150 h	**5**	1st/3rd/5th sem.	Annual	Winter	1 sem.	Compulsory	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Lecture	4 SCH/60 h	90 h	Lecture / Script	150	German

2 Learning outcomes / competences

After successfully participating in the module, students have the following knowledge and skills:
By acquiring knowledge of the legal foundations of public and private building law, students will be in a position, at the end of the course, to analyse the legal issues of simple case studies from practice and bring the case studies to a defensible solution using basic solution techniques.

3 Contents

Part A:
Private/Public Building Law

General legal orientation and decision-making skills in the preparatory planning and implementation phases of construction with regard to the resulting general and project-related framework conditions and consequences.

Planning law

- Urban land use planning
- Land use plan; development plan
- Determinations of the Development Plan; safeguarding of urban land use planning; preservation of the plan
- Admissibility of projects under building planning law; BauGB, BauNVO (German building regulations law/construction law)
- Functions and content of building regulations law; BauO NRW
- Hazard prevention, aesthetic concerns
- Substantive and formal building code law
- Legal protection of citizens

Part B: Contractual law
Differentiation of contractual forms and legal relationships of the parties involved in the construction:

- Law on contracts for work and services according to the German Civil Code (BGB), differentiation from sales contracts, contracts for work and services, service contracts,
- Architectural law, main features of the architect and engineer contract with special consideration of the new regulations to the German Civil Code (BGB) as of 01.01.2018 and the HOAI
- VOB Part A, B, C
- incl. their historical development and legal nature as GTCs and basic features of public procurement law
- Differences between VOB and BGB with special consideration of participants (specialist contractor, main contractor, subcontractor, general contractor, general contractor, property developer, forms of cooperation);
- Organisation; deadlines, quality, remuneration and disputes in construction (court organisation, independent procedure for taking evidence, lawsuit, notice of dispute, joint and several obligation)

4	**Participation requirements** None
5	**Form of assessment** Written examination
6	**Condition for the award of credit points** Successful completion of the joint module examination (written examination parts A and B)
7	**Application of the module** (in the following study programmes)**:** Architecture (B.A.) and Project Management Construction (B.Eng.) – each in the 3rd semester; Civil Engineering (B. Eng.) in the 5th semester; Infrastructure Engineering (B.Eng.) in the 1st semester.
8	**Module supervisor** Prof. Dipl.-Ing. Bettina Mons
9	**Other information** The courses are taught by lecturers, currently: NN

Urban Design								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	240 h	**8**	5th sem.	Annual	Winter	1 sem.	Compulsory	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Lecture	2 SCH/30 h	45 h	Lecture	60	German
	Practical / Seminar	4 SCH/60 h	105 h	Individual/group work	15	German

2 Learning outcomes / competences

After successful participation in the module course, students will be able to:
- define, analyse, evaluate and develop urban planning concepts.
- assess the urban planning context
- to carry out urban planning designs for urban redevelopment/urban expansion
- assess the permissibility of building projects
- assess urban planning contexts in terms of design, sociological, ecological and legal aspects

3 Contents

- Definition of basic terms and area of expertise of urban planning.
- Urban planning as planning the order of living together.
- City models and utopias in reflection of the social and political situation of the time.
- Urban design, ecology and sustainability in urban development.
- Urban planning methodology, analyses, types of plans.
- Fundamentals of urban land use planning/levels of spatial planning: Land use plan, development plan, urban framework planning, admissibility criteria (Section 34, Section 35)

4 Participation requirements

Formally, none; in terms of content, the subject knowledge contained in the modules "Principles of Architectural Design I+II" and “Fundamentals of Design I+II” is assumed

5 Form of assessment

Project work

6 Condition for the award of credit points

Successful submission and presentation of the urban design semester drafting project, passing the module examination

7 Application of the module (in the following study programmes)**:**

Architecture (B.A.)

8 Module supervisor

Prof. Dipl.-Ing. Bernd Niebuhr

9 Other information

Ad-Hoc Design								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	120 h	**4**	2nd sem.	Annual	Summer	1 sem.	Compulsory	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned group size**	**Language**
	Practical / Seminar	3 SCH / 45 h	75 h	Individual/group work	15	German

2 Learning outcomes / competences

After successful participation in the module, students will be able to:
- define, work on, analyse and develop architectural concepts within a time-limited framework
- work intensively on a specific topic in a short time through text, drawing and modelling.

3 Contents

- Analysis of tasks.
- Designing smaller architectural projects, design tasks, design exercises, essays, etc.
- Implementation of the programme in construction, design and material.
- Training in designing through sketching, drawing and making experimental models.

4 Participation requirements

Formally, none; in terms of content, the subject knowledge contained in the modules “Principles of Architectural Design I” and “Fundamentals of Design I” is assumed

5 Form of assessment

Project work
2 x 14-day draft (draft over 14 days)
2 x ad-hoc (draft over 24 hours)

6 Condition for the award of credit points

Successful submission of the 4 individual short designs (2 x 14-day draft and 2 x impromptu), passing the module examination

7 Application of the module (in the following study programmes)**:**

Architecture (B.A.)

8 Module supervisor

Prof. Dipl.-Ing. Gesche Grabenhorst, Prof. Dipl.-Ing. Bettina Georg, Prof. Dipl.-Ing. Bettina Mons, Prof. Dipl.-Ing. Bernd Niebuhr, Prof. Dipl.-Ing. Peter Sassenroth, Prof. Dipl.-Ing. Georg Schönborn

9 Other information

Structural Engineering I								**Abbr. TWL1**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
X	**180 h**	**6**	1st + 2nd sem.	annual	Summer/ winter	2 sem.	Compulsory	BA

1	**Course type**	**Contact hours**	**Self-study**	**Teaching forms (learning methods)**	**Planned group size**	**Language**
	Lecture	3 SCH / 45	45 h	Lecture	70	German
	Exercise	2 SCH / 30	60 h	Group work	35	German

2 Learning outcomes/competences

Imparting factual knowledge and conceptual knowledge of statics and structural engineering. Understanding of the behaviour of load-bearing structures using qualitative and quantitative theories and models of equilibrium and deformation. Acquisition of the ability to independently assess and design load-bearing structures as a design tool as well as the ability to engage in dialogue between the architect and the structural engineer.

3 Contents

Constructive design principles; actions, forces and moments; load-bearing structure and load transfer; static modelling and idealisation; equilibrium in the plane; relative stiffnesses and deformations; statically determinate systems (beams and frames); support forces and internal forces; cross-section values; materials; stability; deformation work and deformations; statically indeterminate systems; structural typologies; members with bending, shear and normal force loading; trusses

4 Participation requirements

Knowledge from the parallel study offers: Building Materials and Building Construction, mathematical basic knowledge on equations and geometry

5 Form of assessment

Subject-related and methodical in the form of a written examination

6 Condition for the award of credit points

Passing of online written examination or online oral examination

7 Application of the module (in the following study programmes)**:**

Architecture (B.A.)

8 Module coordinator

Prof. Dr.-Ing. Michael Eisfeld MSc

9 Other information

Structural Engineering II								**Abbr. TWL2**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
X	**150 h**	**5**	4th sem.	annual	Winter	1 sem.	Compulsory	BA

1	**Course type**	**Contact hours**	**Self-study**	**Teaching forms (learning methods)**	**Planned group size**	**Language**
	Lecture	2 SCH / 30	30h	Lecture	70	German
	Exercise	2 SCH / 30	60h	Group work	35	German

2	**Learning outcomes/competences** Imparting competent knowledge about common load-bearing constructions. Understanding of the behaviour of individual building elements as well as their interaction in a load-bearing structure using the theories and models from “Structural Engineering I”. Enhancing the ability to independently design constructively by working on a project from other design subjects. Factual knowledge about system and form finding of individual building elements and systems as well as their synthesis into a load-bearing structure.
3	**Contents** Project types of building construction; construction types (solid, steel and timber as well as prefabricated elements); structural material properties; horizontal actions; design and pre-dimensioning of bracing systems; interaction of structural elements in a load-bearing structure; typologies of structural elements for spanning (beams, resolved beams and floor systems as well as arch-like systems); supporting (columns and walls) and foundation (foundation-relevant soil properties, ground-contacting structural elements, shallow and deep foundation structural elements); façade systems, pre-dimensioning and pre-dimensioning of common structural elements of common building construction; material-dependent connections for joining structural elements
4	**Participation requirements** Knowledge from “Structural Engineering I” and from the parallel study offers: Building Materials and Building Construction
5	**Form of assessment** Subject-related and methodical in the form of a written examination as well as socially competent and independently in the form of project work
6	**Condition for the award of credit points** Passing of online written examination or online oral examination as well as successfully finished project work
7	**Application of the module** (in the following study programmes)**:** Architecture (B.A.)
8	**Module coordinator** Prof. Dr.-Ing. Michael Eisfeld MSc
9	**Other information**

Land Surveying								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	150 h	**5**	2nd sem.	Annual	Summer	1 sem.	Compulsory elective *	B.A.

1	**Course type**	**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**	**Planned Group size**	**Language**
	Lecture	1 SCH / 15 h	25 h	Lecture	15	German
	Practical course	3 SCH / 45 h	65 h	Practical course	5	German

2 Learning outcomes / competences

After successfully completing the module, students are able to

- describe different methods of height determination and their possible applications,
- carry out and evaluate a hydrostatic and a geometric levelling,
- derive a profile representation from a terrain survey using a GNSS system and a correction data service,
- describe and execute different methods and tools of position measurement and their possible applications,
- measure an object in a local and in a superordinate coordinate system and represent it in a map,
- carry out a building survey as a manual survey, tachymetrically and photogrammetrically,
- calculate stakeout data from coordinates and transfer them orthogonally and polar to the terrain,
- perform basic geodetic calculations (coordinates, areas and volumes).

3 Contents

- Mathematical and geodetic basics
- Geodetic instruments for height and position measurement and their handling
- Structure and function of machine controls
- Geodetic calculations, longitudinal and transverse profiles, routing elements
- Building survey methods

4 Participation requirements

None

5 Form of assessment

Combination exam: Term paper and written exam or term paper and oral exam

6 Condition for the award of credit points

Proven participation in the practicals, passing the module examination

7 Application of the module (in the following study programmes)**:**

Architecture (B.A.)

8 Module supervisor

Prof. Dr.-Ing. Uwe Weitkemper

9 Other information

The courses are taught by Dipl.-Ing. Andreas Nobbe. For capacity reasons (synergy/ practicals), this compulsory elective module must take place in the summer semester for BAR.

Second Foreign Language – Russian								**Abbr.**
No.	**Workload**	**Credit points**	**Study semester**	**Frequency**	**Sem.**	**Duration**	**Type**	**Q level**
	150 h	**5**	1st sem.	Annual	Winter	1st sem.	Compulsory elective	B.A.
1	**Course type**		**Contact hours**	**Self-study**	**Forms of teaching (forms of learning)**		**Planned group size**	**Language**
	Lecture		2 SCH/30 h	45 h	Lecture		20	Russian/ German
	Practical exercise		2 SCH/30 h	45 h	Practical exercises		20	Russian/German
2	**Learning outcomes / competences** At the end of the semester, students will be able to form and use simple sentences, ask and answer short questions in the area of language competences. You can understand simple sentences and communicate in situations involving familiar things, e.g. introduce yourself, ask about people, places, objects, country names, origin, nationality, etc., talk about various activities, ask about them, have simple conversations, make short telephone calls. In the area of written competences, they have mastered the Cyrillic script. You are able to read simple texts and understand familiar vocabulary and topics.							
3	**Contents** - Cyrillic script. Pronunciation rules. Emphasis. Nouns, nominative singular Understanding internationalisms. Deciphering unknown words. Listening comprehension with W-questions - Gender. Endings. - Negation. - The absence of the corresponding forms for "is" and "are". - Personal pronoun. Possessive pronoun. - Nouns. Case prepositional. Prepositions. Inquiring about the location. - Nouns. Accusative singular Asking to show something, giving. Say what you like/don't like. - Nouns. Generic singular Expressing ownership, belonging. - Negation of "have". - The verb. Conjugation endings. Imperative verbs. - Negation. Fixed terms (various activities). - И – conjugation, е – conjugation. Irregular verbs. - Nouns on – И Я. Country names. - Stating name, age in the third person. - Preterite. Gender. - Adverbs. Sentence formation. - Vocabulary (introductions / honorifics / farewells. Like/dislike expressions, language skills, interests, activities). Possessions, affiliation e.g. family, job.							
4	**Participation requirements** None							
5	**Form of assessment** Written examination							
6	**Condition for the award of credit points** Module examination pass							
7	**Application of the module** (in the following study programmes)**:** Architecture (B.A.), Civil Engineering (B. Eng.), Project Management Construction (B.Eng.)							
8	**Module supervisor** Prof. Dr. Grit Behrens							
9	**Other information** Approx. 30% of the students speak Russian as their language of origin and have a command of the language at level B2-C1. This varies from course to course. Due to the lack of teaching hours, it is not possible to create differentiated lessons and exams. The course is taught by Natalia Kretzschmar.							