



Course of studies

Bachelor of Science Civil Engineering (Civil Engineering)**Closure:**

bachelor of science

Abbreviations:

Civil Engineering

Matriculation to:

Winter and summer semester

Faculty:

Faculty VI

Responsible:

Stephan, Dietmar Aloys

Course description:*not reported*

You can find further information under:

not reported

Bachelor of Science Civil Engineering (Civil Engineering)

StuPO 2015 (1st amendment 2018)**Date:***not reported***Points:**

180

Study/examination regulations description:

<p>Buildings, roads, bridges, towers and power plants must be safe, durable and sustainable. These structures determine our environment and in the best case can even enrich it. Civil engineers therefore have a special cultural obligation. They have to consider the construction of buildings in a holistic sense.</p><p>The interdisciplinary bachelor's degree in civil engineering teaches you the scientific fundamentals of civil engineering in its entirety. During the course of study, you will deal with the planning, execution, operation and deconstruction of structural facilities. Further course contents include general civil engineering methods, design and construction, geotechnics, water management, infrastructure and overall management.</p>

Further information on the study regulations can be found under:

not reported

Further information on the examination regulations can be found at

not reported

The weighting figure '1.0' means that the grade is weighted according to the volume in LP (§ 47 (6) General Standard Rules); '0.0' means that the grade is not weighted; any other figure is a multiplication factor for the volume in LP. Further information on the formation of the final grade can be found in the applicable study and examination regulations.



Module list SS 2020

Mandatory area

In order to pass this course of study, the following conditions must be fulfilled:

All modules of this field of study must be passed.

Modules in this field of study:

Title	LP	Type of examination	Graded	Weight
Analysis I and Linear Algebra for Engineering	12	Written examination	y e s	0.0
Analysis II for Engineering Sciences	9	Written examination	y e s	0.0
Construction I	3	Written examination	y e s	1.0
Structural analysis I	6	Written examination	y e s	1.0
Structural analysis II	6	Written examination	y e s	1.0
Building Materials and Construction Chemicals I	6	Written examination	y e s	1.0
Building Materials and Construction Chemicals II	3	Written examination	y e s	1.0
Construction industry I	6	Written examination	y e s	1.0
Foundation engineering and soil mechanics I (9 LP)	9	Written examination	y e s	1.0
Basics of building informatics	6	Portfolio review	y e s	1.0
Basics of building physics	6	Written examination	y e s	1.0
Fundamentals of urban water management	3	Written examination	y e s	1.0
Basics of the structural theory	3	Portfolio review	y e s	1.0
Basics of design and construction	6	Portfolio review	y e s	1.0
Fundamentals of road design and road construction	3	Written examination	y e s	1.0
Basic project - civil engineering	6	Portfolio review	y e s	1.0
Kinematics and dynamics	9	Portfolio review	y e s	0.0
Structural engineering I	6	Written examination	y e s	1.0
Structural Engineering II	9	Written examination	y e s	1.0
Numerical methods in civil engineering	6	Portfolio review	y e s	1.0
Statics and elementary strength	9	Portfolio review	y e s	1.0
Fluid Mechanics	6	Written examination	y	1.0

Systems engineering I & II	6	Portfolio review	ess	1.0
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Elective range - Variable civil engineering modules

In order to pass this course of study, the following conditions must be fulfilled:

At least 12 credit points must be passed. A maximum of 12 credit points may be passed.

Modules in this field of study:

Title	LP	Type of examination	Graded	Weight
Applied building material testing	6	Portfolio review	y	1.0
Construction operation II	6	Portfolio review	y	1.0
Construction chemistry and building material testing	6	Portfolio review	y	1.0
Building Dynamics	6	Written examination	y	1.0
Structural analysis III	6	Written examination	y	1.0
Building Information Modeling: Basics and selected examples	6	Portfolio review	y	1.0
data engineering	6	Portfolio review	y	1.0
Foundation engineering and soil mechanics II	6	Portfolio review	y	1.0
Fundamentals of rail transport	6	Portfolio review	y	1.0
Engineering Masonry Construction	6	Written examination	y	1.0
Structural engineering III	6	Written examination	y	1.0
Water management	6	Portfolio review	y	1.0

Election area

In the elective area, modules of 15 LP must be completed. Elective modules serve to acquire additional technical, interdisciplinary and professional skills and can be taken from the entire range of subjects offered at the Technische Universität Berlin, other universities and equivalent institutions of higher education within the scope of the Higher Education Framework Act, as well as at institutions of higher education recognized as equivalent and universities abroad.

can be selected. It is recommended to choose courses of interdisciplinary studies. The modules that can be selected also include

Modules for learning foreign languages.

The grades of the elective modules are not included in the total score calculation.

In order to pass this course of study, the following conditions must be fulfilled:

At least 15 credit points must be passed. A maximum of 15

credit points may be passed.

Bachelor thesis

In order to pass this course of study, the following conditions must be fulfilled:

All modules of this field of study must be passed.

Modules in this field of study:

Title	LP	Type of examination	Graded	Weight
Bachelor thesis - civil engineering (StuPO 2015)	9	Final Thesis	yes	1.5


Analysis I and Linear Algebra for Engineering
Title of the module:

Analysis I and Linear Algebra for Engineering

Credit points:

12

Person in charge:

Hammer, Matthias

website:https://www.math.tu-berlin.de/mathematik_service/**Secretary's office:***Not specified***contact person:***Not specified***E-mail address:**

mathe-service@math.tu-berlin.de

Display language:

German

Learning outcomes

The students should

- have the methodological foundations for the mathematical foundation of the natural sciences and engineering, and
- have a sound knowledge of the scientific and mathematical contents, principles and methods
- master the differential and integral calculus for functions of a real variable as a prerequisite for dealing with mathematical models in the engineering sciences
- linear structures as the basis for engineering modelling, including vector and matrix calculus as well as the fundamentals of the theory of linear differential equations.

Course contents

- Quantities and illustrations, full induction
- Number representations, real numbers, complex numbers
- Number sequences, convergence, infinite series, power series, limit value and continuity of functions
- Elementary rational and transcendental functions
- Differentiation, extreme values, mean value theorem and consequences
- Higher derivatives, Taylor polynomial and series
- Applications of differentiation
- definite and indefinite integral, integration of rational and complex functions, improper integrals, Fourier series
- matrices, linear systems of equations, Gauss algorithm
- Vectors and vector spaces
- Linear images
- Dimension and linear independence
- Matrix algebra
- Vector Geometry
- Determinants, Eigenvalues
- Linear differential equations

Module components

Courses	Type	Number	Rotation	SWS
Analysis I and Linear Algebra for Engineering	VL	3236 L 002/7	WS/SS	6
Analysis I and Linear Algebra for Engineering	TUT		WS/SS	4

Workload and credit points

Analysis I and Linear Algebra for Engineering Sciences (Lecture)	Multiplier	hours	Total
Time of presence	15.0	6.0h	90.0h
Preparation/postprocessing	15.0	2.0h	30.0h
			120.0h

Analysis I and Linear Algebra for Engineering Sciences (tutorial)	Multiplier	hours	Total
Time of presence	15.0	4.0h	60.0h
Preparation/postprocessing	15.0	2.0h	30.0h
			90.0h

Course-independent effort	Multiplier	hours	Total
Homework	15.0	6.0h	90.0h
Exam preparation	1.0	60.0h	60.0h
			150.0h

The effort of the module adds up to 360.0 hours. Thus the module comprises 12 credit points.

Description of the teaching and learning methods

Lecture (6 SWS), tutorial (4 SWS)

Requirements for participation / examination

Desirable conditions for participation in the courses:

none

Mandatory requirements for the registration for the module exam:

1.) *Certificate of proficiency Analysis I and Linear Algebra for Engineering Sciences*

Completion of the module

Grading:	Type of examination:	Language:	Duration/scope
graded	Written examination	German	: Not specified

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Registration for the exercises is done electronically. Further information is available at: www.moses.tu-berlin.de/tutorien/anmeldung/

Instructions on how to register for the module exam will be announced on the ISIS page of the lecture.

References, Scripts

Skript in Papierform:

unavailable

Script in electronic form:

Recommended literature:

Meyberg/Vachenauer: Higher mathematics 1 u 2, Springer textbook

Assigned study programmes

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2019/20 SS

2020 Biotechnology (Bachelor of Science)

BSc Biotechnology 2014

Module lists of the semesters: WS 2019/20 SS

2020 Brewing and Beverage Technology (Bachelor of Science)

Brewery and Beverage Technology (BSc) - BSc Brewery and Beverage Technology

2016 Module lists of the semesters: WS 2019/20 SS 2020

Computational Engineering Science (Information Technology in Mechanical Engineering) (Bachelor of Science) StuPO 2018

Module lists of the semesters: WS 2019/20 SS

2020 Electrical Engineering (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2019/20 SS

2020 Energy and Process Technology (Bachelor of Science)

BSc Energy and Process Technology 2014

Module lists of the semesters: WS 2019/20 SS

2020 Geotechnology (Bachelor of Science)

StuPO 20/02/2019

Module lists of the semesters: WS 2019/20 SS

2020 Food Technology (Bachelor of Science)

BSc Food Technology 2014

Module lists of the semesters: WS 2019/20 SS 2020

Mechanical Engineering (Bachelor of Science)

Mechanical Engineering (BSc) - StuPO 2018

Module lists of the semesters: WS 2019/20 SS

2020 Media Technology (Bachelor of Science)

(BSc) - StuPO 2018

Module lists of the semesters: WS 2019/20 SS 2020

Physical Engineering Science (Bachelor of Science)

StuPO 09.01.2012

Module lists of the semesters: WS 2019/20 SS

2020 Technical Environmental Protection (Bachelor of Science)

BSc Technical Environmental Protection 2014

Module lists of the semesters: WS 2019/20 SS

2020 Transportation (Bachelor of Science)

Transportation (BSc) - StuPO 2018

Module lists of the semesters: WS 2019/20 SS

2020 Materials Science (Bachelor of Science)

BSc Materials Science 2014

Module lists of the semesters: WS 2019/20 SS

2020 Business Informatics (Bachelor of Science)

BSc Information Systems StuPO 2015

Module lists of the semesters: WS 2019/20 SS

2020 Industrial Engineering and Management

(Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2019/20 SS 2020

Miscellaneous*Not specified*



Analysis II for Engineering Sciences

Title of the module:

Analysis II for Engineering Sciences

website:
https://www.math.tu-berlin.de/mathematik_service/
Credit points:

9

Secretary's office:
Not specified
Display language:

German

Person in charge:

Hammer, Matthias

contact person:
Not specified
E-mail address:

mathe-service@math.tu-berlin.de

Learning outcomes

The students should

- master the differential and integral calculus for functions with several real variables as a prerequisite for dealing with mathematical models in the engineering sciences
- have the methodological foundations for the mathematical foundation of the natural and engineering sciences, and
- have a sound knowledge of the scientific and mathematical content, principles and methods

Course contents

- Quantities and convergence in n-dimensional space
- Functions of several variables and continuity
- Linear mapping and differentiation
- Partial derivatives
- Coordinate systems
- Higher derivations and extreme values
- Classical differential operators
- Curve integrals
- Multidimensional integration
- Coordinate transformation
- Integration on surfaces
- Integral theorems of Gauss and Stokes

Module components

Courses	Type	Number	Rotation	SWS
Analysis II for Engineering Sciences	VL	3236 L 012	WS/SS	4
Analysis II for Engineering Sciences	UE	004	WS/SS	2

Workload and credit points

Analysis II for Engineering Sciences (Lecture)	Multiplier	hours	Total
Time of presence	15.0	4.0h	60.0h
Pre- and postprocessing	15.0	4.0h	60.0h
			120.0h
Analysis II for Engineering Sciences (exercise)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Pre- and postprocessing	15.0	6.0h	90.0h
			120.0h
Course-independent effort	Multiplier	hours	Total
Exam preparation	1.0	30.0h	30.0h
			30.0h

The effort of the module adds up to 270.0 hours. Thus the module comprises 9 credit points.

Description of the teaching and learning methods

Lecture, to the extent technically feasible using e-Chalk and other multimedia tools. Weekly homework. Practice in small groups.

Requirements for participation / examination

Desirable conditions for participation in the courses:

Strongly recommended: Analysis I and Linear Algebra for Engineering

Mandatory requirements for the module exam registration: 1)

Certificate of proficiency Analysis II for Engineering Sciences

Completion of the module

Grading:	Type of examination:	Language:	Duration/scope
graded	Written examination	German	: Not specified

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Registration for the exercise is done electronically. Further information is available at: www.moses.tu-berlin.de/tutorien/anmeldung/

References, Scripts**Skript in Papierform:**

verfügbar

Script in electronic form:

available

Recommended literature:

Meyberg/Vachenaer: Higher mathematics 2, Springer textbook

Assigned study programmes

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2019/20 SS

2020 Biotechnology (Bachelor of Science)

BSc Biotechnology 2014

Module lists of the semesters: WS 2019/20 SS

2020 Brewing and Beverage Technology (Bachelor of Science)

Brewery and Beverage Technology (BSc) - BSc Brewery and Beverage Technology

2016 Module lists of the semesters: WS 2019/20 SS 2020

Computational Engineering Science (Information Technology in Mechanical Engineering) (Bachelor of Science) StuPO 2018

Module lists of the semesters: WS 2019/20 SS

2020 Electrical Engineering (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2019/20 SS

2020 Energy and Process Technology (Bachelor of Science)

BSc Energy and Process Technology 2014

Module lists of the semesters: WS 2019/20 SS

2020 Geotechnology (Bachelor of Science)

StuPO 20/02/2019

Module lists of the semesters: WS 2019/20 SS

2020 Food Technology (Bachelor of Science)

BSc Food Technology 2014

Module lists of the semesters: WS 2019/20 SS 2020

Mechanical Engineering (Bachelor of Science)

Mechanical Engineering (BSc) - StuPO 2018

Module lists of the semesters: WS 2019/20 SS 2020

Media Informatics (Bachelor of Science)

BSc Media Informatics StuPO 2015

Module lists of the semesters: WS 2019/20 SS

2020 Media Technology (Bachelor of Science)

(BSc) - StuPO 2018

Module lists of the semesters: WS 2019/20 SS 2020

Physical Engineering Science (Bachelor of Science)

StuPO 09.01.2012

Module lists of the semesters: WS 2019/20 SS

2020 Computer Engineering (Bachelor of Science)

BSc Computer Engineering StuPO 2015 Module

lists of the semesters: WS 2019/20 SS 2020

Technical Environmental Protection (Bachelor of

Science) BSc Technical Environmental Protection 2014

Module lists of the semesters: WS 2019/20 SS

2020 Transportation (Bachelor of Science)

Transportation (BSc) - StuPO 2018

Module lists of the semesters: WS 2019/20 SS

2020 Materials Science (Bachelor of Science)

BSc Materials Science 2014

Module lists of the semesters: WS 2019/20 SS

2020 Industrial Engineering and Management

(Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2019/20 SS 2020

Miscellaneous*Not specified*



Fundamentals of road design and road construction

Title of the module:

Fundamentals of road design and road construction

website:
<http://www.strassenplanung.tu-berlin.de>
Credit points:

3

Secretary's office:

TIB 3/3-3

Display language:

German

Person in charge:

Judge, Thomas

contact person:

Gehrke, Marvin

E-mail address:

thomas.richter.1@tu-berlin.de

Learning outcomes

After successful completion of the module, the students will know the basics of the requirements for the use of road space within built-up areas, the routing elements for roads outside built-up areas and the corresponding elements of noise protection and drainage. They can calculate the coefficient of adhesion and the braking distance under different circumstances and determine the stress and duration of a road due to weather conditions and traffic composition.

Course contents

During the course, students learn the basic knowledge of designing road traffic systems. Basic contents concerning claims of use and drainage as well as immission control are covered. In addition, the driving dynamics and the routing of rural roads are treated and calculated. This includes the frictional connection between vehicle and road surface. Lectures and exercises also cover road construction with the basics of design calculation and material use as well as the stress duration of a road due to the construction of the superstructure.

Module components

Courses	Type	Number	Rotation	SWS
Fundamentals of road design and road construction	IV	0533 L 306	WS	2

Workload and credit points

Basics of road design and road construction (Integrated)	Multiplier	hours	Total
Present time	15.0	2.0h	30.0h
Pre- and postprocessing	15.0	1.0h	15.0h
Exam preparation	15.0	3.0h	45.0h
			90.0h

The effort of the module adds up to 90.0 hours. Thus the module comprises 3 credit points.

Description of the teaching and learning methods

In the exercises the students work on calculation tasks and application examples. They acquire the theoretical knowledge in the lectures.

Requirements for participation / examination

Desirable conditions for participation in the courses:

The module can only be taken if the module "Basics of Road Engineering" has not already been attended or completed!

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Grading:	Type of examination:	Language:	Duration/scope
graded	Written examination	German	: 90 minutes

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Information about the course and the exam registration under: www.strassenplanung.tu-berlin.de

References, Scripts

Skript in Papierform:

unavailable

Script in electronic form:

Recommended literature:

RAL 2012 - Guidelines for the construction of rural roads
RASt 2006 - Guidelines for the construction of urban roads

Assigned study programmes

This module is used on the following module lists: Civil

Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2019/20 SS

2020 Bautechnik (Lehramt) (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2019/20 SS

2020 Industrial Engineering and Management

(Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2019/20 SS

2020 Industrial Engineering and Management (Master

of Science)

StuPO 2015

Module lists of the semesters: WS 2019/20 SS 2020

Miscellaneous

Not specified



Fundamentals of rail transport

Title of the module:

Fundamentals of rail transport

Credit points:

6

Person in charge:

Milius, Birgit

website:

https://www.railways.tu-berlin.de/menue/studies_and_teaching/teaching_offers/basics_of_the_rail_train_company/

Secretary's office:

SG 18

contact person:

Frederick, John

E-mail address:

birgit.milius@tu-berlin.de

Display language:

German

Learning outcomes

Knowledge: After successful completion of the module, the students have the basic knowledge as well as the system-specific advantages and disadvantages of railways. This includes both design and operational knowledge. The students are therefore qualified to give qualified assessments of the railway system. This includes the topics of routing and design, railway operation, construction, control and safety

technology as well as planning and financing. Skills: You are able to

- to correctly estimate the scope of solutions for railway-specific problems
- carry out basic route and timetable calculations

to present the control and safety requirements for railway systems Competencies: You have the necessary competencies

- for the assessment of basic railway-specific problems
- for processing project tasks in a team
- for the presentation of railway-specific topics
- for the written preparation of project results

Course contents

Lecture parts:

- System characteristics, historical development (beginnings, railway reform, regionalisation, current European development)
- Basics of planning (mobility, competition with other modes of transport, planning process, federal transport infrastructure planning, important rail projects)
- Fundamentals of railway operation (braking, driving dynamics, safety philosophy, safety technology)
- Fundamentals of track design (wheel-rail system, ballasted track, slab track, switches)
- Basics of the design (routing elements, stations)

Practice parts:

- Basic railway-specific calculation (travel times, superelevation, sinusoidal run)
- Elaboration of a railway-specific lecture by introducing the system understanding gained in the lecture

Module components

Courses	Type	Number	Rotation	SWS
Fundamentals of rail transport	IV	0533 L 197	WS/SS	4

Workload and credit points

Fundamentals of Rail Transport (Integrated Event)	Multiplier	hours	Total
Time of presence	15.0	4.0h	60.0h
Preparation/postprocessing	15.0	8.0h	120.0h
			180.0h

The effort of the module adds up to 180.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

In the integrated course, the necessary specialist knowledge will be imparted on the one hand, and on the other hand the students will prepare and present papers on special topics in small groups. During the course, some exercises will be worked on. Lectures:

- Frontal teaching with presentation of the contents - Invoices within the course

Requirements for participation / examination

Desirable conditions for participation in the courses:

- a) compulsory: introduction to transport (preparation of units) b) desirable

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Benotung: benotet
Prüfungsform: Portfolio review
 100 points in total
Language: German

Clef:

Note:	1.0	1.3	1.7	2.0	2.3	2.7	3.0	3.3	3.7	4.0
Points:	95.0	90.0	85.0	80.0	75.0	70.0	65.0	60.0	55.0	50.0

Test description:

Not specified

Audit elements	Category	Points	Duration/scope
Presentation	flexible	2	<i>Not specified</i>
Written elaboration	flexible	2	<i>Not specified</i>
Written performance review	in writing	2	75 minutes

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Within the first four weeks after the start of the lecture period, registration for examinations is required via QISPOS (compulsory elective subject) or in writing in the Examinations Office (if enrolled as a free elective subject). Dates for the presentation and submission of the written paper as well as for the written performance assessment are indicated in the lectures.

References, Scripts

Skript in Papierform:

unavailable

Script in electronic form:

Recommended literature:

Trade journals: Eisenbahntechnische Rundschau, Der Eisenbahningenieur, Signal und Draht, Internationales Verkehrswesen, Der Nahverkehr, Eisenbahn Revue International

Fiedler: Railway industry, ISBN 3-8041-1612-4

Pachl: systems engineering of rail transport, ISBN 3-519-26383-1

Assigned study programmes

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Economics (Bachelor of Science)

StuPO 2008

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Automotive Engineering (Teaching profession) (Master of Education)

Core subject StuPO 2016

Module lists of the semesters: WS 2019/20 SS

2020 Automotive Engineering (Teaching profession)

(Master of Education)

Double StuPO 2016

Module lists of the semesters: WS 2019/20 SS

2020 Automotive engineering (teaching profession)

(Bachelor of Science)

Core subject StuPO 2016

Module lists of the semesters: WS 2019/20 SS

2020 Automotive engineering (teaching profession)

(Bachelor of Science)

Double StuPO 2016

Module lists of the semesters: WS 2019/20 SS 2020

Sociology of technical science (Bachelor of Arts)

StuPO (May 7, 2014)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Technomathematics (Bachelor of Science)

Bachelor Technomathematics 2014

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS 2020

Transportation (Bachelor of Science)

StuPO 2009

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Transportation (Bachelor of Science)

Transportation (BSc) - StuPO 2018

Module lists of the semesters: SS 2019 WS 2019/20 SS

2020 Economics (Bachelor of Science)

StuPo 2018

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Industrial Engineering and Management (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Industrial Engineering (Master of Science)

StuPO 2015

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS 2020

Suitable courses of study: - Transportation (Bachelor, Direction Planning and Operation / Automotive Engineering) - Industrial Engineering and Management (Bachelor, Direction Transportation) - Economics - Computer Science - Sociology Technical Sciences - Geography Basis for all courses at the Department of Railway Track and Railway Operation (v.a.): - Railway operation - Design of installations of track-guided transport systems - Information systems in public transport - Construction of railway tracks - Planning of track-guided transport systems - Planning and operation of public transport - Production planning in long-distance passenger transport - Rail freight transport

Miscellaneous*Not specified*



Kinematics and dynamics

Title of the module:

Kinematics and dynamics

website:*Not specified***Credit points:**

9

Secretary's office:

C 8-4

Display language:

German

Person in charge:

Popov, Valentine

contact person:

Popov, Valentine

E-mail address:

juliane.wallendorf@tu-berlin.de

Learning outcomes

The following skills are to be developed among students of technical mechanics:

Basic knowledge in technical mechanics, which facilitates and promotes the attendance of further courses in the bachelor and master studies.

The basic knowledge in technical mechanics to be imparted in the basic studies should ensure the ability to work in order to enable education and training throughout the entire working life.

However, the skills of students should not be limited to the theoretical penetration of problems in mechanics, but the ability to calculate and solve concrete and practical engineering problems is also encouraged.

The ability to verify own results and to clearly recognize the application limits of the models used is to be achieved as a basis for the professional reliability of the engineers to be trained. For this purpose a deeper understanding of the necessary basic material of mechanics must be achieved.

Students are introduced to the basics of model building.

The basic knowledge in technical mechanics enables students to recognize analogies to complex technical constructions and to other fields of study and to apply this knowledge there.

Course contents

Stability (buckling).

Basics of kinematics, inertial forces and moments, work, power, energy, momentum, angular momentum; centre of gravity theorem and principle of angular momentum, elastic and non-elastic shocks

Sliding friction.

The motion of the rigid body (angular velocity, instantaneous pole, inertia tensor, basic concepts of gyroscopic theory (Euler's equations)).

Theory of vibrations (free and forced vibrations, damping, resonance) . Vibrations of systems with two and more degrees of freedom.

Module components

Courses	Type	Number	Rotation	SWS
Kinematics and dynamics / mechanics II	VL	0530 L 021	WS/SS	4
Kinematics and dynamics / mechanics II	UE	0530 L 024	WS/SS	2

Workload and credit points

Kinematics and Dynamics / Mechanics II (Lecture)	Multiplier	hours	Total
Time of presence	15.0	4.0h	60.0h
Preparation/postprocessing	15.0	8.0h	120.0h
			180.0h

Kinematics and dynamics / mechanics II (exercise)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Preparation/postprocessing	15.0	4.0h	60.0h
			90.0h

The effort of the module adds up to 270.0 hours. Thus the module comprises 9 credit points.

Description of the teaching and learning methods

Lectures, exercises, optional large exercise, small group exercises (tutorials)

Requirements for participation / examination

Desirable conditions for participation in the courses:

a) Compulsory: Fresh or refreshed knowledge of mathematics (Abitur level) is required (the mathematics preparation course helps to refresh this knowledge).

b) desirable: knowledge of the fundamentals of differential and integral calculus is highly desirable, but will also be briefly introduced in the technical mechanics lectures. Corresponding skills should be acquired during the semester.

Mandatory requirements for the registration for the module exam:*Not specified***Completion of the module****Benotung:**

benotet

Prüfungsform:Portfolio review
100 points in total**Language:**

German

Clef:

This examination uses its own grading system (see examination form description).

Test description:

Portfolio examination consisting of three parts: two short question tests and a written test.

The examination is passed if at least 50% of the points have been achieved in all three parts of the examination.

There is no transfer of partial results to other semesters. If partial results are missing, the corresponding points are missing. A notification of sickness (no matter which part) results in the entire examination attempt being considered as not taken.

Clef Note /

Points 1.0 / 89-

100

1,3 / 85-88

1,7 / 80-84

2,0 / 76-79

2,3 / 72-75

2,7 / 67-74

3,0 / 63-66

3,3 / 59-62

3,7 / 54-58

4,0 / 50-53

Audit elements	Category	Points	Duration/scope
Short question test 1	in writing	20	60 minutes.
Short question test 2	in writing	20	60 minutes.
written test	in writing	60	Eighty-nine minutes.

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Registration for the small group exercises (tutorials) and for the exams is done via Moses account.

References, Scripts**Skript in Papierform:***unavailable***Script in electronic form:****Recommended literature:**

Gross, Hauger, Schröder, Wall: Technical Mechanics 3

Assigned study programmes

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: SS 2020

Computational Engineering Science (Information Technology in Mechanical Engineering) (Bachelor

of Science) StuPo 29.12.2009

Module lists of the semesters: SS 2020

Computational Engineering Science (Information Technology in Mechanical Engineering) (Bachelor

of Science) StuPO 2018

Module lists of the semesters: SS

2020 Mechanical Engineering (Bachelor

of Science)

StuPO 2009

Module lists of the semesters: SS

2020 Mechanical Engineering (Bachelor

of Science)

Mechanical Engineering (BSc) -

StuPO 2018 Module lists of the

semesters: SS 2020

Physical Engineering Science (Bachelor of Science)

StuPO 09.01.2012

Module lists of the semesters: SS

2020 Technomathematics (Bachelor of

Science)

Bachelor Technomathematics 2014

Module lists of the semesters: SS

2020

Transportation (Bachelor of Science)

StuPO 2009

Module lists of the semesters: SS

2020 Transportation (Bachelor of

Science)

Transportation (BSc) - StuPO 2018

Module lists of the semesters: SS

2020

Industrial Engineering and Management

(Bachelor of Science) StuPO 2015

Module lists of the semesters: SS 2020

Industrial Engineering and Management

(Master of Science)

StuPO 2015

Module lists of the semesters: SS 2020

Miscellaneous*Not specified*



Statics and elementary strength

Title of the module:

Statics and elementary strength

website:

Not specified

Credit points:

9

Secretary's office:

C 8-4

Display language:

German

Person in charge:

Popov, Valentine

contact person:

Popov, Valentine

E-mail address:

juliane.wallendorf@tu-berlin.de

Learning outcomes

The following skills are to be developed among students of technical mechanics:

Basic knowledge in mechanics, which facilitates and promotes the attendance of further courses in the bachelor and master studies.

The basic knowledge in mechanics to be imparted in the basic studies should ensure the ability to work in order to enable education and training throughout the entire working life.

The skills of the students should not only be limited to the theoretical penetration of problems in mechanics, but also the ability to calculate and solve concrete and practical engineering problems is promoted.

The ability to verify own results and to clearly recognize the application limits of the models used is to be achieved as a basis for the professional reliability of the engineers to be trained. For this purpose a deeper understanding of the necessary basic material of mechanics must be achieved.

Students are introduced to the basics of model building.

The basic knowledge in technical mechanics enables students to recognize analogies to complex technical constructions and to other fields of study and to apply this knowledge there.

Course contents

Statics: force and moment of force, equilibrium conditions, statics of rigid bodies, centre of gravity, statically determinate supporting structures, trusses, static friction.

Basics of elastostatics: Cut loads and stresses, displacements, distortions, Hooke's law, bending and torsion of bars, moments of inertia of areas, calculation of statically indeterminate systems, skewed bending, stress and deformation tensors, Moorscher stress circle, strength hypotheses, stability (buckling).

Module components

Courses	Type	Number	Rotation	SWS
Statics and Elementary Strength Theory/Mechanics I	VL	0530 L 011	WS/SS	4
Statics and Elementary Strength Theory/Mechanics I	UE	0530 L 014	WS/SS	2

Workload and credit points

Statics and Elementary Strength Theory/Mechanics I (Lecture)	Multiplier	hours	Total
Time of presence	15.0	4.0h	60.0h
Preparation/postprocessing	15.0	8.0h	120.0h
			180.0h

Statics and elementary strength theory/mechanics I (exercise)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Preparation/postprocessing	15.0	4.0h	60.0h
			90.0h

The effort of the module adds up to 270.0 hours. Thus the module comprises 9 credit points.

Description of the teaching and learning methods

Lectures, exercises, optional large exercise, small group exercises (tutorials)

Requirements for participation / examination

Desirable conditions for participation in the courses:

a) Compulsory: Fresh or refreshed knowledge of mathematics (Abitur level) is required (the mathematics preparation course helps to refresh this knowledge).

b) desirable: Knowledge of the fundamentals of differential and integral calculus is highly desirable, but will also be briefly introduced in the Technical Mechanics lectures. Corresponding skills should be acquired during the semester.

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Benotung:	Prüfungsform:	Language:
benotet	Portfolio review 100 points in total	German

Clef:

This examination uses its own grading system (see examination form description).

Test description:

Portfolio examination consisting of three parts: two short question tests and a written test. The examination is passed if at least 50% of the points have been achieved in all three parts of the examination. There is no transfer of partial results to other semesters. If partial results are missing, the corresponding points are missing. A notification of sickness (no matter which part) results in the entire examination attempt being considered as not taken.

Clef Note /
Points 1.0 / 89-
100
1,3 / 85-88
1,7 / 80-84
2,0 / 76-79
2,3 / 72-75
2,7 / 67-71
3,0 / 63-66
3,3 / 59-62
3,7 / 54-58
4,0 / 50-53

Audit elements	Category	Points	Duration/scope
Short question test 1	in writing	20	60 minutes.
Short question test 2	in writing	20	60 minutes.
written test	in writing	60	Eighty-nine minutes.

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Registration for the small group exercises (tutorials) and for the exams is done via Moses account.

References, Scripts**Skript in Papierform:**

unavailable

Script in electronic form:**Recommended literature:**

Gross, Hauger, Schnell: Technical Mechanics 1. Schnell, Gross, Hauger: Technical Mechanics 2.

Assigned study programmes

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)
Module lists of the semesters: SS

2020 Bautechnik (Lehramt) (Bachelor of

Science)

StuPO 2015
Module lists of the semesters: SS

2020 Bautechnik (Lehramt) (Master of

Education)

StuPO 2015
Module lists of the semesters: SS 2020

Computational Engineering Science (Information Technology in Mechanical Engineering) (Bachelor

of Science) StuPo 29.12.2009

Module lists of the semesters: SS 2020

Computational Engineering Science (Information Technology in Mechanical Engineering) (Bachelor

of Science) StuPO 2018

Module lists of the semesters: SS

2020 Mechanical Engineering (Bachelor

of Science)

StuPO 2009
Module lists of the semesters: SS

2020 Mechanical Engineering (Bachelor

of Science)

Mechanical Engineering (BSc) -
StuPO 2018 Module lists of the
semesters: SS 2020

Natural Sciences in the Information Society (Bachelor of Science) StuPO

2013

Module lists of the semesters: SS 2020

Natural Sciences in the Information Society (Bachelor of Science) StuPO

2017

Module lists of the semesters: SS 2020

Natural Sciences in the Information Society (Bachelor of Science) StuPO

2018

Module lists of the semesters: SS 2020

Physical Engineering Science (Bachelor of Science)

StuPO 09.01.2012

Module lists of the semesters: SS 2020

Sociology technical direction (Bachelor of Arts) StuPO (May 7,

2014)

Module lists of the semesters: SS

2020 Technomathematics (Bachelor of

Science)

Bachelor Technomathematics 2014
Module lists of the semesters: SS
2020

Transportation (Bachelor of Science)

StuPO 2009

Module lists of the semesters: SS

2020 Transportation (Bachelor of

Science)

Transportation (BSc) - StuPO 2018
Module lists of the semesters: SS
2020

Industrial Engineering and Management

(Bachelor of Science) StuPO 2015

Module lists of the semesters: SS 2020

Miscellaneous

Not specified



Basics of design and construction

Title of the module:

Basics of design and construction

website:
<http://www.ek-verbundstrukturen.tu-berlin.de>
Credit points:

6

Secretary's office:

TIB 1-B 11

Display language:

German

Person in charge:

Schmid, Volker

contact person:

Gräßler, Sarah

E-mail address:
secretariat@ek-verbundstrukturen.tu-berlin.de

Learning outcomes

Mediation of first basics of designing and constructing load-bearing structures, first basics of structural design and dimensioning of simple timber structures as well as training of the ability to display. In this module, the knowledge acquired in the basics of structural theory and the theoretical subjects will be applied to the design and construction of structures for the first time. The first and most important step in planning a structure is the design with the objectives of technological, social and environmental sustainability. Students are introduced to this conceptual step and are then able to design a structure from the given boundary conditions and determine its component dimensions. In addition, the students learn to express themselves in drawings, so that they are able to process the calculated building in the form of architectural drawings and present it in the form of construction drawings. They are also introduced to the creation of the different types of plans. This module, the module Fundamentals of Structural Engineering and the modules Structural Engineering provide the basics for the planning of a structure in the basic project as well as for the advanced modules of the technical studies and the master studies, which require in-depth theoretical knowledge.

Professional competence 30%

Methodological competence 40%

Systems competence 15%

Social Competence 15

Course contents

Display:

A readable drawing, a readable plan transports information, makes the idea readable. The following topics are covered:

Freehand drawing, descriptive geometry, contents of engineering plans

Design and construction:

- Definition of the specific boundary conditions of the design: Tangible criteria such as structure and design, effects on load-bearing structures, component dimensions and load-bearing capacity as well as sustainability in its aspects of serviceability, functionality, well-being, environmental compatibility and economy.
- Evaluation of possible design solutions
- Planning basics: planning procedure, structural design, safety concepts, standards, HOAI §64

Woodwork:

- Design, construction and dimensioning of simple wooden constructions
- ecological aspects and sustainability of wooden constructions

Module components

Courses	Type	Number	Rotation	SWS
Basics of design and construction	IV	06312500L01	WS	4
Basics of design and construction	TUT	06312500L02	WS	1

Workload and credit points

Basics of design and construction (integrated)	Multiplier	hours	Total
Processing of partial services	15.0	4.0h	60.0h
Time of presence	15.0	4.0h	60.0h
Pre- and postprocessing	15.0	2.0h	30.0h
			150.0h
Basics of design and construction (tutorial)	Multiplier	hours	Total
Participation in the tutorials	15.0	2.0h	30.0h
			30.0h

The effort of the module adds up to 180.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

In the lecture and exercise parts of the integrated course, the teaching content is presented in detail and applied in example tasks. Self-study or follow-up work on the material is supplemented by tutorials. Students must complete two graded homework assignments and write two tests.

Requirements for participation / examination

Desirable conditions for participation in the courses:

Module: Basics of the structural theory

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Benotung:	Prüfungsform:	Language:
benotet	Portfolio review 100 points in total	German

Clef:

This examination uses its own grading system (see examination form description).

Test description:

The maximum possible number of points from the semester-accompanying partial performances is 100 points in total. The points achieved in the partial performances are added up at the end of the semester. Grading is based on the total number of points achieved. At least 50 points are required to pass the module.

Audit elements	Category	Points	Duration/scope
Homework Presentation methods	in writing	20	<i>Not specified</i>
homework design planning	in writing	25	<i>Not specified</i>
Draft presentation	verbally	5	<i>Not specified</i>
Test 1	in writing	25	60 minutes.
Test 2	in writing	25	60 minutes.

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Registration for the examination takes place at the responsible office of the central university administration, usually via the QUISPOS electronic registration system.

References, Scripts

Skript in Papierform:

unavailable

Skript in electronic form:

Assigned study programmes

This module is used on the following module lists: Civil

Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2019/20 SS

2020 Bautechnik (Lehramt) (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2019/20 SS

2020 Industrial Engineering and Management

(Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2019/20 SS

2020 Industrial Engineering and Management (Master

of Science)

StuPO 2015

Module lists of the semesters: WS 2019/20 SS 2020

Miscellaneous

Not specified



Structural analysis III

Title of the module:

Structural analysis III

website:<http://www.statik.tu-berlin.de>**Credit points:**

6

Secretary's office:

TIB 1-B 5

Display language:

German

Person in charge:

Petryna, Yuriy

contact person:

Pretzke, Alexandra

E-mail address:info@statik.tu-berlin.de

Learning outcomes

The students are able to apply non-linear methods for the static calculation of structures. They can use the basics in theory and application to design beam structures according to Theory II. They can use the basics in theory and application to calculate beam structures according to theory of the second order and according to the yield theory and to determine the load in the failure state. The students are able to correctly interpret the geometrically and physically non-linear load-bearing behaviour including stability behaviour and to critically evaluate the results of non-linear static calculations.

Professional competence 40%

Competence in methods 30%

Systems competence 20%

Social Competence 10

Course contents

Failure states of beam structures are discussed and the formulation of stress and stability problems of the statics are derived from this. The basic equations of the beam theory according to Theory II. Order are derived and the manual calculations in the context of the displacement method for geometrically non-linear problems are learned, in particular the determination of buckling loads and buckling shapes for frameworks in the context of the rotation angle method.

The influence of the inelastic material behaviour on the load-bearing capacity of beam structures is recorded with the yield theory and the nonlinear calculation of loads is learned manually by applying the load sets and the method of successive load increase. The determination of the torque-curvature relationship for rectangular cross-sections of reinforced concrete beams is explained and their application for the load-bearing capacity calculation is learned. Subsequently, the basics of the computer-oriented displacement sizing method are explained using the example of the direct stiffness method for beam structures and applied by way of example.

Module components

Courses	Type	Number	Rotation	SWS
Structural analysis III	VL	06311200 L 31	SS	2
Structural analysis III	UE	06311200 L 32	SS	2

Workload and credit points

Structural Analysis III (Lecture)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Preparation/postprocessing	15.0	2.0h	30.0h
			60.0h
Structural analysis III (exercise)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Preparation/postprocessing	15.0	2.0h	30.0h
			60.0h
Course-independent effort	Multiplier	hours	Total
Exam preparation	1.0	60.0h	60.0h
			60.0h

The effort of the module adds up to 180.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

The teaching forms are lecture, exercise and independent preparation and follow-up of the learning material.

Requirements for participation / examination

Desirable conditions for participation in the courses:

completed modules "Structural Analysis I" and "Structural Analysis II"

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Grading:	Type of examination:	Language:	Duration/scope
graded	Written examination	German	: 120 minutes

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

The registration formalities can be found on the Internet at <http://www.statik.tu-berlin.de> under the item "Module Examinations". Further information is available from the secretariat at info@statik.tu-berlin.de or by telephone at (314) 72320.

References, Scripts**Skript in Papierform:**

unavailable

Script in electronic form:**Recommended literature:**

see lecture notes in the ISIS system

Assigned study programmes

This module is used on the following module lists: Civil

Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: SS 2019 WS 2019/20 SS

2020 Industrial Engineering and Management (Bachelor of

Science)

StuPO 2015

Module lists of the semesters: SS 2019 WS 2019/20 SS 2020

Miscellaneous

Not specified



Building Information Modeling: Basics and selected examples

Title of the module:

Building Information Modeling: Basics and selected examples

website:
<http://www.bauinformatik.tu-berlin.de>
Credit points:

6

Secretary's office:

TIB 1-B 8

Display language:

German

Person in charge:

Huhnt, Wolfgang

contact person:

Huhnt, Wolfgang

E-mail address:
wolfgang.huhnt@tu-berlin.de

Learning outcomes

The students learn the basics of Building Information Modeling. They acquire basic knowledge about the construction of parameterized building and structure models. They will develop the skills to independently create and check selected models, to use exchange formats with the aim of ensuring the continuity of the information flow in an exemplary manner and to evaluate the self-created models in an exemplary manner.

Professional competence: 35

Competence in methods: 35

Systems competence: 25 %

Social competence: 5

Course contents

- Basics of geometric modeling with parameterized objects
- Basics of Semantic Modeling
- Forms of cooperation
- Exemplary creation of models
- Exemplary evaluation of models

Module components

Courses	Type	Number	Rotation	SWS
Building Information Modeling: Basics and selected examples	IV	06311100L16	WS/SS	4

Workload and credit points

Building Information Modeling: Basics and selected examples	Multiplier	hours	Total
Integrated event Time of presence	15.0	4.0h	60.0h
			60.0h
Course-independent effort	Multiplier	hours	Total
Homework including the preparation of the presentations	3.0	30.0h	90.0h
Preparation/postprocessing	1.0	30.0h	30.0h
			120.0h

The effort of the module adds up to 180.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

Specialist content is partly presented in the events and partly worked out together using examples. The events take place in the seminar room and at the computer.

Requirements for participation / examination

Desirable conditions for participation in the courses:

Basics of object-oriented modelling, for example, acquired in the module "Basics of Construction Informatics"

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Benotung:

benotet

Prüfungsform:

 Portfolio review
100 points in total

Language:

German

Clef:

Note: 1.0 1.3 1.7 2.0 2.3 2.7 3.0 3.3 3.7 4.0
 Punkte: 95.0 90.0 85.0 80.0 75.0 70.0 65.0 60.0 55.0 50.0

Test description:

The examination consists of two homework assignments, each of which builds on the other and the results of which are to be presented to all participants in a presentation. In addition, a current publication must be presented in group work.

Audit elements	Category	Points	Duration/scope
Homework	practically	44	<i>Not specified</i>
Presentation	verbally	6	5 min
Homework	practically	44	<i>Not specified</i>
Presentation	verbally	6	5 min

Duration of the module

This module can be completed in one semester.

Maximum number of participants

The maximum number of participants is 20

Application formalities

Registration for the examination takes place at the responsible office of the central university administration, usually via the electronic registration system.

References, Scripts**Skript in Papierform:**

nicht verfügbar

Script in electronic form:

unavailable

Recommended literature:

Current literature is referred to in the courses.

Assigned study programmes

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 17.12.2008

Module lists of the semesters: WS 2017/18 SS 2018 WS

2018/19 Civil Engineering (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2017/18 SS

2018 Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Civil Engineering (Teaching profession) (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020 Bautechnik (Lehramt) (Master of Education)

StuPO 2015

Module lists of the semesters: WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020 Industrial Engineering (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Miscellaneous

Not specified



Engineering Masonry Construction

Title of the module:

Engineering Masonry
Construction

website:

Not specified

Credit points:

6

Secretary's office:

TIB 1-B 3

Display language:

German

Person in charge:

Vogdt, Frank Ulrich

contact person:

Not specified

E-mail address:

bauphysik@tu-berlin.de

Learning outcomes

The students acquire the basics of engineering masonry construction. The aim is for students to gain a basic understanding of the design and execution of engineering-designed masonry structures. After completion of the module, students are able to provide the required proof of load-bearing capacity and to plan construction details correctly.

Professional competence 50

Methodological competence 25 %

Systems competence 20 %

Social Competence 5

Course contents

- Stress (dead load, traffic load, wind load, etc.)
- Security Theory
- Principles of design (simplified / more precise procedure)
- Verification (wall-ceiling knots, thrust, buckling, basement walls, load introduction, etc.)
- Deformation and crack resistance
- Stiffening of buildings against horizontal loads
- Construction details

Module components

Courses	Type	Number	Rotation	SWS
Engineering Masonry Construction	IV		SS	4

Workload and credit points

Engineering Masonry Construction (Integrated Event)	Multiplier	hours	Total
Time of presence	15.0	4.0h	60.0h
Pre- and postprocessing	15.0	4.0h	60.0h
Preparation for the exam	1.0	60.0h	60.0h
			180.0h

The effort of the module adds up to 180.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

Not specified

Requirements for participation / examination

Desirable conditions for participation in the courses:

- Basics of design and construction
- Constructive civil engineering

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Grading:	Type of examination:	Language:	Duration/scope
graded	Written examination	German	: 120 minutes

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Not specified

References, Scripts

Skript in Papierform:

unavailable

Script in electronic form:

Assigned study programmes

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 17.12.2008

Module lists of the semesters: SS 2017 WS 2017/18 SS 2018 WS

2018/19 Civil Engineering (Bachelor of Science)

StuPO 2015

Module lists of the semesters: SS 2017 WS 2017/18 SS

2018 Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Bautechnik (Lehramt) (Master of Education)

StuPO 2015

Module lists of the semesters: SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020 Industrial Engineering (Master of Science)

StuPO 2015

Module lists of the semesters: SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Miscellaneous

Not specified



Numerical methods in civil engineering

Title of the module:

Numerical methods in civil engineering

website:
<http://www.bauinformatik.tu-berlin.de>
Credit points:

6

Secretary's office:

TIB 1-B 8

Display language:

German

Person in charge:

Huhnt, Wolfgang

contact person:

Huhnt, Wolfgang

E-mail address:
wolfgang.huhnt@tu-berlin.de

Learning outcomes

Students learn numerical methods and their possible applications for tasks in civil engineering. They deal with the computer-aided description and numerical calculation of the physical properties of structural facilities and systems in nature. They acquire a basic understanding for the mathematical formulation of the laws of behaviour and for its numerical calculation. They are able to solve simple tasks from the fields of numerical interpolation, numerical differentiation and numerical integration independently. They are also able to perform simple calculations using the finite element method.

Professional competence: 45

Competence in methods: 35

Systems competence: 15

Social competence: 5

Course contents

- Mathematische Beschreibungen des physikalischen Verhaltens von Bauwerken und Natursystemen an Examples
- Fundamentals of numerical interpolation, numerical differentiation and numerical integration
- Geometric and physical approximation with finite elements
- Components of a finite element model
- Exemplary application to civil engineering tasks

Module components

Courses	Type	Number	Rotation	SWS
Numerical methods in civil engineering	PR		SS	2
Numerical methods in civil engineering	VL	06311100 L 11	SS	2
Numerical methods in civil engineering	UE	06311100 L 12	SS	2

Workload and credit points

Numerical methods in civil engineering (practical course)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
			30.0h

Numerical methods in civil engineering (lecture)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
			30.0h

Numerical methods in civil engineering (exercise)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
			30.0h

Course-independent effort	Multiplier	hours	Total
Homework	2.0	15.0h	30.0h
Preparation/postprocessing (including exam preparation and written tests)	1.0	60.0h	60.0h
			90.0h

The effort of the module adds up to 180.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

Subject contents are presented in lectures. Specialist content is deepened in exercises using examples. The practical courses are conducted in small groups.

Requirements for participation / examination

Desirable conditions for participation in the courses:

Fundamentals of engineering informatics, for example acquired in the module "Fundamentals of Construction Informatics"

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Benotung:	Prüfungsform:	Language:
benotet	Portfolio review 100 points in total	German

Clef:

Note:	1.0	1.3	1.7	2.0	2.3	2.7	3.0	3.3	3.7	4.0
Punkte:	95.0	90.0	85.0	80.0	75.0	70.0	65.0	60.0	55.0	50.0

Test description:

The exam consists of two homework assignments and two written tests. The homework will be marked with 10 points each and the written tests with 40 points each. A total of at least 50 points are required to pass the module. Homework is handed out during the semester in which the module is offered.

Audit elements	Category	Points	Duration/scope
Homework	practically	10	<i>Not specified</i>
Test	in writing	40	75 min
Homework	practically	10	<i>Not specified</i>
Test	in writing	40	75 min

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Registration for the examination takes place at the responsible office of the central university administration, usually via the electronic registration system.

References, Scripts

Skript in Papierform:

unavailable

Script in electronic form:

Recommended literature:

Current literature is referred to in the courses.

Assigned study programmes

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 17.12.2008

Module lists of the semesters: WS 2017/18 SS 2018 WS

2018/19 Civil Engineering (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2017/18 SS

2018 Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Industrial Engineering and Management (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020 Industrial Engineering (Master of Science)

StuPO 2015

Module lists of the semesters: WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Miscellaneous

Not specified



Building Dynamics

Title of the module:

Building Dynamics

website:<http://www.statik.tu-berlin.de>**Credit points:**

6

Secretary's office:

TIB 1-B 5

Display language:

German

Person in charge:

Petryna, Yuriy

contact person:

Pretzke, Alexandra

E-mail address:info@statik.tu-berlin.de

Learning outcomes

The students are able to apply classical and numerical methods for the dynamic calculation of structures. They master dynamic modelling as well as the basics in theory and application in order to calculate dynamic stress states according to theory I. Order. Students are able to interpret and critically evaluate the results of simple dynamic calculations from an engineering point of view.

Expertise 50% of

Methodological competence 20%

Systems competence 20%

Social Competence 10

Course contents

- Fundamentals of dynamic behaviour and basic equations, classification of dynamic models
- Simple and generalized single mass transducers, structural models as single mass transducers
- Harmonic, periodic and arbitrary excitation, solution methods in frequency and time domain
- Vibration resonances and vibration isolation, basics of vibration measurements
- Fourier analysis, discrete Fourier transform, discrete systems with several degrees of freedom
- Modal analysis, natural frequencies and vibration modes, modal equations of motion
- Rayleigh method for determining the first natural frequency, practical examples

Module components

Courses	Type	Number	Rotation	SWS
Dynamics I	VL	06311200 L 41	WS	2
Dynamics I	UE	06311200 L 42	WS	2

Workload and credit points

Dynamics I (Lecture)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Pre- and postprocessing	15.0	2.0h	30.0h
			60.0h

Dynamics I (exercise)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Pre- and postprocessing	15.0	2.0h	30.0h
			60.0h

Course-independent effort	Multiplier	hours	Total
Exam preparation	1.0	60.0h	60.0h
			60.0h

The effort of the module adds up to 180.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

The teaching forms are lecture, exercise and independent preparation and follow-up of the learning material.

Requirements for participation / examination

Desirable conditions for participation in the courses:

completed modules "Kinematics and Dynamics", "Structural Analysis I" and "Structural Analysis II"

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Grading:	Type of examination:	Language:	Duration/scope
graded	Written examination	German	: 120 minutes

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

The registration formalities can be found on the Internet at <http://www.statik.tu-berlin.de> under the item "Module Examinations". Further information is available from the secretariat at info@statik.tu-berlin.de or under (314) 72320.

References, Scripts

Skript in Papierform:

unavailable

Script in electronic form:

Recommended literature:

see lecture notes in the ISIS system

Assigned study programmes

This module is used on the following module lists: Civil

Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: SS 2019 WS 2019/20 SS

2020 Industrial Engineering and Management (Bachelor of Science)

StuPO 2015

Module lists of the semesters: SS 2019 WS 2019/20 SS

2020 Industrial Engineering (Master of Science)

StuPO 2015

Module lists of the semesters: SS 2019 WS 2019/20 SS 2020

Miscellaneous

Not specified



Building Materials and Construction Chemicals I

Title of the module:

Building Materials and
Construction Chemicals I

website:

<http://www.baustoffe.tu-berlin.de/>

Credit points:

6

**Secretary's
office:**

TIB 1-B 4

Display language:

German

Person in charge:

Stephan, Dietmar Aloys

contact person:

Stephan, Dietmar Aloys

E-mail address:

stephan@tu-berlin.de

Learning outcomes

The students are able to name the basic building materials and building chemical products as basic knowledge for other civil engineering subjects, to define technical terms and to apply them in the right context. They are able to present the possibilities of production, the characteristic material properties and the possible applications of the building materials and, when confronted with each other, independently derive the advantages and disadvantages of the materials. In this module, students acquire advanced knowledge of the most important groups of building materials and know and evaluate the possibilities and limits of their use.

Course contents

- Building material parameters
- Rocks
- Aggregates for mineral building materials
- Binders in the building industry
- Cement
- Concrete
- Mortar (masonry mortar, plaster, screed)
- Wall building materials, masonry
- Insulating materials
- Construction metals: steel, cast iron, non-ferrous metals
- Wood and wood-based materials
- Plastics
- Internship to get to know building materials
- Internship Aggregates
- Practical course concrete

Module components

Courses	Type	Number	Rotation	SWS
Building Materials and Construction Chemicals I	VL		WS/SS	3
Building Materials and Construction Chemicals I	PR		WS/SS	1
Building Materials and Construction Chemicals I	UE		WS/SS	1

Workload and credit points

Building Materials and Construction Chemistry I (Lecture)	Multiplier	hours	Total
Time of presence	15.0	3.0h	45.0h
Preparation/postprocessing	15.0	6.0h	90.0h
			135.0h
Building Materials and Construction Chemistry I (Internship)	Multiplier	hours	Total
Time of presence	4.0	2.0h	8.0h
Preparation/postprocessing	4.0	3.0h	12.0h
			20.0h
Building materials and building chemistry I (exercise)	Multiplier	hours	Total
Time of presence	4.0	2.0h	8.0h
Preparation/postprocessing	4.0	4.0h	16.0h
			24.0h

The effort of the module adds up to 179.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

The contents to be taught are presented in lectures and deepened in self-study. For their own control, students are supported by ISIS-Test. The knowledge is deepened through lecture hall exercises and practical training.

Requirements for participation / examination

Desirable conditions for participation in the courses:

None

Mandatory requirements for the module exam registration: 1) Proof
of performance in building materials and building chemistry I

Completion of the module

Grading:	Type of examination:	Language:	Duration/scope
graded	Written examination	German	: 90 minutes

Duration of the module

This module can be completed in one semester.

Maximum number of participants

The maximum number of participants is 220

Application formalities

Registration for the event takes place within the first two weeks of lectures via the ISIS platform.

References, Scripts

Skript in Papierform:

unavailable

Script in electronic form:

Additional information:

The electronic lecture notes can be accessed via ISIS for the courses.

Recommended literature:

Concrete technical data (online at most cement manufacturers)

Dietmar Stephan, Baustoffchemie, Beuth, 7th edition 2014, 224 S

Günther Neroth et al., Wendehorst Baustoffkunde (available as e-book in university

library) Kompendium Zement+Beton, edition 2002 for download at www.vdz-online.de

Roland Benedix, Bauchemie (available as e-book in university library)

Assigned study programmes

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS

2018 Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Civil Engineering (Teaching profession) (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020

Transportation (Bachelor of Science)

StuPO 2009

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Industrial Engineering and Management (Bachelor of Science)

StuPO 2015

Module lists of the semesters: SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Miscellaneous

Not specified



Building Materials and Construction Chemicals II

Title of the module:

Building Materials and
Construction Chemicals II

website:

<http://www.baustoffe.tu-berlin.de/>

Credit points:

3

**Secretary's
office:**

TIB 1-B 4

Display language:

German

Person in charge:

Stephan, Dietmar Aloys

contact person:

Stephan, Dietmar Aloys

E-mail address:

stephan@tu-berlin.de

Learning outcomes

The Building Materials and Construction Chemicals II module builds on the Building Materials and Construction Chemicals I module. Students are able to explain the basic relationships of corrosion on metals and mineral building materials and are familiar with the production of the characteristic properties of building materials such as glass, ceramics and bitumen. Students can name the exposure classes, derive basic relationships between chemical-structural properties and durability and develop durable concrete formulations on this basis. The functional principle and the applicability of various destructive and non-destructive testing methods are mastered theoretically, as well as the basics for the maintenance and repair of buildings.

Course contents

- Principles of corrosion
- Corrosion and corrosion protection of construction metals
- Exposure classes of concrete
- Durability of concrete
- Special concretes
- Non-destructive testing methods
- Maintenance and repair of buildings
- Bitumen and building materials containing bitumen
- Glass and ceramics

Module components

Courses	Type	Number	Rotation	SWS
Building Materials and Construction Chemicals II	VL		SS	3
Building Materials and Construction Chemicals II	UE		SS	1

Workload and credit points

Building Materials and Construction Chemistry II (Lecture)	Multiplier	hours	Total
Time of presence	13.0	2.0h	26.0h
Preparation/postprocessing	13.0	3.0h	39.0h
			65.0h

Building materials and building chemistry II (exercise)	Multiplier	hours	Total
Time of presence	5.0	2.0h	10.0h
Preparation/postprocessing	5.0	3.0h	15.0h
			25.0h

The effort of the module adds up to 90.0 hours. Thus the module comprises 3 credit points.

Description of the teaching and learning methods

The contents to be taught are presented in lectures and deepened in self-study. The execution of exercises under ISIS consolidates the knowledge and enables independent application. For their own control, students are supported by the implementation of ISIS-Test.

Requirements for participation / examination

Desirable conditions for participation in the courses:

The completion of the module Building Materials and Construction Chemistry I is recommended.

Mandatory requirements for the module exam registration: 1) Proof

of performance in building materials and building chemistry II

Completion of the module

Grading: graded	Type of examination: Written examination	Language: German	Duration/scope: 90 minutes
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Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Registration for the course takes place within the first two weeks of lectures via the ISIS platform.

References, Scripts

Skript in Papierform:

unavailable

Script in electronic form:

Additional information:

The electronic lecture notes can be accessed via ISIS for the courses.

Recommended literature:

Concrete technical data (online at most cement manufacturers)

Dietmar Stephan, Baustoffchemie, Beuth, 7th edition 2014, 224 S

Günther Neroth et al., Wendehorst Baustoffkunde (available as e-book in university

library) Kompendium Zement+Beton, edition 2002 for download at www.vdz-online.de

Roland Benedix, Bauchemie (available as e-book in university library)

Assigned study programmes

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS

2018 Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Civil Engineering (Teaching profession) (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020

Civil Engineering (Teaching profession)

(Master of Education) StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020

Industrial Engineering and Management

(Bachelor of Science) StuPO 2015

Module lists of the semesters: SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Industrial Engineering and Management

(Master of Science) StuPO 2015

Module lists of the semesters: SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Miscellaneous

Not specified



Basics of building informatics

Title of the module:

Basics of building informatics

website:<http://www.bauinformatik.tu-berlin.de>**Credit points:**

6

Secretary's office:

TIB 1-B 8

Display language:

German

Person in charge:

Huhnt, Wolfgang

contact person:

Huhnt, Wolfgang

E-mail address:wolfgang.huhnt@tu-berlin.de

Learning outcomes

Students learn the basics of solving civil engineering problems with the computer and acquire skills to solve smaller civil engineering tasks independently with the computer. On the one hand, these basic skills are necessary for the understanding of the software tools used in civil engineering. On the other hand, these basic skills are necessary for those engineers who want to participate in the development and extension of application programs for civil engineering.

Professional competence: 40%

Competence of methods: 35%

Systems competence: 20%

Social competence: 5%.

Course contents

- Object-oriented concepts for the description of civil engineering tasks
- Implementation of object-oriented concepts in an object-oriented programming language
- Algorithms
- Data structures in civil engineering
- Classification Structures
- Sorting and search algorithms
- Basics of graphical user interfaces
- Exemplary application to civil engineering tasks

Module components

Courses	Type	Number	Rotation	SWS
Basics of building informatics	VL		WS	2
Basics of building informatics	PR		WS	2
Basics of building informatics	UE		WS	2

Workload and credit points

Basics of Building Informatics (Lecture)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
			30.0h
Basics of construction informatics (practical course)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
			30.0h
Basics of building informatics (exercise)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
			30.0h
Course-independent effort	Multiplier	hours	Total
Homework	3.0	15.0h	45.0h
Preparation/postprocessing (including exam preparation and written test)	1.0	45.0h	45.0h
			90.0h

The effort of the module adds up to 180.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

Subject contents are presented in lectures. Specialist content is deepened in exercises using examples. The practical courses are carried out in small groups on the computer.

Requirements for participation / examination

Desirable conditions for participation in the courses:

none

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Benotung:	Prüfungsform:	Language:
benotet	Portfolio review 100 points in total	German

Clef:

Note:	1.0	1.3	1.7	2.0	2.3	2.7	3.0	3.3	3.7	4.0
Punkte:	95.0	90.0	85.0	80.0	75.0	70.0	65.0	60.0	55.0	50.0

Test description:

The exam consists of three homework assignments and a written test.

Audit elements	Category	Points	Duration/scope
Homework	practically	10	<i>Not specified</i>
Homework	practically	10	<i>Not specified</i>
Homework	practically	10	<i>Not specified</i>
Test	in writing	70	75 min

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Registration for the examination takes place at the responsible office of the central university administration, usually via the electronic registration system.

References, Scripts

Skript in Papierform:

unavailable

Script in electronic form:

Recommended literature:

Current literature is referred to in the courses.

Assigned study programmes

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2017/18 SS

2018 Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Civil Engineering (Teaching profession) (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020 Bautechnik (Lehramt) (Master of Education)

StuPO 2015

Module lists of the semesters: WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Miscellaneous

Not specified



Fundamentals of urban water management

Title of the module:

Fundamentals of urban water management

Credit points:

3

Person in charge:

Barjenbruch, Matthias

website:

Not specified

Secretary's office:

Not specified

contact person:

Not specified

Display language:

German

E-mail address:

lehre@siwawi.tu-berlin.de

Learning outcomes

The training provides students with scientific basics in the field of urban water management. Students are thus enabled to design and plan simple water management systems.

Professional competence 50

Competence in methods 30 %

Systems competence 20 %

Social competence 0 %

Course contents

In this lecture, the basic stations of water supply and wastewater disposal/treatment are presented and explained (demand, extraction, quality, extraction, storage and distribution of drinking water, discharge and treatment of wastewater).

In the practice part of the course, concrete examples are used to calculate and dimension plants, e.g. drinking water wells, storage of drinking water, sewerage systems and selected methods of wastewater treatment.

Module components

Courses	Type	Number	Rotation	SWS
Fundamentals of urban water management	IV		SS	2

Workload and credit points

Fundamentals of urban water management (Integrated course)	Multiplier	hours	Total
Time of presence	7.0	4.0h	28.0h
Preparation and follow-up incl. exam preparation	15.0	4.0h	60.0h
			88.0h

The effort of the module adds up to 88.0 hours. Thus the module comprises 3 credit points.

Description of the teaching and learning methods

Not specified

Requirements for participation / examination

Desirable conditions for participation in the courses:

Not specified

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Grading:

graded

Type of examination:

Written examination

Language:

German

Duration/scope

:
Not specified

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Not specified

References, Scripts

Skript in Papierform:

nicht verfügbar

Skript in electronic form:

unavailable

Assigned study programmes

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS

2018 Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Civil Engineering (Teaching profession) (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020

Civil Engineering (Teaching profession)

(Master of Education) StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020

Economics (Bachelor of Science)

StuPO 2008

Module lists of the semesters: SS 2016

Industrial Engineering and Management

(Bachelor of Science)

StuPO 2015

Module lists of the semesters: SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Industrial Engineering and Management

(Master of Science) StuPO 2015

Module lists of the semesters: SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Miscellaneous

Not specified



Fluid Mechanics

Title of the module:

Fluid Mechanics

Credit points:

6

Person in charge:

Hinkelmann, Reinhard

Secretary's office:

TIB 1-B 14

contact person:

Sailor, Sandra

website:<http://www.wahyd.tu-berlin.de>**Display language:**

German

E-mail address:reinhard.hinkelmann@tu-berlin.de

Learning outcomes

This module teaches the fluid mechanics necessary for the civil engineer.

Basic knowledge as well as the ability to implement it in simple practical engineering application examples. Fluid mechanics is the basic subject for water management.

Fluid mechanics provides an introduction to the laws of motion of liquids and gases, whereby the flows of the fluids water and air and the forces acting on structures are of particular importance to the civil engineer.

Course contents

Fluid properties, hydrostatics, kinematics and kinetics of spatial flow, conservation laws (at the control volume, Euler, Navier-Stokes, Reynolds), potential, groundwater and boundary layer flows, pipe and channel flows, flow forces, similarity theory

Module components

Courses	Type	Number	Rotation	SWS
Fluid Mechanics	VL	06311900 L 11	WS	2
Fluid Mechanics	TUT	06311900 L 13	WS	2
Fluid Mechanics	UE	06311900 L 12	WS	2

Workload and credit points

Fluid Mechanics (Lecture)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
			30.0h
Fluid mechanics (tutorial)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
			30.0h
Fluid mechanics (exercise)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
			30.0h
Course-independent effort	Multiplier	hours	Total
Exam preparation	1.0	60.0h	60.0h
Pre- and postprocessing	15.0	2.0h	30.0h
			90.0h

The effort of the module adds up to 180.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

In the lectures the contents of the course are presented, explained and partly worked out by means of examples. In the exercises, example tasks for the contents of the lecture and possible solutions are presented and explained. In the tutorials, further example tasks are worked on by the students largely independently, with assistance and explanations being provided.

Requirements for participation / examination

Desirable conditions for participation in the courses:

Basic knowledge of mathematics and mechanics from the 1st and 2nd semester

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Grading:
graded

Type of examination:
Written examination

Language:
German

Duration/scope:
120 - 180 minutes

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Registration for the examination takes place at the responsible office of the central university administration, usually via the electronic registration system.

References, Scripts

Skript in Papierform:
verfügbar

Script in electronic form:
available

Recommended literature:
scripts (partly available online), current publications

Assigned study programmes

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS

2018 Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Geotechnology (Bachelor of Science)

StuPO 20/02/2019

Module lists of the semesters: SS 2020

Industrial Engineering and Management

(Bachelor of Science)

StuPO 2015

Module lists of the semesters: SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Industrial Engineering and Management

(Master of Science) StuPO 2015

Module lists of the semesters: SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Miscellaneous

Not specified



Construction chemistry and building material testing

Title of the module:

Construction chemistry and building material testing

website:

<http://www.baustoffe.tu-berlin.de/>

Credit points:

6

Secretary's
office:

TIB 1-B 4

Display language:

German

Person in charge:

Stephan, Dietmar Aloys

contact person:

Stephan, Dietmar Aloys

E-mail address:

stephan@tu-berlin.de

Learning outcomes

In the module Construction Chemistry and Building Materials Testing, the learning outcomes from the modules Construction Materials and Construction Chemistry I and II are deepened in terms of content, especially from a chemical perspective. In addition, students can apply the theoretical learning content in practical laboratory experiments. Students are able to apply the basic relationships of chemistry to construction material and construction chemistry processes and to derive macroscopic construction material properties from the microscopic properties and the atomic structure. They master basic working techniques in the chemistry laboratory and can summarize their practical laboratory experiments in protocols. By briefly repeating the building materials test, students consolidate their knowledge of test methods and can also apply this knowledge confidently themselves by working on it in laboratory practicals. Especially for a final thesis in the field of building materials and building chemistry, students learn theoretical and practical skills for carrying out practical laboratory work which can be independently evaluated and interpreted from a scientific point of view.

Course contents

- Fundamentals of chemistry for civil engineers (structure of matter, atomic models, chemical bonds and reaction)
- Elements and their compounds with special importance in the building industry (e.g. alkalis, alkaline earths, silicon, aluminium, ...)
- Metals: production, properties and corrosion
- Acids and bases, pH calculation
- Organic chemistry (simple basics)
- Physical chemistry (reaction kinetics)
- Practical work in the chemical laboratory: handling laboratory equipment, titration, filtration, simple detection reactions, ...
- Building material testing: Fundamentals of destructive and non-destructive testing of building materials
- Practical work in the building materials laboratory: application of destructive and non-destructive building materials tests with evaluation and interpretation of the test results

Module components

Courses	Type	Number	Rotation	SWS
Construction chemistry and building material testing	IV		SS	4

Workload and credit points

Construction Chemistry and Testing of Building Materials (Integrated Event)	Multiplier	hours	Total
Time of presence	15.0	4.0h	60.0h
Preparation/postprocessing	15.0	8.0h	120.0h
			180.0h

The effort of the module adds up to 180.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

The contents to be taught are presented in lectures and deepened in self-study. For their own control, students are supported by ISIS-Test. The knowledge is deepened through lecture hall exercises and practical training in the chemistry and building materials laboratory.

Requirements for participation / examination

Desirable conditions for participation in the courses:

None

Mandatory requirements for the module exam registration: 1)

Module *Building Materials and Building Chemistry II* (#60724) registered

2.) Module *Building Materials and Building Chemistry I* (#60721) passed

Completion of the module

Benotung:	Prüfungsform:	Language:
benotet	Portfolio review 100 points in total	German

Clef:

Note:	1.0	1.3	1.7	2.0	2.3	2.7	3.0	3.3	3.7	4.0
Punkte:	95.0	90.0	85.0	80.0	75.0	70.0	65.0	60.0	55.0	50.0

Test description:

The content of the lecture is deepened by information in ISIS, which is queried via short tests. The successful participation in the practical courses is documented by protocols. The contents of the entire module will be assessed in a written test of 90 minutes.

Audit elements	Category	Points	Duration/scope
Implementation of ISIS tests (approx. 10)	in writing	15	<i>Not specified</i>
Internship participation with protocol (approx. 4)	in writing	35	<i>Not specified</i>
Consultation (approx. 45 min)	verbally	50	45 min

Duration of the module

This module can be completed in one semester.

Maximum number of participants

The maximum number of participants is 36

Application formalities

The registration will take place in the first event.

References, Scripts**Skript in Papierform:**

unavailable

Script in electronic form:*Additional information:*

Documentation on the events will be made available via ISIS.

Recommended literature:

Dietmar Stephan, Building Materials Chemistry, Beuth, 7th edition
2014, 224 p. Roland Benedix, Building chemistry (as e-book in
the Bib)

NDT Construction Compendium: www.bam.de/microsites/zfp_kompendium/verz/findex_abc.html

Assigned study programmes

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS

2018 Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Civil Engineering (Teaching profession) (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020

Civil Engineering (Teaching profession)

(Master of Education) StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020

Industrial Engineering and Management

(Bachelor of Science) StuPO 2015

Module lists of the semesters: SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Industrial Engineering and Management

(Master of Science) StuPO 2015

Module lists of the semesters: SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

This module is particularly recommended for students who are interested in practical work in chemistry and building materials laboratories. The module is particularly well suited to prepare for writing a bachelor thesis in the field of building materials and building chemistry.

Miscellaneous

Not specified



Water management

Title of the module:

Water management

Credit points:

6

Person in charge:

Hinkelmann, Reinhard

website:<http://www.wahyd.tu-berlin.de>**Secretary's office:**

TIB 1-B 14

contact person:

Sailor, Sandra

Display language:

German

E-mail address:reinhard.hinkelmann@tu-berlin.de

Learning outcomes

The courses convey scientific basics and simple practical applications in several areas of water management.

Hydraulic engineering: scientific principles and their application in the planning, calculation and design of simple hydraulic engineering systems

Engineering hydrology: scientific fundamentals and their implementation for the planning, calculation and design of simple hydrological systems in rural and urban areas

Application examples from the water industry: Independent processing of simple practical engineering projects from the water sector Two of the three courses offered can be selected.

Course contents

Hydraulic engineering: Hydrology, river engineering, dams, hydroelectric power plants, hydraulic engineering for traffic, coastal engineering
 Engineering hydrology: Hydrological cycle and balance, precipitation, evaporation, infiltration, groundwater, runoff, basics of river basin modelling, runoff formation models, system hydrology, unit hydrograph method, translation and retention models, river models, physically based hydrological models, agricultural hydraulic engineering

Application examples from the water sector: independent processing of simple practical engineering projects from the water sector, interaction of urban water management, hydrological and hydraulic engineering aspects

Module components

"Compulsory group" (From the following courses, a minimum of 2 and a maximum of 2 courses must be completed)

Courses	Type	Number	Rotation	SWS
Hydraulic engineering	IV	06311900 L 24	WS	2
Engineering Hydrology	IV	06311900 L 28	WS	2
Application examples from the water industry	UE	06311900 L 29	WS	2

Workload and credit points

Hydraulic Engineering (Integrated Event)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Preparation/postprocessing	15.0	4.0h	60.0h
			90.0h

Engineering Hydrology (Integrated Event)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Preparation/postprocessing	15.0	4.0h	60.0h
			90.0h

Application examples from the water sector (exercise)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Preparation/postprocessing	15.0	4.0h	60.0h
			90.0h

The effort of the module adds up to 180.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

Hydraulic engineering: In the integrated course, the course contents are explained. For this purpose, sample tasks with solutions are explained directly.

Engineering hydrology: In the integrated course, the course contents are explained. In addition, example tasks with solutions are explained directly.

Application examples from the water industry: The exercise presents current issues from research and application in the field of water management. Students choose one topic at a time, work on it independently in the form of a written paper and present the results as a paper at the end of the lecture period in a colloquium. The basic skills for scientific work and writing are taught in parallel.

Requirements for participation / examination

Desirable conditions for participation in the courses:

Hydraulic engineering: Fluid
mechanics Engineering
hydrology: none
Application examples from the water industry: Basics of urban water management

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Benotung:	Prüfungsform:	Language:
benotet	Portfolio review 100 points in total	German

Clef:

Note:	1.0	1.3	1.7	2.0	2.3	2.7	3.0	3.3	3.7	4.0
Points:	95.0	90.0	85.0	80.0	75.0	70.0	65.0	60.0	55.0	50.0

Test description:

Not specified

Audit elements	Category	Points	Duration/scope
Depending on the choice of LV	flexible	50	<i>Not specified</i>
Depending on the choice of LV	flexible	50	<i>Not specified</i>

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Registration for the examination takes place at the responsible office of the central university administration, usually via the electronic registration system.

References, Scripts

Skript in Papierform:
unavailable

Script in electronic form:

Assigned study programmes

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS

2018 Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Civil Engineering (Teaching profession) (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020

Civil Engineering (Teaching profession)

(Master of Education) StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020

Geotechnology (Bachelor of Science)

StuPO 20.02.2019

Module lists of the semesters: WS 2019/20 SS

2020 Industrial Engineering and Management

(Bachelor of Science)

StuPO 2015

Module lists of the semesters: SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Industrial Engineering and Management

(Master of Science) StuPO 2015

Module lists of the semesters: SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Miscellaneous*Not specified*



Systems engineering I & II

Title of the module:

Systems engineering I & II

website:<http://www.civilsystems.tu-berlin.de/>**Credit points:**

6

Secretary's office:

TIB 1-B 7

Display language:

German/English

Person in charge:

Hartmann, Timo

contact person:

Hartmann, Timo

E-mail address:

timo.hartmann@tu-berlin.de

Learning outcomes

The design, construction and maintenance of functioning structures requires a systematic understanding of the physical, logical and cyber-physical components of a structure. Furthermore, a good understanding of the social processes that support the building is required. These elements act together in a complex system that can only be understood by means of abstract system models. In this module students therefore learn the basics of model-based system philosophy and system design. The contents are illustrated using a number of models from the construction industry (e.g. roads, railways, hospitals, dykes). Since many of the systems in civil engineering are of stochastic nature, the basics of stochastics are also learned and first skills are developed to analyze stochastic systems. In order to become familiar with the field of stochastic systems analysis, the lectures are accompanied by project tasks in which students program simple statistical tasks in the software R.

Building on this, this module then provides an introduction to computer-aided simulation methods to analyze physical, logical and cyber-physical building components in context. The students learn basic methods of simulation of systems in civil engineering and the analysis of systems based on simulation methods. Students develop the skills to design simulation models and to conduct structured experiments with the models. Different use cases from the construction industry are used as models (e.g. design of urban infrastructure; construction planning of line construction sites). In an accompanying simulation project, students acquire the ability to create and analyse simulation models in the Software R themselves.

Course contents

System philosophy:

- Definition of different system types
- Basics of technical systems in civil engineering
- Basics of the methodical system design
- Parametric Design Systems
- System presentation

Stochastic system analysis

- Fundamentals of the theory of probability
- Basics of statistics
- Introduction to statistical system analysis with R

System Simulation

- System dynamic simulation
- Event-oriented simulation
- Simulation Calibration
- Sensitivity analysis
- Simulation modelling and analysis in R

Module components

Courses	Type	Number	Rotation	SWS
Systems engineering of structural facilities I	IV	06311100 L 71	WS	2
Systems engineering of structural facilities II	VL		WS	2

Workload and credit points

Systems Engineering of Structural Facilities I (Integrated Event)	Multiplier	hours	Total
Time of presence	15.0	4.0h	60.0h
			60.0h
Systems engineering of structural facilities II (Lecture)	Multiplier	hours	Total
Time of presence	10.0	2.0h	20.0h
			20.0h

Course-independent effort	Multiplier	hours	Total
Reading and commenting on technical literature	10.0	4.0h	40.0h
Project work	15.0	4.0h	60.0h
			100.0h

The effort of the module adds up to 180.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

- Reading, commenting and discussing selected specialist texts in the online platform Perusall.com
- Discussion of complex or problematic topics of the read literature, as well as practical and application examples from the construction industry during the lectures
- Semester-accompanying individual project work in the statistical software R

Requirements for participation / examination

Desirable conditions for participation in the courses:

previous mathematical knowledge

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Benotung:

benotet

Prüfungsform:

Portfolioprüfung

Language:

German/English

Clef:

This examination uses its own grading system (see examination form description).

Test description:

40% comments on selected articles

30% on project work in stochastics and statistics (also serves to familiarize with the use of the R software) 30% on project work in system simulation

Audit elements	Category		Duration/scope
Comments Literature	flexible	40	about 20 texts
Project work statistics	flexible	30	3 jobs with about 1200 words
Project work system simulation	flexible	30	3 orders with approx. 1200 Words

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Registration for the examination takes place at the responsible office of the central university administration, usually via the electronic registration system.

References, Scripts

Skript in Papierform:

nicht verfügbar

Script in electronic form:

unavailable

Assigned study programmes

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 2015

Module lists of the semesters: SS 2017 WS 2017/18 SS

2018 Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Civil Engineering (Teaching profession) (Bachelor of Science)

StuPO 2015

Module lists of the semesters: SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020 Bautechnik (Lehramt) (Master of Education)

StuPO 2015

Module lists of the semesters: SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020 Geotechnology (Bachelor of Science)

StuPO 20/02/2019

Module lists of the semesters: SS 2020

Industrial Engineering and Management

(Bachelor of Science)

StuPO 2015

Module lists of the semesters: SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020 Industrial Engineering (Master of Science)

StuPO 2015

Module lists of the semesters: SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Miscellaneous*Not specified*



Baubetrieb II

Title of the module:

Construction operation II

website:

Not specified

Credit points:

6

Secretary's office:

TIB 1-B 6

Display language:

German

Person in charge:

Sundermeier, Matthias

contact person:

Sundermeier, Matthias

E-mail address:

matthias.sundermeier@tu-berlin.de

Learning outcomes

Die Studierenden erwerben Kenntnisse, Fertigkeiten und Kompetenzen, um Bauleitungs- bzw. Bauüberwachungsaufgaben im ausführenden Unternehmen oder aufseiten des Bauherrn/Auftraggebers wahrzunehmen. Neben Vertiefungswissen in der Bauauftragsrechnung für Projekte aller Bausparten liegt der Schwerpunkt hierbei auf dem VOB/B-Bauvertragsrecht sowie auf der Bauverfahrenstechnik für Arbeiten im Erd- und Spezialtiefbau.

Die Studierenden,

- verfügen über vertiefte Kenntnisse der Bauauftragsrechnung im Kontext des baubetrieblichen Rechnungswesens und können Preise für komplexe Baumaßnahmen methodisch sicher kalkulieren, prüfen, ggf. fortschreiben und Ausführungsvarianten im Hinblick auf ihre Kostenfolgen analysieren,
- kennen die bau- und verfahrenstechnischen Anforderungen an die Bauausführung von Erd- und Spezialtiefbau,
- sind in der Lage, Managementaufgaben dieser Gewerke im Hinblick auf eine wirtschaftliche, termin- und qualitätsgerechte Leistungserstellung bei der Bauablaufplanung, Arbeitsvorbereitung und Baustellenabwicklung zu übernehmen und
- beherrschen den Umgang mit der VOB/B für die Angebotsbearbeitung, Durchführung und Abrechnung von Bauleistungen.

Das Modul vermittelt den Studierenden - aufbauend auf dem Modul ‚Baubetrieb I‘ - ein umfassendes Verständnis der organisatorischen, ökonomischen, technischen und rechtlichen Aspekte der Bauauftragsanbahnung und -durchführung bei der Ausführung von Leistungen im Erdbau sowie im Spezialtiefbau.

Das Modul vermittelt:

Fachkompetenz 50% Methodenkompetenz 30% Systemkompetenz 20% Sozialkompetenz 0 %

Course contents

In der Lehrveranstaltung ‚Vertiefung Bauauftragsrechnung‘ werden folgende fachspezifische Themenstellungen betrachtet:

- Bauauftragsrechnung im betrieblichen Rechnungswesen
- Kalkulationsverfahren über die Endsumme
- Gemeinkostenermittlung
- Vertiefung EKT-Kalkulation
- Kalkulation von Sonderpositionen
- kalkulatorische Verfahrensvergleiche
- Risikoerfassung in der Kalkulation
- Deckungsbeitragsrechnung

In der Lehrveranstaltung ‚Bauverfahrenstechnik II‘ wird die Verfahrenstechnik für Erd- und Spezialtiefbauarbeiten mit Blick auf die Belange der Produktionsplanung, der Bauausführung und des Baustellenmanagements beleuchtet. Konkret werden folgende Themenkreise diskutiert:

- technische Grundlagen und Regelwerke
- Technische Vertragsbedingungen, AVA
- Bauablaufplanung
- Preisbildung und Preisprüfung
- Qualitätsmanagement der Bauausführung

In der Lehrveranstaltung ‚Baurecht II‘ erwerben die Studierenden Grundwissen über Regelungsmechanismen für die Durchführung und Abrechnung von Bau-Werkverträgen. Vor diesem Hintergrund werden folgende Themenkreise betrachtet:

- Grundzüge des Bau-Werkvertragsrechts
- VOB/B - Funktion und Rechtsnatur
- Vertragstypen der VOB/B
- Basisregelungen der Vertragsdurchführung
- Leistungsmodifikationen und Mengenabweichungen
- Abnahme und Mängelhaftung
- Abrechnung und Zahlung

Module components

Courses	Type	Number	Rotation	SWS
Baurecht II	IV		WS	1
Bauverfahrenstechnik II	IV		WS	2
Vertiefung Bauauftragsrechnung	IV		WS	1

Workload and credit points

Baurecht II (Integrierte Veranstaltung)	Multiplier	hours	Total
Time of presence	15.0	1.0h	15.0h
Preparation/postprocessing	15.0	2.0h	30.0h
			45.0h

Bauverfahrenstechnik II (Integrierte Veranstaltung)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Preparation/postprocessing	15.0	4.0h	60.0h
			90.0h

Vertiefung Bauauftragsrechnung (Integrierte Veranstaltung)	Multiplier	hours	Total
Time of presence	15.0	1.0h	15.0h
Preparation/postprocessing	15.0	2.0h	30.0h
			45.0h

The effort of the module adds up to 180.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

Die Lehrveranstaltungen finden jeweils als Integrierte Veranstaltung mit 1 SWS bzw. 2 SWS statt, die Abfolge ist jeweils wöchentlich im WiSe.

Requirements for participation / examination

Desirable conditions for participation in the courses:

Wünschenswerte Voraussetzung für die Teilnahme an den Lehrveranstaltungen ist der erfolgreiche Abschluss des Moduls 'Baubetrieb' bzw. 'Baubetrieb und Bauwirtschaft'

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Benotung:	Prüfungsform:	Language:
benotet	Portfolio review 100 points in total	German

Clef:

This examination uses its own grading system (see examination form description).

Test description:

Die Prüfung gilt als bestanden, wenn mindestens 50% der Gesamtpunktzahl erreicht werden. Einzelheiten zu den Prüfungselementen werden zu Beginn des Moduls bekannt gegeben.

Prüfungselemente	Kategorie	Punkte	Dauer/Umfang
ein mündliches Prüfungselement (z.B. Referat, Präsentation, mündliche Rücksprache o.ä.)	mündlich	25	Keine Angabe
ein schriftliches Prüfungselement (z.B. Hausarbeit, schriftlicher Test o.ä.)	schriftlich	75	Keine Angabe

Duration of the module

This module can be completed in one semester.

Maximum number of participants

Die maximale Teilnehmerzahl beträgt 40

Application formalities

in der ersten Veranstaltung

References, Scripts

Skript in Papierform:

unavailable

Skript in electronic form:

Assigned study programmes

This module is used on the following module lists: Civil

Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Industrial Engineering and Management (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2019/20 SS

2020 Industrial Engineering and Management (Master

of Science)

StuPO 2015

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS 2020

Miscellaneous

Not specified



Grundbau und Bodenmechanik II

Title of the module:

Foundation engineering and soil mechanics II

website:

Not specified

Credit points:

6

Secretary's office:

TIB 1-B 7

Display language:

German

Person in charge:

Rackwitz, Frank

contact person:

Not specified

E-mail address:

frank.rackwitz@tu-berlin.de

Learning outcomes

Im Zuge von Infrastrukturmaßnahmen ist das Erstellen von innerstädtischen Baugruben mit Hilfe von Sonderkonstruktionen des Spezialtiefbaus unerlässlich. In diesem Modul sollen daher die relevanten Wand- und Sohlkonstruktionen vorgestellt und die entsprechenden Nachweise für diese Konstruktionen erlernt werden. Darüber hinaus werden Grundlagen der Wassererhaltung im Rahmen von Bauvorhaben und ihre Auswirkung auf die Umwelt behandelt. Im Anschluss sind die Studierenden in der Lage, innerstädtische Baugruben zu planen sowie ihre Standsicherheit zu ermitteln und zu beurteilen. Ein semesterbegleitendes Projekt soll diese Fähigkeiten für die Praxis trainieren.

Fachkompetenz 50%, Methodenkompetenz 30%, Systemkompetenz 15%, Sozialkompetenz 5%

Course contents

Konstruktive Gestaltung, statische Berechnung und Standsicherheitsnachweise von Baugrubensohlen und üblichen Wandkonstruktionen sowie von Sonderkonstruktionen wie Schlitzwänden und Unterfangungen. Grundlagen und Bemessung von Wasserhaltungen und ihre Auswirkung auf die Umwelt.

Im begleitenden Tutorium werden Beispiele zur Integrierten Veranstaltung in kleinen Gruppen bearbeitet, Laborübungen durchgeführt sowie Hilfestellungen für das zu bearbeitende Projekt gegeben

Module components

Courses	Type	Number	Rotation	SWS
Foundation engineering and soil mechanics II	VL	06311600 L 21	WS	2
Foundation engineering and soil mechanics II	UE		WS	2
Foundation engineering and soil mechanics II	TUT		WS	2

Workload and credit points

Grundbau und Bodenmechanik II (Vorlesung)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
			30.0h
Grundbau und Bodenmechanik II (Übung)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Vor-/ Nachbereitung	15.0	1.0h	15.0h
			45.0h
Grundbau und Bodenmechanik II (Tutorium)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Vor-/ Nachbereitung	15.0	1.0h	15.0h
			45.0h
Course-independent effort	Multiplier	hours	Total
Projekt	15.0	2.0h	30.0h
Prüfung und Prüfungsvorbereitung	1.0	30.0h	30.0h
			60.0h

The effort of the module adds up to 180.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

Not specified

Requirements for participation / examination

Desirable conditions for participation in the courses:

Abschluss der Module „GB I“ sowie „Strömungs- und Bodenmechanik“.

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Benotung:	Prüfungsform:	Language:
benotet	Portfolioprüfung	German

Clef:

Kein Notenschlüssel angegeben...

Test description:

Prüfungsäquivalente Studienleistungen: Projekt und schriftl. Test.
Für die Endnote werden das semesterbegleitende Projekt mit 40% und der 2-stündige schriftliche Test mit 60% gewichtet.

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Not specified

References, Scripts

Skript in Papierform:	Script in electronic form:
verfügbar	available

Assigned study programmes

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 17.12.2008

Modullisten der Semester: SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19

Bauingenieurwesen (Bachelor of Science)

StuPO 2015

Modullisten der Semester: SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018

Bauingenieurwesen (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Industrial Engineering and Management (Bachelor of Science)

StuPO 2015

Module lists of the semesters: SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Industrial Engineering and Management

(Master of Science) StuPO 2015

Module lists of the semesters: SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Miscellaneous

Teilnehmer(innen)zahl:

VL: keine Angabe, UE: 45, TUT: 15



Grundlagen der Tragwerkslehre

Title of the module:

Basics of the structural theory

website:
<http://www.ek-massivbau.tu-berlin.de>
Credit points:

3

Secretary's office:

TIB 1-B 2

Display language:

German

Person in charge:

Schlaich, Michael

contact person:

Schlaich, Michael

E-mail address:
ek-massivbau@tu-berlin.de

Learning outcomes

Qualifikationsziele sind, Studierende a) in die Geschichte der Bauingenieurkunst, und b) in die Logik der Konstruktion einzuführen.

a) Geschichte der Bauingenieurkunst:

Lernziel ist es, den Studierenden schon zu Beginn des Studiums die gesellschaftliche Rolle des Bauingenieurs unter Berücksichtigung von Genderaspekten aufzuzeigen und einen Überblick über die Geschichte der Bauingenieurkunst zu vermitteln. Damit soll die Einsicht in die Notwendigkeit der Beherrschung der theoretischen Grundlagen und das Bewusstsein, dass im Bauingenieurwesen Kreativität und Technik nebeneinander stehen, gestärkt werden.

b) Logik der Konstruktion:

Den Studierenden wird ein Einblick in das Tragverhalten der Bauwerke geboten. Ziel ist es, Verständnis für den Kraftfluss und Lastabtrag der wichtigsten Tragwerkstypen zu wecken und zu einfacher Bemessung zu befähigen.

Course contents

In diesem Modul werden den Studierenden die Grundlagen der Tragwerkslehre so vermittelt, dass sie verstehen, warum das Studium der schwierigen Fächer Mathematik und Mechanik nötig ist und sie motiviert sind das Bachelorstudium anzugehen.

Den Studierenden werden bei einem Spaziergang durch die Geschichte der Tragwerke, vom griechischen Tempel bis zum modernen Hochhaus, die wichtigen Baumeister und ihre Bauten vorgestellt. Dabei wird auch klar, dass die Geschichte des Bauens auch die Geschichte der Entwicklung der Werkstoffe, der Berechnungsmethoden und der historischen Randbedingungen ist. Parallel dazu, fast nebenbei, werden die Grundlagen des Tragverhaltens von Bogen, Balken, Seilen und Kuppeln vermittelt.

Module components

Courses	Type	Number	Rotation	SWS
Basics of the structural theory	TUT		WS	1
Basics of the structural theory	IV	06311400 L 01	WS	2

Workload and credit points

Grundlagen der Tragwerkslehre (Tutorium)	Multiplier	hours	Total
Time of presence	15.0	1.0h	15.0h
			15.0h
Grundlagen der Tragwerkslehre (Integrierte Veranstaltung)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
			30.0h
Course-independent effort	Multiplier	hours	Total
Bearbeitung Hausarbeit	1.0	30.0h	30.0h
Vorbereitung schriftlicher Test	1.0	15.0h	15.0h
			45.0h

The effort of the module adds up to 90.0 hours. Thus the module comprises 3 credit points.

Description of the teaching and learning methods

Professional competence 40%

Methodological competence 20%

Systems competence 20%

Sozialkompetenz 20%

Requirements for participation / examination

Desirable conditions for participation in the courses:

none

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Benotung: benotet	Prüfungsform: Portfolio review 100 points in total	Language: German
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Clef:

Kein Notenschlüssel angegeben...

Test description:

Not specified

Audit elements	Category	Points	Duration/scope
Hausarbeit	in writing	35	<i>Not specified</i>
Modell + Poster	practically	15	<i>Not specified</i>
Test (60 min)	in writing	50	60 Min

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Die Anmeldung zur Prüfung erfolgt bei der zuständigen Stelle der zentralen Universitätsverwaltung, i.d.R. über das elektronische Anmeldesystem.

References, Scripts

Skript in Papierform:

nicht verfügbar

Script in electronic form:

unavailable

Assigned study programmes

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 17.12.2008

Modullisten der Semester: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19

Bauingenieurwesen (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS

2018 Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Civil Engineering (Teaching profession) (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2019/20 SS

2020 Industrial Engineering and Management

(Bachelor of Science)

StuPO 2015

Module lists of the semesters: SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Miscellaneous

Not specified



Grundprojekt - Bauingenieurwesen

Title of the module:

Basic project - civil engineering

website:

<http://www.ek-verbundstrukturen.tu-berlin.de>

Credit points:

6

Secretary's office:

TIB 1-B 11

Display language:

German

Person in charge:

Schmid, Volker

contact person:

Gräßler, Sarah

E-mail address:

ek-verbundstrukturen@tu-berlin.de

Learning outcomes

In diesem Modul mit unterschiedlichen Wahlbereichen werden die Studierenden multidisziplinär und ganzheitlich in die Aufgaben der Bauingenieurpraxis eingeführt. Zentrales Qualifikationsziel ist die Anwendung des im bisherigen Studium erlernten Wissens in einem multidisziplinären Designteam und das gemeinsame Erlernen und Erproben von Kommunikationsfähigkeit, Teamfähigkeit und Techniken der Präsentation. An Hand konkreter Bauplanungen und Bauprojekte (bspw. Industriehalle als Holz-, Stahl- oder Stahlbetontragwerk) gewinnen sie eine Übersicht über die am Bau Beteiligten, ihre Aufgaben und Organisationsformen, die Verteilung von Entscheidungskompetenz und Verantwortung, die vielfältigen Beziehungen zwischen Entwurf, Ausführung und Nutzung von Bauwerken und Natursystemen, die technischen, umweltrelevanten, gesellschaftlichen, wirtschaftlichen, juristischen und finanziellen Aspekte des Bauens - d. h. aller Aspekte der Nachhaltigkeit einschließlich der Genderaspekte - sowie die Beziehungen zu anderen Fachdisziplinen.

Fachkompetenz 20%

Methodological competence 20%

Systemkompetenz 30%

Sozialkompetenz 30%

Course contents

Das Modul Grundprojekt ist eine Gemeinschaftsveranstaltung der Fachgebiete des Bauingenieurwesens unter Leitung des Fachgebietes Entwerfen und Konstruieren - Verbundstrukturen und Mitwirkung des Fachgebiets Baubetrieb und Bauwirtschaft sowie eines weiteren, jährlich wechselnden Fachgebiets aus dem Bauingenieurwesen. In Abhängigkeit der jährlich wechselnden Themenstellungen können zusätzlich Fachgebiete anderer Institute oder Fakultäten eingebunden werden. Die Themenstellungen werden am Anfang des Semesters bekannt gegeben und in Gruppen selbstständig bearbeitet. Das Grundprojekt besteht aus einer semesterbegleitenden Lehrveranstaltung, die den Rahmen für das Projekt bildet. Inhalte dieser Lehrveranstaltung sind u.a.:

- Einführung in das Projekt und dessen Teilaufgaben (Aufgabenstellung, Randbedingungen etc.)

- Grundlagen des Projektmanagements

- Kommunikation im Projekt (Arbeitsweise mit dem Projektkommunikationssystem) zur Verfügung gestellt vom Fachgebiet Bauinformatik.

Die Ergebnisse ihrer Arbeit und die projektspezifischen Probleme stellen die Studierenden in Referaten dar. In diesen sollen projektspezifische Probleme behandelt werden. Nach Bedarf finden auch Exkursionen statt. Die eigentliche Projektarbeit findet in Gruppen statt. Die Gruppengrößen richten sich nach den Aufgabenstellungen. Hierbei muss sichergestellt sein, dass sowohl eine Kommunikation innerhalb der Gruppe, die ein Teilprojekt bearbeitet, als auch zwischen den übergeordneten Teams/Gruppen stattfindet. Für die Kommunikation, d.h. den Austausch von Informationen (E-Mail oder sonstige Schriftstücke, Zeichnungen etc.), wird ein EDV-gestützter Projektarbeitsraum angeboten. Die Ergebnisse der Projektarbeit werden im Rahmen von Abschlusspräsentationen und einer schriftlichen Ausarbeitung vorgestellt.

Module components

Courses	Type	Number	Rotation	SWS
Grundprojekt	PJ	06312500L03	WS	4

Workload and credit points

Grundprojekt (Projekt)	Multiplier	hours	Total
Ausarbeitung Referate	3.0	6.0h	18.0h
Präsenz Blockveranstaltung	3.0	5.0h	15.0h
Präsenz Studierendenreferate	3.0	5.0h	15.0h
Projektarbeit in Gruppen	1.0	95.0h	95.0h
Seminare zur Vor- und Nachbereitung der Präsentationen	15.0	1.0h	15.0h
Vorbereitung Abschlusspräsentation	1.0	22.0h	22.0h
			180.0h

The effort of the module adds up to 180.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

Selbstständige Gruppenarbeit unterstützt durch die Professoren und Mitarbeiter der beteiligten Fachgebiete.

Requirements for participation / examination

Desirable conditions for participation in the courses:

Structural engineering I

Verpflichtende Voraussetzungen für die Modulprüfungsanmeldung:

- 1.) Modul *Baustatik I* (#60154) bestanden
- 2.) Modul *Grundlagen des Entwerfens und Konstruierens* (#60162) bestanden

Completion of the module

Benotung:	Prüfungsform:	Language:
benotet	Portfolio review 100 points in total	German

Clef:

Test description:

Für das Bestehen des Moduls sind 50 von möglichen 100 Punkten erforderlich.

Audit elements	Category	Points	Duration/scope
1. Aufgabenteil	flexible	30	<i>Not specified</i>
2. Aufgabenteil	flexible	35	<i>Not specified</i>
3. Aufgabenteil	flexible	35	<i>Not specified</i>

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Die Anmeldung zur Prüfung erfolgt bei der zuständigen Stelle der zentralen Universitätsverwaltung, i. d. R. über das elektronische Anmeldesystem QISPOS.

References, Scripts

Skript in Papierform:

unavailable

Script in electronic form:

Assigned study programmes

This module is used on the following module lists: Civil

Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2019/20 SS

2020 Bautechnik (Lehramt) (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2019/20 SS

2020 Industrial Engineering and Management

(Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2019/20 SS

2020 Industrial Engineering and Management (Master

of Science)

StuPO 2015

Module lists of the semesters: WS 2019/20 SS 2020

Miscellaneous

Not specified



Konstruktiver Ingenieurbau I

Title of the module:
Structural engineering I

website:
<http://www.ek-massivbau.tu-berlin.de>

Credit points:
6

Secretary's office:
TIB 1-B 2

Display language:
German

Person in charge:
Schlaich, Michael

contact person:
Schlaich, Michael

E-mail address:
ek-massivbau@tu-berlin.de

Learning outcomes

Eingebettet in den Ansatz der werkstoffübergreifenden Lehre werden in diesem Modul die Grundlagen zur Dimensionierung und konstruktiven Durchbildung von Bauteilen vermittelt. Wesentliches Ziel ist es, die Studierenden zur Bemessung von Querschnitten und Verbindungen aus den Werkstoffen Stahl, Holz und Stahlbeton zu befähigen. Sie werden an einfache Bemessungsaufgaben, vornehmlich an stabförmigen Konstruktionselementen, herangeführt und können dann deren Querschnittsdimensionen festlegen sowie die Festigkeitsnachweise erbringen. Das parallele Vermitteln der verschiedenen Bemessungsansätze für die einzelnen Baustoffe folgt dem Ansatz der werkstoffübergreifenden Lehre. Die Verwendung der unterschiedlichen Baustoffe mit ihren spezifischen Eigenschaften hinsichtlich eines optimalen Einsatzes in den Bauwerken wird dabei besonders herausgestellt, um so die Grundlagen für das kreative, ingenieurmäßige Entwerfen und Konstruieren zu legen.

Course contents

- Weiterführung der Bemessungsgrundlagen für Stahl-, Holz- und Stahlbetonkonstruktionen
- Betrachtung der Werkstoffe im Kontext der Bemessung und der Normungen
- Behandlung stabförmiger Bauteile hinsichtlich die Bemessung der Querschnitte auf Biegung, Druck und Zug, Querkraft und Torsion
- Betrachtung einfacher Anschlüsse und Verbindungsmittel

Module components

Courses	Type	Number	Rotation	SWS
Structural engineering I	TUT	06311400 L 05	SS	2
Structural engineering I	VL	06311400 L 03	SS	2
Structural engineering I	UE	06311400 L 02	SS	2

Workload and credit points

Konstruktiver Ingenieurbau I (Tutorium)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
			30.0h
Konstruktiver Ingenieurbau I (Vorlesung)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
			30.0h
Konstruktiver Ingenieurbau I (Übung)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
			30.0h
Course-independent effort	Multiplier	hours	Total
Exam preparation	1.0	45.0h	45.0h
Preparation/postprocessing	1.0	45.0h	45.0h
			90.0h

The effort of the module adds up to 180.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

Fachkompetenz 60%
Methodological competence 20%
Systemkompetenz 10%
Social Competence 10

Requirements for participation / examination

Desirable conditions for participation in the courses:

„Grundlagen der Tragwerkslehre“

Mandatory requirements for the registration for the module exam:*Not specified***Completion of the module**

Grading:	Type of examination:	Language:	Duration/scope
graded	Written examination	German	: 120 minutes

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Die Anmeldung zur Prüfung erfolgt bei der zuständigen Stelle der zentralen Universitätsverwaltung, i.d.R. über das elektronische Anmeldesystem.

References, Scripts**Skript in Papierform:***unavailable***Script in electronic form:****Assigned study programmes**

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 17.12.2008

Modullisten der Semester: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19

Bauingenieurwesen (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS

2018 Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Civil Engineering (Teaching profession) (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020

Civil Engineering (Teaching profession)

(Master of Education) StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020

Industrial Engineering and Management

(Bachelor of Science) StuPO 2015

Module lists of the semesters: SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Industrial Engineering and Management

(Master of Science) StuPO 2015

Module lists of the semesters: SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Miscellaneous*Not specified*



Konstruktiver Ingenieurbau III

Title of the module:

Structural engineering III

website:
<http://www.ek-stahlbau.tu-berlin.de/>
Credit points:

6

Secretary's office:

TIB 1-B 1

Display language:

German

Person in charge:

Geißler, Karsten

contact person:

Geißler, Karsten

E-mail address:

ek-stahlbau@tu-berlin.de

Learning outcomes

Mit diesem Modul wird die in den Modulen KI I und KI II begonnene werkstoffübergreifende Vermittlung der Grundlagen des Bemessens und Konstruierens vervollständigt. Im Ergebnis steht somit die Beherrschung weiterer Grundlagen wesentlicher Themen des konstruktiven Ingenieurbaus. Das Modul ist für alle, die sich Aufgaben des "konstruktiven Ingenieurbaus" widmen wollen oder im Masterstudium den Schwerpunkt "Entwerfen und Konstruieren" wählen, unverzichtbar.

Fachkompetenz 50%, Methodenkompetenz 30%, Systemkompetenz 10%, Sozialkompetenz 10%

Course contents

- Lokales Versagen von Stahlquerschnitten (Beulen)
- Stabilitätsprobleme überwiegend durch Biegung beanspruchter Bauteile (Biegedrillknicken)
- Stabilitätsprobleme druckbeanspruchter Bauteile (Knicken mehrteiliger Stäbe)
- Gebrauchstauglichkeit von Massivbauteilen, Nachweis der Rissbreiten
- Ermüdungsfestigkeit, Grundlagen und Nachweise

Module components

Courses	Type	Number	Rotation	SWS
Structural engineering III	VL	06311500 L 14	SS	2
Structural engineering III	UE	06311500 L 15	SS	2

Workload and credit points

Konstruktiver Ingenieurbau III (Vorlesung)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Preparation/postprocessing	15.0	2.0h	30.0h
			60.0h
Konstruktiver Ingenieurbau III (Übung)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Preparation/postprocessing	15.0	2.0h	30.0h
			60.0h
Course-independent effort	Multiplier	hours	Total
Exam preparation	1.0	60.0h	60.0h
			60.0h

The effort of the module adds up to 180.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

- Vorlesung: Theoretische Grundlagen
- Übung: Berechnung von Beispielaufgaben,
- Eigenständiges Lösen von Aufgaben mit Betreuung

Requirements for participation / examination

Desirable conditions for participation in the courses:

Konstruktiver Ingenieurbau I und II

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Grading: graded	Type of examination: Written examination	Language: German	Duration/scope: 90 minutes
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Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Die Anmeldeformalitäten werden in den Lehrveranstaltungen angegeben.

References, Scripts

Skript in Papierform:

verfügbar

Script in electronic form:

available

Recommended literature:

Literaturhinweise werden in den Lehrveranstaltungen gegeben.

Assigned study programmes

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 17.12.2008

Modullisten der Semester: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19

Bauingenieurwesen (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS

2018 Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Industrial Engineering and Management (Bachelor of Science)

StuPO 2015

Module lists of the semesters: SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Industrial Engineering and Management

(Master of Science) StuPO 2015

Module lists of the semesters: SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Miscellaneous

Not specified



Baustatik I

Title of the module:

Structural analysis I

website:<http://www.statik.tu-berlin.de>**Credit points:**

6

Secretary's office:

TIB 1-B 5

Display language:

German

Person in charge:

Petryna, Yuriy

contact person:

Pretzke, Alexandra

E-mail address:info@statik.tu-berlin.de

Learning outcomes

Die Studierenden sind in der Lage, Grundlagen und Arbeitstechniken der klassischen Statik für typische Berechnungen von statisch bestimmten Stabtragwerken einzusetzen. Sie können das Wesentliche am Tragverhalten erfassen, dieses in statische Modelle umsetzen, die richtigen Verfahren für eine statische Berechnung wählen und durchführen, die Berechnungsergebnisse fachgerecht interpretieren und kritisch bewerten.

Expertise 50% of

Competence in methods 30%

Systemkompetenz 10%

Social Competence 10

Course contents

Es werden Elemente zur Modellierung von Stabtragwerken definiert, statische und geometrische Eigenschaften von Tragsystemen erklärt, die Grundgleichungen zur Berechnung nach Theorie I. Ordnung unter statischen Einwirkungen abgeleitet. Zur Berechnung von statisch bestimmten Stabtragwerken werden das Aufbauprinzip, das Schnittprinzip und die Arbeitsprinzipien der Mechanik als Methoden sowie das Prinzip der virtuellen Weggrößen und das Prinzip der virtuellen Kraftgrößen erlernt und angewandt. Mit diesen Verfahren ermitteln Studierende Zustands- und Einflusslinien von Kraft- und Weggrößen sowie Verformungen statisch bestimmter Tragsysteme.

Module components

Courses	Type	Number	Rotation	SWS
Structural analysis I	VL	06311200 L 11	WS	2
Structural analysis I	UE	06311200 L 12	WS	2
Structural analysis I	TUT	06311200 L 14	WS	2

Workload and credit points

Baustatik I (Vorlesung)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Preparation/postprocessing	15.0	1.0h	15.0h
			45.0h

Baustatik I (Übung)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Preparation/postprocessing	15.0	1.0h	15.0h
			45.0h

Baustatik I (Tutorium)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Preparation/postprocessing	15.0	1.0h	15.0h
			45.0h

Course-independent effort	Multiplier	hours	Total
Exam preparation	1.0	45.0h	45.0h
			45.0h

The effort of the module adds up to 180.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

Die Lehrformen sind Vorlesung, Übung, Tutorium und eigenständige Vor- und Nachbereitung des Lernstoffes.

Requirements for participation / examination

Desirable conditions for participation in the courses:

ein abgeschlossenes Modul „Statik und elementare Festigkeitslehre“

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Grading:	Type of examination:	Language:	Duration/scope
graded	Written examination	German	: 120 minutes

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

The registration formalities can be found on the Internet at <http://www.statik.tu-berlin.de> under the item "Module Examinations". Further information is available from the secretariat at info@statik.tu-berlin.de or by telephone at (314) 72320.

References, Scripts

Skript in Papierform:

unavailable

Script in electronic form:

Recommended literature:

see lecture notes in the ISIS system

Assigned study programmes

This module is used on the following module lists: Civil

Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: SS 2019 WS 2019/20 SS

2020 Industrial Engineering and Management (Bachelor of

Science)

StuPO 2015

Module lists of the semesters: SS 2019 WS 2019/20 SS 2020

Miscellaneous

Not specified



Baustatik II

Title of the module:

Structural analysis II

website:<http://www.statik.tu-berlin.de>**Credit points:**

6

Secretary's office:

TIB 1-B 5

Display language:

German

Person in charge:

Petryna, Yuriy

contact person:

Pretzke, Alexandra

E-mail address:info@statik.tu-berlin.de

Learning outcomes

Die Studierenden sind in der Lage, theoretische Grundlagen und Berechnungsverfahren der klassischen Statik in Bezug auf statisch unbestimmte Stabtragwerke anzuwenden. Sie können Beanspruchungen und Verformungen für verschiedene Tragwerkstypen mit einer Handrechnung ermitteln. Die Studierenden sind in der Lage, das Wesentliche am Tragverhalten zu erfassen, dieses in statische Modelle umzusetzen, die richtigen Verfahren für eine statische Berechnung zu wählen und die Berechnung durchzuführen, die Berechnungsergebnisse fachgerecht zu interpretieren und kritisch zu bewerten.

Expertise 50% of

Methodological competence 20%

Systems competence 20%

Social Competence 10

Course contents

Es werden das Kraftgrößenverfahren und das Weggrößenverfahren im klassischen Kontext vorgestellt und als Methoden angewandt, um die statische Unbestimmtheit von Stabtragwerken auf dualen Wegen entweder mit Kräften oder mit Wegen zu erfassen. Im Detail wird erlernt, wie man Zustands- und Einflusslinien von Kraft- und Weggrößen mit dem Kraft- und mit dem Weggrößenverfahren bzw. Drehwinkelverfahren berechnet.

Module components

Courses	Type	Number	Rotation	SWS
Structural analysis II	VL	06311200 L 21	SS	2
Structural analysis II	UE	06311200 L 22	SS	2
Structural analysis II	TUT	06311200 L 24	SS	2

Workload and credit points

Baustatik II (Vorlesung)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Preparation/postprocessing	15.0	1.0h	15.0h
			45.0h

Baustatik II (Übung)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Preparation/postprocessing	15.0	1.0h	15.0h
			45.0h

Baustatik II (Tutorium)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Preparation/postprocessing	15.0	1.0h	15.0h
			45.0h

Course-independent effort	Multiplier	hours	Total
Exam preparation	1.0	45.0h	45.0h
			45.0h

The effort of the module adds up to 180.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

Die Lehrformen sind Vorlesung, Übung, Tutorium und eigenständige Vor- und Nachbereitung des Lernstoffes.

Requirements for participation / examination

Desirable conditions for participation in the courses:

ein abgeschlossenes Modul „Baustatik I“ bzw. die Beherrschung der klassischen Statik für statisch bestimmte Stabtragwerke

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Grading:	Type of examination:	Language:	Duration/scope
graded	Written examination	German	: 120 minutes

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Die Anmeldeformalitäten sind im Internet unter <http://www.statik.tu-berlin.de> unter dem Punkt "Modulprüfungen" zu finden.

Weitere Informationen erteilt das Sekretariat unter info@statik.tu-berlin.de bzw. telefonisch unter (314) 72320.

References, Scripts

Skript in Papierform:

unavailable

Script in electronic form:

Recommended literature:

see lecture notes in the ISIS system

Assigned study programmes

This module is used on the following module lists: Civil

Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: SS 2019 WS 2019/20 SS

2020 Industrial Engineering and Management (Bachelor of Science)

StuPO 2015

Module lists of the semesters: SS 2019 WS 2019/20 SS

2020 Industrial Engineering (Master of Science)

StuPO 2015

Module lists of the semesters: SS 2019 WS 2019/20 SS 2020

Miscellaneous

Not specified



Grundbau und Bodenmechanik I (9 LP)

Title of the module:

Foundation engineering and soil mechanics I (9 LP)

website:
http://www.bau.tu-berlin.de/grundbau_und_bodenmechanik/
Credit points:

9

Secretary's office:

TIB 1-B 7

Display language:

German

Person in charge:

Rackwitz, Frank

contact person:

Aubram, Daniel

E-mail address:
frank.rackwitz@tu-berlin.de

Learning outcomes

Die Studierenden erlernen den natürlichen Baustoff Boden physikalisch zu beschreiben, sowie seine verschiedenen Zustandsparameter und sein mechanisches Verhalten als Baugrund richtig einzuschätzen. Hierzu werden grundlegende Vorgehensweisen bei der Untersuchung und Klassifikation des Baugrunds anhand verschiedener Verfahren näher erläutert. Das Verständnis für die Spannungs- und Verformungszustände im Baugrund werden den Studierenden näher gebracht. Aufbauend auf diesen Grundlagen werden die relevanten Gründungen und Stützbauwerke für Gebäude und Ingenieurbauwerke bezüglich ihrer Konstruktion, der Lastannahmen und dem grundbautechnischen Nachweis der Standsicherheit behandelt. Desweiteren werden Verfahren der Setzberechnung zum Nachweis der Gebrauchstauglichkeit vorgestellt. Die Studierenden sind anschließend in der Lage, Flachgründungen und Stützmauern sowie Böschungen zu planen sowie ihre Standsicherheit nachzuweisen und zu beurteilen. In einem semesterbegleitenden, freiwillig zu bearbeitenden Projekt können diese Fähigkeiten für die Praxis trainiert werden.

Fachkompetenz 50% Methodenkompetenz 30% Systemkompetenz 10% Sozialkompetenz 10%

Course contents

Physikalische und mechanische Eigenschaften des Bodens und deren Ermittlung im Labor, geotechnische Bodenuntersuchungen, Klassifikation von Böden, Spannungen im Baugrund, Festigkeits- und Verformungsverhalten von Böden, Grundwasserströmungen, Entwurf, Konstruktion und Bemessung von Flachgründungen, Stützmauern und Böschungen.

Module components

Courses	Type	Number	Rotation	SWS
Grundbau und Bodenmechanik I	IV	06311600 L 11	SS	6
Grundbau und Bodenmechanik I	TUT	06311600 L 13	SS	3

Workload and credit points

Grundbau und Bodenmechanik I (Integrierte Veranstaltung)	Multiplier	hours	Total
Time of presence	15.0	6.0h	90.0h
Preparation/postprocessing	15.0	2.0h	30.0h
			120.0h
Grundbau und Bodenmechanik I (Tutorium)	Multiplier	hours	Total
Time of presence	15.0	3.0h	45.0h
Preparation/postprocessing	15.0	1.0h	15.0h
			60.0h
Course-independent effort	Multiplier	hours	Total
Exam preparation	1.0	90.0h	90.0h
			90.0h

The effort of the module adds up to 270.0 hours. Thus the module comprises 9 credit points.

Description of the teaching and learning methods

Die Lehrform sind integrierte Lehrveranstaltungen, welche eigenständige Vor- und Nachbereitungen verlangen. In begleitenden Tutorien werden Beispiele zur integrierten Veranstaltung in kleinen Gruppen bearbeitet, Laborübungen durchgeführt sowie Erläuterungen für die freiwillige Projektaufgabe gegeben.

Die freiwillig zu bearbeitende Projektaufgabe kann parallel zu den Lehrveranstaltungen bearbeitet werden und dient als sinnvolle Vorbereitung für die schriftliche Prüfung.

Requirements for participation / examination

Desirable conditions for participation in the courses:

Grundkenntnisse in Statik und elementare Festigkeitslehre sowie in Baustatik I

Mandatory requirements for the registration for the module exam:*Not specified***Completion of the module**

Grading:	Type of examination:	Language:	Duration/scope
graded	Written examination	German	: 3 h

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Registration for the examination takes place at the responsible office of the central university administration, usually via the electronic registration system.

References, Scripts**Skript in Papierform:***unavailable***Script in electronic form:****Assigned study programmes**

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 2015

Module lists of the semesters: SS 2017 WS 2017/18 SS

2018 Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Civil Engineering (Teaching profession) (Bachelor of Science)

StuPO 2015

Module lists of the semesters: SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020 Bautechnik (Lehramt) (Master of Education)

StuPO 2015

Modullisten der Semester: SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Wirtschaftsingenieurwesen (Bachelor of Science)

StuPO 2015

Module lists of the semesters: SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020 Industrial Engineering (Master of Science)

StuPO 2015

Module lists of the semesters: SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Miscellaneous*Not specified*



Grundlagen der Bauphysik

Title of the module:

Basics of building physics

website:
<http://www.bauphysik.tu-berlin.de>
Credit points:

6

Secretary's office:

TIB 1-B 3

Display language:

German

Person in charge:

Vogdt, Frank Ulrich

contact person:

Vogdt, Frank Ulrich

E-mail address:
bauphysik@tu-berlin.de

Learning outcomes

Die Studierenden erwerben die Grundlagen des Wärme-, Feuchte- und Schalltransportes sowie des Brandschutzes. Ziel ist es, dass die Studierenden ein grundlegendes Verständnis für bauphysikalische Prozesse erlernen. Die erworbenen bauphysikalischen Kenntnisse können sie anschließend auf grundlegende Baukonstruktionen anwenden. Nach Abschluss des Moduls sind die Studierenden in der Lage Konstruktionsdetails bauphysikalisch richtig zu entwickeln und bauphysikalische Nachweise zu führen.

Professional competence 50

Methodenkompetenz 24 %

Systems competence 20 %

Sozialkompetenz 6 %

Course contents

- Winterlicher Wärmeschutz
- Sommerlicher Wärmeschutz
- Energetische Bilanzierung
- Arten des Feuchtetransports
- Tauwasserschutz
- Grundlagen des baulichen Schallschutzes

Module components

Courses	Type	Number	Rotation	SWS
Grundlagen der Bauphysik, Baukonstruktionen	TUT		WS	1
Grundlagen der Bauphysik, Baukonstruktionen	VL	06312300 L 00	WS	2
Grundlagen der Bauphysik, Baukonstruktionen	UE		WS	2

Workload and credit points

Grundlagen der Bauphysik, Baukonstruktionen (Tutorium)	Multiplier	hours	Total
Time of presence	15.0	1.0h	15.0h
			15.0h
Grundlagen der Bauphysik, Baukonstruktionen (Vorlesung)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Preparation/postprocessing	15.0	2.0h	30.0h
			60.0h
Grundlagen der Bauphysik, Baukonstruktionen (Übung)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
Preparation/postprocessing	15.0	2.0h	30.0h
			60.0h
Course-independent effort	Multiplier	hours	Total
Vorbereitung zur Klausur	1.0	45.0h	45.0h
			45.0h

The effort of the module adds up to 180.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

- Vorlesung: Theoretische Grundlagen
- Übung: Berechnung von Beispielaufgaben
- Tutorium: Eigenständiges Lösen von Aufgaben mit Betreuung

Requirements for participation / examination

Desirable conditions for participation in the courses:

None

Mandatory requirements for the registration for the module exam:*Not specified***Completion of the module**

Grading:	Type of examination:	Language:	Duration/scope
graded	Written examination	German	: 180 Minuten

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Die Anmeldeformalitäten werden in den Lehrveranstaltungen angegeben.

References, Scripts**Skript in Papierform:***nicht verfügbar***Script in electronic form:***unavailable***Assigned study programmes**

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS

2018 Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Civil Engineering (Teaching profession) (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020

Industrial Engineering and Management

(Bachelor of Science) StuPO 2015

Module lists of the semesters: SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Miscellaneous

Vorlesungsunterlagen werden über das ISIS-Portal bereitgestellt



Konstruktiver Ingenieurbau II

Title of the module:

Structural Engineering II

website:
<http://www.ek-stahlbau.tu-berlin.de/>
Credit points:

9

Secretary's office:

TIB 1-B 1

Display language:

German

Person in charge:

Geißler, Karsten

contact person:

Geißler, Karsten

E-mail address:

ek-stahlbau@tu-berlin.de

Learning outcomes

Eingebettet in den Ansatz der werkstoffübergreifenden Lehre und aufbauend auf dem Modul Konstruktiver Ingenieurbau I werden in diesem Modul die grundlegenden Kenntnisse zur Dimensionierung und konstruktiven Durchbildung von Bauteilen weitergeführt. Wesentliches Ziel ist es, die Studierenden zur Bemessung von Bauteilen und Verbindungen aus den klassischen Werkstoffen Stahl und Stahlbeton zu befähigen. Sie werden an komplexere Bemessungsaufgaben an stabförmigen und flächigen Konstruktionselementen herangeführt und können dann die erforderlichen Querschnittsdimensionen festlegen, die wesentlichen Tragsicherheitsnachweise auch unter Berücksichtigung von Stabilitätsproblemen führen sowie Verbindungspunkte konstruktiv umsetzen. Intensiviert wird die konstruktive Durchbildung im Stahl- wie im Stahlbetonbau. Zusätzlich wird ein Überblick über das Prinzip der Vorspannung und die Bemessung von Verbundträgern gegeben.

Fachkompetenz 60%; Methodenkompetenz 20%; Systemkompetenz 10%; Sozialkompetenz 10%

Course contents

- Stabilitätsprobleme druckbeanspruchter Bauteile (Knicken, Biegeknicken, Biegedrillknicken und Modellstützenverfahren)
- Prinzip der Vorspannung
- Grenztragfähigkeit von Stahlverbundträgern
- Bemessung typischer Stahlbauverbindungen (Schweiß- und Schraubverbindungen)
- Theorie der Plattentragwerke, massive Deckplatten
- Scheiben, Theorie der Stabwerkmodelle und deren Anwendung auf komplexe Situationen (D-Bereiche) wie Rahmenecken, Konsolen und Aussparungen

Module components

Courses	Type	Number	Rotation	SWS
Structural Engineering II	VL	06311500 L 11	WS	3
Structural Engineering II	TUT	06311500 L 13	WS	2
Structural Engineering II	UE	06311500 L 12	WS	3

Workload and credit points

Konstruktiver Ingenieurbau II (Vorlesung)	Multiplier	hours	Total
Time of presence	15.0	3.0h	45.0h
Preparation/postprocessing	15.0	2.0h	30.0h
			75.0h
Konstruktiver Ingenieurbau II (Tutorium)	Multiplier	hours	Total
Time of presence	15.0	2.0h	30.0h
			30.0h
Konstruktiver Ingenieurbau II (Übung)	Multiplier	hours	Total
Time of presence	15.0	3.0h	45.0h
Preparation/postprocessing	15.0	2.0h	30.0h
			75.0h
Course-independent effort	Multiplier	hours	Total
Exam preparation	1.0	90.0h	90.0h
			90.0h

The effort of the module adds up to 270.0 hours. Thus the module comprises 9 credit points.

Description of the teaching and learning methods

- Vorlesung: Theoretische Grundlagen
- Übung: Berechnung von Beispielaufgaben
- Tutorium: Eigenständiges Lösen von Aufgaben mit Betreuung von Tutoren

Requirements for participation / examination

Desirable conditions for participation in the courses:

- Baustatik I und II
- Structural engineering I

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Grading:	Type of examination:	Language:	Duration/scope
graded	Written examination	German	: 120 minuten

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

Die Anmeldeformalitäten werden in den Lehrveranstaltungen angegeben.

References, Scripts

Skript in Papierform:

verfügbar

Script in electronic form:

available

Recommended literature:

Literaturhinweise werden in den Lehrveranstaltungen gegeben.

Assigned study programmes

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2017/18 SS

2018 Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Industrial Engineering and Management (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS

2020 Industrial Engineering (Master of Science)

StuPO 2015

Module lists of the semesters: WS 2017/18 SS 2018 WS 2018/19 SS 2019 WS 2019/20 SS 2020

Miscellaneous

Not specified



Bachelorarbeit - Bauingenieurwesen (StuPO 2015)

Title of the module:

Bachelor thesis - civil engineering (StuPO 2015)

website:

Not specified

Credit points:

9

Secretary's office:

Not specified

Display language:

German

Person in charge:

Stephan, Dietmar Aloys

contact person:

Not specified

E-mail address:

Dietmar.Stephan@tu-berlin.de

Learning outcomes

Die Absolventinnen und Absolventen sind in der Lage ist, innerhalb einer vorgegebenen Frist ein Problem aus dem Bachelorstudiengang Bauingenieurwesen selbstständig unter Anleitung mit wissenschaftlichen Methoden zu bearbeiten.

Course contents

Die Bachelorarbeit wird i. d. R. im sechsten Fachsemester angefertigt. Sie hat einen Umfang von 9 LP. Die Anfertigung der Arbeit sollte semesterbegleitend erfolgen. Die Abgabe hat spätestens 15 Wochen nach Ausgabe des Themas zu erfolgen. Liegt ein wichtiger Grund vor, kann die/der Vorsitzende des Prüfungsausschusses eine Fristverlängerung bis zu vier Wochen, im Krankheitsfall bis zu 12 Wochen gewähren. Über weitere Ausnahmeregelungen entscheidet der Prüfungsausschuss.

Module components

Lehrveranstaltungen	Art	Nummer	Turnus	SWS
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Dieser Gruppe enthält keine Lehrveranstaltungen

Workload and credit points

Course-independent effort	Multiplier	hours	Total
Ausarbeitung	1.0	270.0h	270.0h
			270.0h

The effort of the module adds up to 270.0 hours. Thus the module comprises 9 credit points.

Description of the teaching and learning methods

selbstständige Bearbeitung unter Anleitung

Requirements for participation / examination

Desirable conditions for participation in the courses:

Für den Antrag auf Zulassung zur Bachelorarbeit sind folgende Nachweise bei der zuständigen Stelle der Zentralen Universitätsverwaltung vorzulegen:

- der Nachweis über die erfolgreich abgelegten Modulprüfungen aller Pflichtmodule im Umfang von 144 LP sowie
- der Nachweis des Praktikums gemäß § 5 Abs. 6 der zugehörigen Studien- und Prüfungsordnung vom 18.02.2015.

Mandatory requirements for the registration for the module exam:

- 1.) Modul *Baustoffe und Bauchemie I* (#60721) bestanden
- 2.) Modul *Grundlagen der Bauphysik* (#60961) bestanden
- 3.) Modul *Grundlagen der Bauinformatik* (#60727) bestanden
- 4.) Modul *Baustoffe und Bauchemie II* (#60724) bestanden
- 5.) Modul *Numerische Methoden im Bauingenieurwesen* (#60207) bestanden
- 6.) Modul *Grundbau und Bodenmechanik II* (#60960) bestanden
- 7.) Modul *Grundprojekt - Bauingenieurwesen* (#60965) bestanden
- 8.) Modul *Bauwirtschaft und Baubetrieb* (#60741) bestanden
- 9.) Modul *Grundlagen des Entwerfens und Konstruierens* (#60162) bestanden
- 10.) Modul *Kinematik und Dynamik* (#50366) bestanden
- 11.) Modul *Strömungsmechanik* (#60734) bestanden
- 12.) Modul *Öffentliches und privates Baurecht* (#60723) bestanden
- 13.) Modul *Baustatik I* (#60154) bestanden
- 14.) Modul *Systemtechnik I & II* (#60758) bestanden
- 15.) Modul *Konstruktiver Ingenieurbau I* (#60966) bestanden
- 16.) Modul *Analysis I und Lineare Algebra für Ingenieurwissenschaften* (#20122) bestanden
- 17.) Modul *Grundlagen des Straßenentwurfs und des Straßenbaus* (#50057) bestanden
- 18.) Modul *Grundlagen der Siedlungswasserwirtschaft* (#60729) bestanden
- 19.) Modul *Analysis II für Ingenieurwissenschaften* (#20130) bestanden
- 20.) Modul *Grundbau und Bodenmechanik I* (#60959) bestanden
- 21.) Modul *Statik und elementare Festigkeitslehre* (#50583) bestanden
- 22.) Modul *Grundlagen der Tragwerkslehre* (#60964) bestanden
- 23.) Modul *Konstruktiver Ingenieurbau II* (#60967) bestanden
- 24.) Modul *Baustatik II* (#60157) bestanden
- 25.) *Grundpraktikum - Bauingenieurwesen*

Completion of the module

Grading:	Type of examination:	Language:	Duration/scope
graded	Final Thesis	German	: Not specified

Test description:

Not specified

Duration of the module

This module can be completed in one semester.

Maximum number of participants

This module is not limited to a number of students.

Application formalities

gemäß AllgStuPO

References, Scripts

Skript in Papierform:

nicht verfügbar

Script in electronic form:

unavailable

Assigned study programmes

This module is used on the following module lists:

Civil Engineering (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2015/16 SS 2016 WS 2016/17 SS 2017 WS 2017/18 SS

2018 Civil Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS 2020

Miscellaneous

Not specified



Data Engineering

Module title:

data engineering

Credits:

6

Responsible person:

Hartmann, Timo

Office:

No information

Contact person:

Hartmann, Timo

Website:

http://civilsystems.tu-berlin.de

Display language:

Englisch

E-mail address:

timo.hartmann@tu-berlin.de

Learning Outcomes

More and more data is becoming available in the area of civil engineering that engineers need to make sense of and integrate into their design work. Examples of such data sources are ranging from sensor based measurements of infrastructure and buildings, to measurements of the environment (weather, water flows), to openly available geographic data. Lately civil engineers even have started to analyse sentiment data users have left on social media platforms such as Facebook or Twitter about their experience while using civil engineered products. At the end of this class, students will know about the basics of data engineering analysis - the art of asking the right questions for drawing insights from any of these data- sets to support sustainable civil engineering tasks.

After finalizing the module students will be able to apply the most common data mining and machine learning methods to data sets from the wider civil engineering field. Students will also have a good knowledge of how to assess the performance and quality of models and how to evaluate their applicability for prediction and sustainable decision making. Students will also develop first thoughts on the ethical ramifications of analyzing data with respect to for example, accounting for minorities that might not be well represented in a data set, but also with respect to potential biases that are introduced by the analysis methods.

Content

The module will teach the following methods:

- data mining patterns and sequences
- semantic text mining
- regression analysis
- correlation
- Bayesian classification
- decision trees and rule based classification
- black-box methods - neural networks and support vector machines
- unsupervised learning
- evaluation of predictive models
- data visualization: plotting and 3D

Module Components

Course Name	Type	Number	Cycle	SWS
data engineering	VL	3631 L 9034	SS	2
data engineering	PJ	3631 L 9035	SS	2

Workload and Credit Points

Data Engineering (Vorlesung)	Multiplier	Hours	Total
Time of presence	15.0	2.0h	30.0h
Preparation/postprocessing	15.0	4.0h	60.0h
			90.0h

Data Engineering (Projekt)	Multiplier	Hours	Total
Project work (weekly)	15.0	6.0h	90.0h
			90.0h

The Workload of the module sums up to 180.0 Hours. Therefore the module contains 6 Credits.

Description of Teaching and Learning Methods

- Read and comment on selected texts to acquire the fundamental knowledge about data engineering techniques
- Reflection and discussion of the techniques based on the texts; practice and application examples during lectures
- Project work: application of the techniques on a number of selected data sets from the civil engineering domain

Requirements for participation and examination

Desirable prerequisites for participation in the courses:

The module can be completed without any specific prior knowledge.

Ideally students have followed Systemtechnik I or a similar module teaching an introduction to stochastic. Some basic skills with R will also be helpful.

Mandatory requirements for the module test application:

No information

Module completion

Grading:	Type of exam:	Language:
graded	Portfolio examination 100 points in total	English

Grading scale:

Note:	1.0	1.3	1.7	2.0	2.3	2.7	3.0	3.3	3.7	4.0
Punkte:	95.0	92.0	89.0	86.0	83.0	80.0	77.0	74.0	71.0	68.0

Test description:

comments on literature
data engineering project assignments
The final data analytics challenge will require students to work in groups to analyze a real world data set under consideration of practical questions. Students will vote on the winner of this final challenge.

Test elements	Categorie	Points	Duration/Extent
Final data analytics challenge (group work)	practical	20	report of 5000 words
comments on literature	written	40	ca. 10 texts
data engineering project assignments	practical	40	ca. 7 assignments of around 900 words

Duration of the Module

This module can be completed in one semester.

Maximum Number of Participants

This module is not limited to a number of students.

Registration Procedures

Qispos

Recommended reading, Lecture notes

Lecture notes:

unavailable

Electronical lecture notes :

unavailable

Assigned Degree Programs

This module is used in the following modulelists:

Bauingenieurwesen (Bachelor of Science)

StuPO 2015 (1. Änderung 2018)

Modullisten der Semester: SS 2020

Geotechnology (Bachelor of Science)

StuPO 20.02.2019

Module lists of the semesters: SS 2020

Industrial Engineering and Management

(Bachelor of Science)

StuPO 2015

Module lists of the semesters: SS 2020

Industrial Engineering and Management

(Master of Science)

StuPO 2015

Module lists of the semesters: SS 2020

Miscellaneous

No information



Baubetrieb I

Title of the module:

Construction I

website:
Not specified
Credit points:

3

Secretary's office:
Not specified
Display language:

German

Person in charge:

Sundermeier, Matthias

contact person:
Not specified
E-mail address:

matthias.sundermeier@tu-berlin.de

Learning outcomes

Die Studierenden erwerben ein Verständnis grundlegender ökonomischer, organisatorischer und technischer Aspekte der Bauproduktion.

Die Studierenden,

- kennen die ökonomischen, verfahrenstechnischen und organisatorischen Anforderungen an eine kosten- und zeitoptimale sowie fachtechnisch ordnungsgemäße Ausführung von Bauleistungen,
- sind in der Lage, Aufgaben in der Arbeitsvorbereitung (z.B. Bauablaufplanung, Planung der Baustelleneinrichtung) für Bauvorhaben zu übernehmen,
- verfügen über Grundkenntnisse der Bauauftragsrechnung und können Einzelkosten für Bauleistungen methodisch sicher ermitteln,
- kennen die bau- und verfahrenstechnischen Anforderungen an die Bauausführung von Baugruben sowie Tragwerken in Stahlbeton-, Mauerwerk- oder Fertigteilbauweise,
- sind in der Lage, Managementaufgaben im Hinblick auf eine wirtschaftliche, termin- und qualitätsgerechte Leistungserstellung bei der Baustellenabwicklung zu übernehmen.

Das Modul vermittelt:

Fachkompetenz 50% Methodenkompetenz 30% Systemkompetenz 20% Sozialkompetenz 0 %

Course contents

Im Themenfeld ‚Produktionsplanung‘ werden Kenntnisse im Bereich folgender fachspezifischer Themenstellungen vermittelt:

- ökonomische Grundlagen der Bauproduktion
- Voraussetzungen einer wirtschaftlich optimierten Bauleistungserstellung
- Fertigungsprinzipien
- Methoden und Verfahren der Bauablaufplanung
- Bauverfahrenswahl und Baustelleneinrichtung
- Aufgaben und Systematik der Bauauftragsrechnung
- Kalkulation mit vorbestimmten Zuschlägen
- Einzelkostenermittlung

Im Themenfeld ‚Bauverfahrenstechnik‘ werden grundlegende Kenntnisse über die Bauverfahrenstechnik für die Ausführung von Rohbauarbeiten in Stahlbeton-, Mauerwerk- und Fertigteilbauweise vermittelt. Im Fokus stehen dabei die Belange der Bauausführung bzw. des Baustellenmanagements. Konkret werden folgende Themenkreise diskutiert:

- technische Grundlagen und Regelwerke
- Technische Vertragsbedingungen, AVA
- Geräteinsatz im Hoch- und Ingenieurbau
- Anforderungen an die Produktionsplanung
- Kalkulation/Einzelkostenermittlung
- Qualitätsmanagement der Bauausführung

Module components

Courses	Type	Number	Rotation	SWS
Construction I	IV		SS	3

Workload and credit points

Baubetrieb I (Integrierte Veranstaltung)	Multiplier	hours	Total
Time of presence		15.0	45.0h
Preparation/postprocessing		15.0	45.0h
			90.0h

The effort of the module adds up to 90.0 hours. Thus the module comprises 3 credit points.

Description of the teaching and learning methods

Die Lehrveranstaltung wird in Form einer integrierten Veranstaltung mit 3 SWS durchgeführt. Diese findet im Allgemeinen im wöchentlichen Rhythmus im SoSe statt.

Requirements for participation / examination

Desirable conditions for participation in the courses:

Wünschenswerte Voraussetzung für die Teilnahme an den Lehrveranstaltungen ist der erfolgreiche Abschluss des Moduls 'Bauwirtschaft I'

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Grading:	Type of examination:	Language:	Duration/scope
graded	Written examination	German	: 120 minutes

Duration of the module

This module can be completed in one semester.

Maximum number of participants

Die maximale Teilnehmerzahl beträgt 150

Application formalities

Werden jeweils in der ersten Veranstaltung bekannt gegeben.

References, Scripts

Skript in Papierform:

unavailable

Script in electronic form:

Assigned study programmes

This module is used on the following module lists: Civil

Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Modullisten der Semester: SS 2019 WS 2019/20 SS 2020

Verkehrswesen (Bachelor of Science)

StuPO 2009

Modullisten der Semester: SS 2019 WS 2019/20 SS 2020

Verkehrswesen (Bachelor of Science)

Transportation (BSc) - StuPO 2018

Module lists of the semesters: SS 2019 WS 2019/20 SS

2020 Industrial Engineering and Management (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2019/20 SS 2020

Miscellaneous

Not specified



Bauwirtschaft I

Title of the module:

Construction industry I

website:

Not specified

Credit points:

6

Secretary's office:

Not specified

Display language:

German

Person in charge:

Sundermeier, Matthias

contact person:

Not specified

E-mail address:

matthias.sundermeier@tu-berlin.de

Learning outcomes

Die Studierenden erwerben ein Grundverständnis für die Strukturen der Branche ‚Bauwirtschaft‘, für die Aufbau- und Ablauforganisation von Bauprojekten sowie für die Werkzeuge des Projektmanagements.

Die Studierenden,

- verstehen die volkswirtschaftliche Bedeutung der Bauwirtschaft und ihre Einordnung in den gesamtwirtschaftlichen Kontext,
- kennen die Akteursgruppen und die Produktionsstrukturen der Bauwirtschaft,
- sind in der Lage, Aufgaben in der Aufbau- und Ablauforganisation von Bauprojekten zu übernehmen und sind mit den wesentlichen Rechts- und Vertragsgrundlagen für Planungs- und Projektmanagementleistungen vertraut,
- verfügen über Grundkenntnisse der Projektablaufplanung sowie der Baukostenermittlung,
- kennen die Unternehmereinsatz- und Vertragsformen für die Bauleistungserstellung,
- sind in der Lage, einfache Leistungsbeschreibungen für Bauverträge zu erstellen.

Das Modul vermittelt:

Fachkompetenz 50% Methodenkompetenz 30% Systemkompetenz 20% Sozialkompetenz 0 %

Course contents

Im Themenfeld ‚Grundlagen der Bauwirtschaft‘ werden Kenntnisse im Bereich folgender fachspezifischer Themenstellungen vermittelt:

- Grundzüge der Baubranche - volkswirtschaftliche Einordnung und Markteteiligte
- Projektfertigung und Projektorganisation
- Ablauf der Planungsphase von Bauvorhaben
- Methodik der Kostenplanung
- Projektablaufplanung
- Leistungsbeschreibung

Im Themenfeld ‚Baurecht‘ werden grundlegende Kenntnisse über die rechtlichen Rahmenbedingungen der Durchführung von Bauprojekten vermittelt. Konkret werden folgende Themenkreise besprochen:

- Grundlagen des Vertragsrechts
- Planungsverträge
- Projektsteuerungsverträge
- Honorarrecht und Honorarermittlung
- Unternehmereinsatz- und Vertragsformen für die Baudurchführung
- Grundlagen der Bauvergabe

Module components

Courses	Type	Number	Rotation	SWS
Construction industry I	IV	06311 700 L 02	SS	4

Workload and credit points

Bauwirtschaft I (Integrierte Veranstaltung)	Multiplier	hours	Total
Time of presence	15.0	4.0h	60.0h
Preparation/postprocessing	15.0	8.0h	120.0h
			180.0h

The effort of the module adds up to 180.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

Das Modul wird in Form integrierter Veranstaltungen durchgeführt. Diese finden im Allgemeinen im wöchentlichen Rhythmus im SoSe statt.

Requirements for participation / examination

Desirable conditions for participation in the courses:

none

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Grading:
graded

Type of examination:
Written examination

Language:
German

Duration/scope:
Klausur, 240 Minuten

Duration of the module

This module can be completed in one semester.

Maximum number of participants

Die maximale Teilnehmerzahl beträgt 150

Application formalities

Die Anmeldeformalitäten werden in der ersten Veranstaltung bekannt gegeben.

References, Scripts

Skript in Papierform:

unavailable

Script in electronic form:

Assigned study programmes

This module is used on the following module lists: Civil

Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Transportation (Bachelor of Science)

StuPO 2009

Module lists of the semesters: WS 2018/19 SS 2019 WS 2019/20 SS

2020 Transportation (Bachelor of Science)

Transportation (BSc) - StuPO 2018

Module lists of the semesters: SS 2019 WS 2019/20 SS

2020 Industrial Engineering and Management (Bachelor of Science)

StuPO 2015

Module lists of the semesters: WS 2019/20 SS 2020

Miscellaneous

Not specified



Angewandte Baustoffprüfung

Title of the module:

Applied building material testing

website:
http://www.baustoffe.tu-berlin.de/menue/studium_und_lehre/
Credit points:

6

Secretary's office:

TIB 1-B 4

Display language:

German

Person in charge:

Stephan, Dietmar Aloys

contact person:

Lehmann, Christian

E-mail address:

stephan@tu-berlin.de

Learning outcomes

Die Studierenden lernen häufig angewandte Materialprüfungen in der Baustoffkunde sowohl von ihrem theoretischen Hintergrund als auch in der praktischen Anwendung kennen und werden so in die Lage versetzt den technischen und zeitlichen Aufwand, die Vorgehensweise sowie die nötigen Materialmengen, die für diese Untersuchungen nötig sind, zu bestimmen. Durch die selbstständige Arbeit in Kleingruppen an den unterschiedlichen Testeinrichtungen und Analyseverfahren, sowie der eigenständigen Auswertung der erhaltenen Ergebnisse wird ein Grundverständnis, sowohl für das jeweilige untersuchte Material, als auch für die Untersuchungsmethoden entwickelt. Zu den einzelnen Prüfmethode erhalten die Studierenden jeweils eine kurze theoretische Einweisung, anschließend wird die Methode praktisch an den Prüfeinrichtungen des Fachgebiets angewendet.

Mit den selbst produzierten Ergebnissen werden von den Studierenden zudem eigene Baustoffmischungen entworfen, die den grundlegenden Untersuchungen unterzogen werden. Die Ergebnisse dieser Untersuchungen werden abschließend gemeinsam bewertet.

Fachkompetenz 40 %,
 Methodenkompetenz 40 %,
 Systemkompetenz 10 %,
 Sozialkompetenz 10 %

Course contents

Die Studierenden sollen 3 verschiedene Betonmischungen selbst entwickeln. Hierzu werden Untersuchungen an den Ausgangsstoffen sowie an den Betonmischungen selbst durchgeführt. Die verwendeten Untersuchungsmethoden sind an die DIN EN 196 sowie an das Mischungskonzept nach Okamura angelehnt.

Ausgewählte Kapitel der Lehrveranstaltung:

- Bestimmung der Mahlfineinheit der Ausgangsstoffe
- Bestimmung des optimalen Wassergehaltes
- Zusatzmittelauswahl/Zusatzstoffauswahl
- Frischmörtel-/Frischbetonversuche
- Bestimmung der Erstarrungszeiten
- Bestimmung der Raumbeständigkeit
- Bestimmung der Hydratationswärme
- Festigkeitsprüfungen (Druck, Zug, E-Modul)

Module components

Courses	Type	Number	Rotation	SWS
Applied building material testing	IV		SS	4

Workload and credit points

Angewandte Baustoffprüfung (Integrierte Veranstaltung)	Multiplier	hours	Total
Präsenzzeit Vorlesungsanteil	15.0	1.0h	15.0h
Präsenzzeit Laborpraktikum	15.0	3.0h	45.0h
Vorbereitung der Praktika incl. Selbststudium der Normen	10.0	3.0h	30.0h
Nachbereitung der Praktika mit Erstellung von Kurzprotokollen	10.0	6.0h	60.0h
			150.0h

Course-independent effort	Multiplier	hours	Total
Vortrag	1.0	30.0h	30.0h
			30.0h

The effort of the module adds up to 180.0 hours. Thus the module comprises 6 credit points.

Description of the teaching and learning methods

Die zu vermittelnden Inhalte werden in Vorlesungen vorgestellt und in Praktika angewendet. Die eigenständige Durchführung der Untersuchungsmethoden wird in den Praktika vertieft, zu denen jeweils Protokolle zu erstellen sind. Abgeschlossen wird die Veranstaltung durch einen eigenständig ausgearbeiteten Vortrag zu einer ausgewählten Prüfmethode oder einen verwandten Themenbereich.

Requirements for participation / examination

Desirable conditions for participation in the courses:

Baustoffe und Bauchemie I + II

Mandatory requirements for the registration for the module exam:

Not specified

Completion of the module

Benotung:

benotet

Prüfungsform:

Portfolio review
100 points in total

Language:

German

Clef:

Test description:

Die Prüfung gilt als bestanden, wenn mindestens 50 % der Gesamtpunktzahl erreicht wurden. Dabei müssen aus beiden Prüfungselementen Punkte eingebracht werden. Einzelheiten zu den Prüfungselementen werden zu Beginn des Moduls bekannt gegeben.

Audit elements	Category	Points	Duration/scope
Protokolle zu den Praktikumsversuchen	in writing	60	5-10 Seiten
Vortrag mit Diskussion	verbally	40	20+10min

Duration of the module

This module can be completed in one semester.

Maximum number of participants

Die maximale Teilnehmerzahl beträgt 15

Application formalities

Die Anmeldung zum Modul erfolgt online zu Beginn der Veranstaltung. Voraussetzung für die Laborpraktika ist die persönliche Teilnahme an der Sicherheitseinführung, die einmal zu Beginn der Veranstaltung abgehalten wird.

References, Scripts

Skript in Papierform:

unavailable

Script in electronic form:

Recommended literature:

http://www.baustoffe.tu-berlin.de/menue/studium_und_lehre/literaturempfehlungen/

Assigned study programmes

This module is used on the following module lists: Civil

Engineering (Bachelor of Science)

StuPO 2015 (1st amendment 2018)

Module lists of the semesters: SS 2019 WS 2019/20 SS 2020

Miscellaneous

Not specified