Study plan

Name of study plan: Scénické technologie

Faculty/Institute/Others:
Department:
Branch of study guaranteed by the department: Welcome page
Garantor of the study branch:
Program of study: Scenic Technologies
Type of study: Bachelor full-time
Required credits: 180
Elective courses credits: 0
Sum of credits in the plan: 180
Note on the plan: platí pro nástup od akad. roku 2023/24

Name of the block: Compulsory courses in the program
Minimal number of credits of the block: 169
The role of the block: P

Code of the group: BS20230100
Name of the group: Scénické technologie, 1. semestr
Requirement credits in the group: In this group you have to gain at least 29 credits
Requirement courses in the group: In this group you have to complete at least 6 courses
Credits in the group: 29
Note on the group:

Code	Name of the course / Name of the group of courses *(in case of groups of courses the list of codes of their members)* *Tutors,* ***authors*** *and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
2011056	**Mathematics I** *Radka Keslerová, Marta Hlavová, Jiří Holman, Gejza Dohnal, Marta Čertíková, Vladimír Hric, Nikola Pajerová, Petr Louda, Lukáš Hájek, ...* ***Radka Keslerová*** *Gejza Dohnal (Gar.)*	Z,ZK	8	4P+4C	*	P
101KGSC	**Constructive Geometry** *Jana Čápová, Michal Zdražil, Jozef Bobok, Iva Malechová* ***Jana Čápová*** *Jana Čápová (Gar.)*	Z,ZK	4	2P+1C	Z	P
BBB37ZPR	**Programming Essentials** *Stanislav Vítek* ***Stanislav Vítek*** *Stanislav Vítek (Gar.)*	KZ	6	2P+2C	Z	P
2321089	**Technology and Materials 1** *Elena Čižmárová, Jakub Horník* ***Jakub Horník*** *Jakub Horník (Gar.)*	ZK	2	2P+0C+0L		P
129ZKGP	**Basics of Drawing and Graphic Presentation** *Jaroslav Daďa, Kamila Housová Mizerová, Martina Pytlová, Jiří Pošmourný, Jakub Ficenec, Vojtěch Vodička, Eva Antošová* ***Jana Hořická*** *Jaroslav Daďa (Gar.)*	KZ	5	5C	Z	P
B2B15UELA	**Introduction to Electrical Engineering** *Zdeněk Müller, Pavel Hrzina* ***Pavel Hrzina*** *Zdeněk Müller (Gar.)*	KZ	4	2P+1L	Z	P

Characteristics of the courses of this group of Study Plan: Code=BS20230100 Name=Scénické technologie, 1. semestr

2011056	Mathematics I	Z,ZK	8
In the course, greater emphasis is placed on the theoretical basis of the concepts discussed and on the derivation of basic relationships and connections between concepts. Students will also get to know the procedures for solving problems with parametric input. In addition, students will gain extended knowledge in some thematic areas: eigennumbers and eigenvectors of a matrix, Taylor polynomial, integral as a limit function, integration of some special functions.			
101KGSC	Constructive Geometry	Z,ZK	4
Projection and projection methods. Axonometry. Oblique projection, perpendicular axonometry, display of solids, cone, cylinder, pyramid, prism, sphere. Simple tasks in axonometry. Shading of geometric object and groups of objects in axonometry. Perspective projection. Curves, analytic description, Frenet frame, curvatures. Helical surfaces. Quadrics. One-sheeted hyperboloid of revolution. Hyperbolic paraboloid. Surfaces in civil engeneering. The use of spatial curves in design and art.			
BBB37ZPR	Programming Essentials	KZ	6
2321089	Technology and Materials 1	ZK	2
Students will be introduced to the classification of technical materials, types of phases and transformations, equilibrium diagrams. Other topics include mechanical properties, heat and chemical-heat treatment. Selected non-ferrous metals and their alloys. Classification and properties of plastics in practice. Composite materials, classification and properties.			
129ZKGP	Basics of Drawing and Graphic Presentation	KZ	5
The aim of teaching the subject is to acquire basic skills in creating and using manual three-dimensional drawing at such a level that this skill becomes a usable communication tool for further study and practice in the field of Scenic Technology. Students will become familiar with the graphic representation of geometric shapes, followed by more complex shapes of various structures and character. With various expressive drawing techniques. They will get to know the basic principles and types of composition, as well as the theory of colors and their use for different situations. They will get to know the basic rules of graphic editing when presenting photos in combination with text.			

B2B15UELA	Introduction to Electrical Engineering	KZ	4

Code of the group: BS20230200
Name of the group: Scénické technologie, 2. semestr
Requirement credits in the group: In this group you have to gain at least 26 credits
Requirement courses in the group: In this group you have to complete at least 6 courses
Credits in the group: 26
Note on the group:

Code	Name of the course / Name of the group of courses *(in case of groups of courses the list of codes of their members)* *Tutors, **authors** and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
2021019	**Physics and Advanced Technologies** *Vojtěch Smola, Zuzana Budinská, Zdeněk Kohout, Šimon Svoboda, Petr Vlčák, Petr Ducháček, Jan Koller Petr Vlčák (Gar.)*	Z,ZK	5	2P+1C+1L		P
124ZSSC	**Basic of Construction** *Ctislav Fiala **Ctislav Fiala** Ctislav Fiala (Gar.)*	Z,ZK	5	3P+2C	L	P
129NBSC	**Architectural typology** *Mikuláš Hulec, Lenka Popelová, Jindřich Svatoš, Vladimír Soukenka **Mikuláš Hulec** Mikuláš Hulec (Gar.)*	ZK	2	2P	L	P
2331073	**Technologies and materials 2** *Barbora Bryksí Stunová, Aleš Herman, Ladislav Kolařík, Petr Mikeš, Pavel Novák, Vít Novák, Pavel Rohan, Jan Šimota, František Tatíček, ... **Ladislav Kolařík** Ladislav Kolařík (Gar.)*	Z,ZK	3	2P+1C+0L		P
129SCP1	**Stage Operation 1** *Jaroslav Daďa, Jan Veselý **Jaroslav Daďa** Jaroslav Daďa (Gar.)*	KZ	5	3C	L	P
129KOMP	**Composition** *Jaroslav Daďa, Kamila Housová Mizerová, Martina Pytlová, Jiří Trojan, Jakub Ficenec, Vojtěch Vodička, Eva Antošová, David Baxa, Iva Dvořáková, ... **Jaroslav Daďa** Jaroslav Daďa (Gar.)*	KZ	6	4C	L	P

Characteristics of the courses of this group of Study Plan: Code=BS20230200 Name=Scénické technologie, 2. semestr

2021019	Physics and Advanced Technologies	Z,ZK	5
Kinematics and dynamics of a particle motion. Rigid body. Oscillations, waves. Electric field,magnetic field and materials. Electromagnetic field. Light, wave optics, geometrical optics. Interaction of radiation with matter. Photoelectric effect, x-rays, laser. Modern physics. Laboratories - measurements of 5 experiments related to the lectures.			
124ZSSC	Basic of Construction	Z,ZK	5
Introduction and related legislation, fundamentals of building construction. Functional requirements, construction systems, spatial effect of the structural system, interaction of elements. Vertical load-bearing structures, floor structures, overhanging structures. Stairs and ramps. Basic overview of selected completion construction - envelopes of buildings, roof envelopes, partitions, windows, floors, suspended ceilings - internal dividing structures and floors in terms of acoustics. Roof construction - traditional and modern timber roof trusses , modern roof construction. Foundation structures - excavation pits, surface and deep foundations. Sustainable construction news, trends in construction and research.			
129NBSC	Architectural typology	ZK	2
2331073	Technologies and materials 2	Z,ZK	3
The subject is designed as an overview subject, where the student gets to know the basic technologies and design of individual products.			
129SCP1	Stage Operation 1	KZ	5
129KOMP	Composition	KZ	6

Code of the group: BS20230300
Name of the group: Scénické technologie, 3. semestr
Requirement credits in the group: In this group you have to gain at least 28 credits
Requirement courses in the group: In this group you have to complete at least 7 courses
Credits in the group: 28
Note on the group:

Code	Name of the course / Name of the group of courses *(in case of groups of courses the list of codes of their members)* *Tutors, **authors** and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
129DDVS	**History of Theatre, Development of Stage Space** *Lenka Popelová, Veronika Šindelář Kastlová **Lenka Popelová***	ZK	2	2P	Z	P
125TZPB	**Building Services and Fire Safety of Buildings** *Pavla Hofbauer Pechová, Vladimír Mózer **Pavla Hofbauer Pechová** Pavla Hofbauer Pechová (Gar.)*	Z,ZK	5	2P+2C	Z	P
129PP1	**Computer Programs 1** *Vojtěch Dvořák, Lukáš Kolibár **Vojtěch Dvořák** Vojtěch Dvořák (Gar.)*	KZ	3	2C	Z	P
129MAFR	**Management and Financial Management** *Jaroslav Daďa, Jana Dvořáková **Jaroslav Daďa** Jaroslav Daďa (Gar.)*	ZK	2	2P	Z	P
2311018	**Fundamentals of constructions and machines** *Michael Valášek, Zbyněk Šika, Václav Bauma **Michael Valášek** Michael Valášek (Gar.)*	ZK	2	2P+0C+0L	*	P

BBB39MM1	**Multimedia 1** *Roman Berka, Libor Husník, František Rund* ***František Rund*** *Roman Berka (Gar.)*	Z,ZK	6	2P+2L	Z	P
129DFT1	**Theatre, Film and TV Project 1** *Jaroslav Daďa, Vladimír Soukenka, Iva Dvořáková, Veronika Šindelář Kastlová, Václav Vohlídal, Tereza Čivrná* ***Jana Hořická*** *Jaroslav Daďa (Gar.)*	KZ	8	8A	Z	P

Characteristics of the courses of this group of Study Plan: Code=BS20230300 Name=Scénické technologie, 3. semestr

129DDVS	History of Theatre, Development of Stage Space	ZK	2
The subject deals with the history of theater and scenic space.			
125TZPB	Building Services and Fire Safety of Buildings	Z,ZK	5
The course is focused on the most important aspects of fire safety of buildings with an emphasis on buildings for culture and the gathering spaces. Students will become familiar with important concepts from building fire safety (e.g. building categorization and fire code, fire sections, fire risk, fire hazard area and separation distances, evacuation and escape routes, fire fighting equipment, gathering space, etc.) in the context of buildings for culture and the gathering of people. Fire safety devices and their reserved types will be discussed in detail (mainly electric fire alarms, fixed fire extinguishing systems, smoke and heat extraction system). The use of fire safety devices will be demonstrated on practical examples.			
129PP1	Computer Programs 1	KZ	3
129MAFR	Management and Financial Management	ZK	2
2311018	Fundamentals of constructions and machines	ZK	2
Flexible bodies. Example of a bar under tensile stress: Load and internal force, stress, elongation, deformation. Elastic material, Hooke's law. Example of a beam stressed by bending: Loads and internal forces, tension, deflection, angular deflection, deformation. Basic terms from general flexibility - tension, deformation, extended Hooke's law, compatibile deformation (informative). Permanent deformation and strength. Dimensioning. Overview of scenic mechanisms. Overview of mechanisms and robots. Structure of mechanisms. Number of degrees of freedom. Number of drives and static determinity. Motion of a mass point and a body. Types of motions. Transformation matrix of motions. Light sources spectral and directional characteristics. Lighting systems optical principles. Basics of acoustics. Spatial acoustics. Basic principles of ventilation and heating. Air conditioning of cultural buildings.			
BBB39MM1	Multimedia 1	Z,ZK	6
The course gives students knowledge necessary to produce and edit multimedia content using variety of tools and creative methods. Lectures are focused on presentation of standards, technologies, methods and approaches commonly used in commercial and alternative creation processes. The presented topics include production process of multimedia content, interactive multimedia applications, data formats and compression methods, technical equipment to record video, lighting devices and their control. The course also contain problematics of archivation and distribution of multimedia content. The part of the course is also a project with use of presented technologies and methods.			
129DFT1	Theatre, Film and TV Project 1	KZ	8

Code of the group: BS20230400
Name of the group: Scénické technologie, 4. semestr
Requirement credits in the group: In this group you have to gain at least 28 credits
Requirement courses in the group: In this group you have to complete at least 7 courses
Credits in the group: 28
Note on the group:

Code	Name of the course / Name of the group of courses ***(in case of groups of courses the list of codes of their members)*** *Tutors,* ***authors*** *and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
129DUSC	**History of Art** *Josef Záruba Pfeffermann* ***Josef Záruba Pfeffermann*** *Josef Záruba Pfeffermann (Gar.)*	ZK	2	2P	L	P
129PP2	**Computer Programs 2** ***Vojtěch Dvořák***	KZ	3	2C	L	P
BBB37MM2	**Multimedia 2** *František Rund, Jan Bednář* ***Jan Bednář*** *František Rund (Gar.)*	Z,ZK	5	2P+2L	L	P
2331074	**Technologies and materials 3** *Barbora Bryksí Stunová, Jiří Kuchař* ***Jiří Kuchař*** *Jiří Kuchař (Gar.)*	Z,ZK	3	2P+1C+0L		P
2131027	**Design** *Jan Flek, Martin Havlíček, Jan Hoidekr* ***Jan Hoidekr*** *Jan Hoidekr (Gar.)*	Z,ZK	3	2P+1C+0L	*	P
129SCP2	**Stage Operation 2** *Jan Veselý* ***Jan Veselý*** *Jan Veselý (Gar.)*	KZ	2	2C	L	P
129DFT2	**Theatre, Film and TV Project 2** *Jaroslav Daďa, Vladimír Soukenka* ***Jaroslav Daďa*** *Vladimír Soukenka (Gar.)*	KZ	10	8A	L	P

Characteristics of the courses of this group of Study Plan: Code=BS20230400 Name=Scénické technologie, 4. semestr

129DUSC	History of Art	ZK	2
An overview of the history of European art from antiquity to modern times			
129PP2	Computer Programs 2	KZ	3
BBB37MM2	Multimedia 2	Z,ZK	5
2331074	Technologies and materials 3	Z,ZK	3
The subject is designed as an overview subject, where the student gets to know various surface treatment technologies and their use in design, and also deals with plastic processing technology - additive technology, standard technologies and composite processing technology.			
2131027	Design	Z,ZK	3
1.Introduction to dimensioning of components, properties of materials, designing 2.Machine operation, degradation (breakdowns, wear), diagnostics 3.Connections classification, threaded joints 4.Demountable joints (keys, wedges, pins, rings), pressed and riveted joints 5.Undemountable joints (welded, soldered and glued joints, springs, exercises - checking calclations of components) 6.Pipe technology (distribution, materials and connections, closures) 7.Engines, clutches and brakes 8.Sliding and rolling bearings, operation and inspection 9.Indirect transmissions (belts, chains and ropes). Friction gears 10.Gears. Variators (friction and chain) 11.Mechanisms (four-joint, crank, knee, sets, with intermittent movement, cam) 12.Hydrostatic mechanisms (sources, motors, controls, accessories) 13.Hydrodynamic mechanisms (couplings and converters), system dynamics			
129SCP2	Stage Operation 2	KZ	2

129DFT2	Theatre, Film and TV Project 2	KZ	10

Code of the group: BS20230500
Name of the group: Scénické technologie, 5. semestr
Requirement credits in the group: In this group you have to gain at least 28 credits
Requirement courses in the group: In this group you have to complete at least 6 courses
Credits in the group: 28
Note on the group:

Code	Name of the course / Name of the group of courses *(in case of groups of courses the list of codes of their members)* *Tutors,* ***authors*** *and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
129KVSS	**Design and Production** ***Jaroslav Daďa***	Z,ZK	3	2P+1C	Z	P
BBB32DATA	**Data Networks**	KZ	5	2P + 2C	Z	P
BBB37TZD	**Technology for Sound Design** ***Jan Bednář***	Z,ZK	4	2P+2L	Z	P
BBB37TSD	**Technology for Light Design** ***Jan Bednář***	Z,ZK	4	2P+2L	Z	P
BBB39DTM	**Dějiny a teorie médií** ***Roman Berka***	ZK	2	2P+0C	Z	P
129DFT3	**Theatre, Film and TV Project 3** ***Jaroslav Daďa***	KZ	10	10A	Z	P

Characteristics of the courses of this group of Study Plan: Code=BS20230500 Name=Scénické technologie, 5. semestr

129KVSS	Design and Production	Z,ZK	3
BBB32DATA	Data Networks	KZ	5
The purpose of the course is to introduce in a broader context the material that is subsequently discussed in detail in the specialized courses of the study program. It is important to show the decomposition of the function of a complex system into sub-components and to demonstrate the use of different types of communication systems and networks on selected real applications.			
BBB37TZD	Technology for Sound Design	Z,ZK	4
BBB37TSD	Technology for Light Design	Z,ZK	4
BBB39DTM	Dějiny a teorie médií	ZK	2
129DFT3	Theatre, Film and TV Project 3	KZ	10

Code of the group: BS20230600
Name of the group: Scénické technologie, 6. semestr
Requirement credits in the group: In this group you have to gain at least 30 credits
Requirement courses in the group: In this group you have to complete at least 2 courses
Credits in the group: 30
Note on the group:

Code	Name of the course / Name of the group of courses *(in case of groups of courses the list of codes of their members)* *Tutors,* ***authors*** *and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
129ROPS	**Guided Professional Practice**	Z	18	18C	L	P
129BAPS	**Bachelor Thesis** ***Jaroslav Daďa***	Z	12	10C	L	P

Characteristics of the courses of this group of Study Plan: Code=BS20230600 Name=Scénické technologie, 6. semestr

129ROPS	Guided Professional Practice	Z	18
129BAPS	Bachelor Thesis	Z	12

Name of the block: Compulsory elective courses
Minimal number of credits of the block: 8
The role of the block: PV

Code of the group: BS20230200_1
Name of the group: Scénické technologie, PV předmět, 2. semestr
Requirement credits in the group: In this group you have to gain at least 2 credits
Requirement courses in the group: In this group you have to complete at least 1 course
Credits in the group: 2

Note on the group: Pro absolventy nestavebních středních škol je důrazně doporučeno si zapsat předmět Zakreslování stavebních konstrukcí.

Code	Name of the course / Name of the group of courses *(in case of groups of courses the list of codes of their members)* *Tutors, **authors** and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
124YZSK	**Plotting of Building Structures** *Michal Ženíšek **Michal Ženíšek** Jan Růžička (Gar.)*	Z	2	2C	Z,L	PV
155YPDI	**Spatial Documentation of Interiors** *Martin Štroner, Karel Pavelka **Karel Pavelka***	Z	2	1P+1C	L	PV
2343013	**Fundamentals of Additive Technologies** *Jan Šimota Libor Beránek (Gar.)*	Z	2	1P+1C+0L		PV

Characteristics of the courses of this group of Study Plan: Code=BS20230200_1 Name=Scénické technologie, PV předmět, 2. semestr

124YZSK	Plotting of Building Structures	Z	2
The subject is focused on drawing construction drawings and the basics of AutoCAD.			
155YPDI	Spatial Documentation of Interiors	Z	2
2343013	Fundamentals of Additive Technologies	Z	2
Learning outcomes of the course unit the subject introduces basic known additive technologies and introduces students to the problems connected with additive technologies.			

Code of the group: BS20230300_1
Name of the group: Scénické technologie, PV předmět, 3. semestr
Requirement credits in the group: In this group you have to gain at least 2 credits
Requirement courses in the group: In this group you have to complete at least 1 course
Credits in the group: 2
Note on the group:

Code	Name of the course / Name of the group of courses *(in case of groups of courses the list of codes of their members)* *Tutors, **authors** and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
105YPDF	**Digital Photography** *Markéta Štindlová **Markéta Štindlová** Markéta Štindlová (Gar.)*	Z	2	2C	Z	PV
101YPOZ	**Computer Modelling of Objects** *Iva Malechová, Hana Lakomá **Hana Lakomá** Hana Lakomá (Gar.)*	Z	2	2C	Z	PV
105YPRA	**Law (general)** *Pavla Voříšková **Pavla Voříšková** Pavla Voříšková (Gar.)*	Z	2	2P	Z	PV

Characteristics of the courses of this group of Study Plan: Code=BS20230300_1 Name=Scénické technologie, PV předmět, 3. semestr

105YPDF	Digital Photography	Z	2
In the introduction, the basic technical principles of creating and preserving the electronic image will be explained as a basis for understanding the entire system. Further lessons will be devoted to the construction and control of photographic equipment and general and specific imaging techniques for various photodocumentation areas. We also pay special attention to digital image processing, basic optimization and advanced editing techniques. The basic software tools will be. Adobe Photoshop and Camera RAW. After mastering the techniques of building a photographic image, the course will lead learners to understand the specific speech of photography. We will clarify the principles of photographic image, compositional patterns and the possibilities of art solutions and effects. The subject follows the path from simple mechanical recording to author's expression. It will lead the listener to master all the means of photography and composing procedures to achieve perfect picture information as well as emotional exposure to the viewer. The form of the course is quite practical, seminar, atelier. Some tasks will be solved by the teacher together with the teacher, the other separately, with the procedures and results being consulted and discussed in the group. The tutorial will cover the entire photographic process from scanning, through editing to printing. The output will be a small set of each listener with an exhibition potential. The seminar program will not avoid any genre, but emphasis will be placed on the photo of architecture.			
101YPOZ	Computer Modelling of Objects	Z	2
Modeling of specified objects and own designs in 3D and visualization of obtained models. The tools used are the surface 3D NURBS modeler Rhinoceros and the parametric modeling module Grasshopper.			
105YPRA	Law (general)	Z	2

Code of the group: BS20230500_1
Name of the group: Scénické technologie, PV předměty, 4. a 5. semestr
Requirement credits in the group: In this group you have to gain at least 4 credits
Requirement courses in the group: In this group you have to complete at least 1 course
Credits in the group: 4
Note on the group:

Code	Name of the course / Name of the group of courses *(in case of groups of courses the list of codes of their members)* *Tutors, **authors** and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
129YAPS	**Applied Psychology** *Karel Smejkal, Iva Beňová **Karel Smejkal** Karel Smejkal (Gar.)*	Z	2	1P+1C	L	PV
129YOPA	**Heritage preservation** *Klára Kroftová **Klára Kroftová** Klára Kroftová (Gar.)*	Z	2	2P	L	PV

132YKPA	**Statics for Architecture**	Z	2	1P+1C	Z,L	PV
BBB37IOT	**Tools for IoT** *Stanislav Vítek* ***Stanislav Vítek*** *Stanislav Vítek (Gar.)*	Z	4	2P + 2L	L	PV
BBB39TVS	**Tvorba virtuálních světů** *Ondřej Slabý, David Sedláček* ***David Sedláček*** *David Sedláček (Gar.)*	Z	4	2P+2C	L	PV
125YNST	**HVAC and services design** *Hana Kabrhelová* ***Hana Kabrhelová*** *Hana Kabrhelová (Gar.)*	Z	2	1P+1C	Z,L	PV
2123004	**Fundamentals of Fluid Mechanics and Thermodynamics**	Z	2	1P+1C+0L		PV

Characteristics of the courses of this group of Study Plan: Code=BS20230500_1 Name=Scénické technologie, PV předměty, 4. a 5. semestr

129YAPS	Applied Psychology	Z	2
Applied application of psychology knowledge for engineering graduates.			
129YOPA	Heritage preservation	Z	2
The heritage fund of the Czech Republic is very extensive, extremely valuable and very diverse. The abundance of cultural monuments evokes the need for quality monument care, without which it is impossible to preserve this heritage for future generations.			
132YKPA	Statics for Architecture	Z	2
BBB37IOT	Tools for IoT	Z	4
BBB39TVS	Tvorba virtuálních světů	Z	4
125YNST	HVAC and services design	Z	2
Basic principles of the designing of sanitary systems, heating and ventilation. Design of the heat source, heat emitters, potable water demand, amount of ventilation air, design of air-handling unit and design of indoor systems.			
2123004	Fundamentals of Fluid Mechanics and Thermodynamics	Z	2
This course aims to provide students with a solid understanding of the core principles of fluid mechanics and thermomechanics and the ability to apply this knowledge to basic problems in stage technology. By the end of the course, students will be able to comprehend and analyze basic quantities and relationships in fluid mechanics and thermomechanics, as well as to independently solve basic problems in this field using analytical, numerical, and experimental methods. The course will focus on practical applications of these principles in stage technology, with particular emphasis on cooling of stage technologies and environment, air flow in the stage and auditorium, simulation, remote monitoring, and management of this environment. Additionally, a part of the course will be dedicated to exploring ways to enhance the energy efficiency of stage technology operations.			

Name of the block: Povinná tělesná výchova, sportovní kurzy
Minimal number of credits of the block: 0
The role of the block: PT

Code of the group: BTV_POV
Name of the group: Povinná tělesná výchova
Requirement credits in the group:
Requirement courses in the group: In this group you have to complete at least 2 courses
Credits in the group: 0
Note on the group:

Code	**Name of the course / Name of the group of courses** ***(in case of groups of courses the list of codes of their members)*** *Tutors,* ***authors*** *and guarantors (gar.)*	**Completion**	**Credits**	**Scope**	**Semester**	**Role**
TV1	**Physical Education**	Z	0	0+2	Z	PT
TV2	**Physical Education**	Z	0	0+2	L	PT

Characteristics of the courses of this group of Study Plan: Code=BTV_POV Name=Povinná tělesná výchova

TV1	Physical Education	Z	0
TV2	Physical Education	Z	0

Name of the block: Jazyky
Minimal number of credits of the block: 3
The role of the block: J

Code of the group: BF20190101_I
Name of the group: Povinně volitelný jazyk, 1. semestr
Requirement credits in the group: In this group you have to gain at least 1 credit
Requirement courses in the group: In this group you have to complete at least 1 course
Credits in the group: 1
Note on the group:

Code	Name of the course / Name of the group of courses *(in case of groups of courses the list of codes of their members)* *Tutors,* ***authors*** *and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
104YCA1	**English 1** *Karolína Synková, Alexandra Steinerová, Elena Dačeva, Jarmila Fučíková, Sandra Giormani, Hana Horká, Petra Martincová, Věra Čermáková, Michaela Németh, ...* ***Svatava Boboková Bartíková*** *Sandra Giormani (Gar.)*	Z	1	2C	Z,L	J
104YCN1	**German 1** *Svatava Boboková Bartíková* ***Svatava Boboková Bartíková*** *Svatava Boboková Bartíková (Gar.)*	Z	1	2C	Z,L	J

Characteristics of the courses of this group of Study Plan: Code=BF20190101_I Name=Povinně volitelný jazyk, 1. semestr

104YCA1	English 1	Z	1

English 1 Course code: 104Y CA1 Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit The aim of the compulsory English course is to enhance the knowledge of lexis and grammar within the scope of the chosen field of study and university studies in general (Academic English); the overall focus is on professional language (i.e., ESP - technical style) and communicative competence within the construction industry. The course also seeks to teach students to read technical literature and to be able to produce essential written discourse and to express themselves in writing on issues in their field of study. The end of course requirements are a credit. Literature: Horká Hana, Giormani Sandra, Martincová Petra, Nivenová Renata : Professional English for Civil Engineering (Units 1 - 5)

104YCN1	German 1	Z	1

The compulsory course - German Language for Civil Engineering is aimed at practising professional vocabulary within the scope of the construction industry, understanding professional texts, and learning the necessary presentation skills in order to present all relevant professional issues. The end-of-course requirement is a credit. Literature: A.Hanáková, J.Dressel: Deutsch im Bauwesen

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Code of the group: BF20190202_I
Name of the group: Povinně volitelný jazyk, 2. semestr
Requirement credits in the group: In this group you have to gain at least 2 credits
Requirement courses in the group: In this group you have to complete at least 1 course
Credits in the group: 2
Note on the group:

Code	Name of the course / Name of the group of courses *(in case of groups of courses the list of codes of their members)* *Tutors,* ***authors*** *and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
104YC2A	**English 2** *Karolína Synková, Alexandra Steinerová, Elena Dačeva, Jarmila Fučíková, Sandra Giormani, Hana Horká, Petra Martincová, Věra Čermáková, Michaela Németh, ...* ***Svatava Boboková Bartíková*** *Sandra Giormani (Gar.)*	Z,ZK	2	2C		J
104YC2N	**German 2** *Svatava Boboková Bartíková* ***Svatava Boboková Bartíková*** *Svatava Boboková Bartíková (Gar.)*	Z,ZK	2	2C		J

Characteristics of the courses of this group of Study Plan: Code=BF20190202_I Name=Povinně volitelný jazyk, 2. semestr

104YC2A	English 2	Z,ZK	2

English 2 Course code: 104YC2A Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit and exam The aim of the compulsory English course is to enhance the knowledge of lexis and grammar within the scope of the chosen field of study and university studies in general (Academic English); the overall focus is on professional language (i.e., ESP - technical style) and communicative competence within the construction industry. The course also seeks to teach students to read technical literature and to be able to produce essential written discourse and to express themselves in writing on issues in their field of study. The end of course requirements are a credit and an examination. Literature: Horká Hana, Giormani Sandra, Martincová Petra, Nivenová Renata : Professional English for Civil Engineering (Units 6 10)

104YC2N	German 2	Z,ZK	2

The compulsory course - German Language for Civil Engineering is aimed at practising professional vocabulary within the scope of the construction industry, understanding professional texts, and learning the necessary presentation skills in order to present all relevant professional issues. The end-of-course requirement is a credit. Literature: A.Hanáková, J.Dressel: Deutsch im Bauwesen

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List of courses of this pass:

Code	Name of the course	Completion	Credits
101KGSC	Constructive Geometry	Z,ZK	4

Projection and projection methods. Axonometry. Oblique projection, perpendicular axonometry, display of solids, cone, cylinder, pyramid, prism, sphere. Simple tasks in axonometry. Shading of geometric object and groups of objects in axonometry. Perspective projection. Curves, analytic description, Frenet frame, curvatures. Helical surfaces. Quadrics. One-sheeted hyperboloid of revolution. Hyperbolic paraboloid. Surfaces in civil engeneering. The use of spatial curves in design and art.

101YPOZ	Computer Modelling of Objects	Z	2

Modeling of specified objects and own designs in 3D and visualization of obtained models. The tools used are the surface 3D NURBS modeler Rhinoceros and the parametric modeling module Grasshopper.

104YC2A	English 2	Z,ZK	2
English 2 Course code: 104YC2A Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit and exam The aim of the compulsory English course is to enhance the knowledge of lexis and grammar within the scope of the chosen field of study and university studies in general (Academic English); the overall focus is on professional language (i.e., ESP - technical style) and communicative competence within the construction industry. The course also seeks to teach students to read technical literature and to be able to produce essential written discourse and to express themselves in writing on issues in their field of study. The end of course requirements are a credit and an examination. Literature: Horká Hana, Giormani Sandra, Martincová Petra, Nivenová Renata : Professional English for Civil Engineering (Units 6 10)			
104YC2N	German 2	Z,ZK	2
The compulsory course - German Language for Civil Engineering is aimed at practising professional vocabulary within the scope of the construction industry, understanding professional texts, and learning the necessary presentation skills in order to present all relevant professional issues. The end-of-course requirement is a credit. Literature: A.Hanáková, J.Dressel: Deutsch im Bauwesen			
104YCA1	English 1	Z	1
English 1 Course code: 104Y CA1 Scope: 0 + 2 (practical sessions) Number of credits: 1 Final assessment: credit The aim of the compulsory English course is to enhance the knowledge of lexis and grammar within the scope of the chosen field of study and university studies in general (Academic English); the overall focus is on professional language (i.e., ESP - technical style) and communicative competence within the construction industry. The course also seeks to teach students to read technical literature and to be able to produce essential written discourse and to express themselves in writing on issues in their field of study. The end of course requirements are a credit. Literature: Horká Hana, Giormani Sandra, Martincová Petra, Nivenová Renata : Professional English for Civil Engineering (Units 1 - 5)			
104YCN1	German 1	Z	1
The compulsory course - German Language for Civil Engineering is aimed at practising professional vocabulary within the scope of the construction industry, understanding professional texts, and learning the necessary presentation skills in order to present all relevant professional issues. The end-of-course requirement is a credit. Literature: A.Hanáková, J.Dressel: Deutsch im Bauwesen			
105YPDF	Digital Photography	Z	2
In the introduction, the basic technical principles of creating and preserving the electronic image will be explained as a basis for understanding the entire system. Further lessons will be devoted to the construction and control of photographic equipment and general and specific imaging techniques for various photodocumentation areas. We also pay special attention to digital image processing, basic optimization and advanced editing techniques. The basic software tools will be. Adobe Photoshop and Camera RAW. After mastering the techniques of building a photographic image, the course will lead learners to understand the specific speech of photography. We will clarify the principles of photographic image, compositional patterns and the possibilities of art solutions and effects. The subject follows the path from simple mechanical recording to author's expression. It will lead the listener to master all the means of photography and composing procedures to achieve perfect picture information as well as emotional exposure to the viewer. The form of the course is quite practical, seminar, atelier. Some tasks will be solved by the teacher together with the teacher, the other separately, with the procedures and results being consulted and discussed in the group. The tutorial will cover the entire photographic process from scanning, through editing to printing. The output will be a small set of each listener with an exhibition potential. The seminar program will not avoid any genre, but emphasis will be placed on the photo of architecture.			
105YPRA	Law (general)	Z	2
124YZSK	Plotting of Building Structures	Z	2
The subject is focused on drawing construction drawings and the basics of AutoCAD.			
124ZSSC	Basic of Construction	Z,ZK	5
Introduction and related legislation, fundamentals of building construction. Functional requirements, construction systems, spatial effect of the structural system, interaction of elements. Vertical load-bearing structures, floor structures, overhanging structures. Stairs and ramps. Basic overview of selected completion construction - envelopes of buildings, roof envelopes, partitions, windows, floors, suspended ceilings - internal dividing structures and floors in terms of acoustics. Roof construction - traditional and modern timber roof trusses , modern roof construction. Foundation structures - excavation pits, surface and deep foundations. Sustainable construction news, trends in construction and research.			
125TZPB	Building Services and Fire Safety of Buildings	Z,ZK	5
The course is focused on the most important aspects of fire safety of buildings with an emphasis on buildings for culture and the gathering spaces. Students will become familiar with important concepts from building fire safety (e.g. building categorization and fire code, fire sections, fire risk, fire hazard area and separation distances, evacuation and escape routes, fire fighting equipment, gathering space, etc.) in the context of buildings for culture and the gathering of people. Fire safety devices and their reserved types will be discussed in detail (mainly electric fire alarms, fixed fire extinguishing systems, smoke and heat extraction system). The use of fire safety devices will be demonstrated on practical examples.			
125YNST	HVAC and services design	Z	2
Basic principles of the designing of sanitary systems, heating and ventilation. Design of the heat source, heat emitters, potable water demand, amount of ventilation air, design of air-handling unit and design of indoor systems.			
129BAPS	Bachelor Thesis	Z	12
129DDVS	History of Theatre, Development of Stage Space	ZK	2
The subject deals with the history of theater and scenic space.			
129DFT1	Theatre, Film and TV Project 1	KZ	8
129DFT2	Theatre, Film and TV Project 2	KZ	10
129DFT3	Theatre, Film and TV Project 3	KZ	10
129DUSC	History of Art	ZK	2
An overview of the history of European art from antiquity to modern times			
129KOMP	Composition	KZ	6
129KVSS	Design and Production	Z,ZK	3
129MAFR	Management and Financial Management	ZK	2
129NBSC	Architectural typology	ZK	2
129PP1	Computer Programs 1	KZ	3
129PP2	Computer Programs 2	KZ	3
129ROPS	Guided Professional Practice	Z	18
129SCP1	Stage Operation 1	KZ	5
129SCP2	Stage Operation 2	KZ	2
129YAPS	Applied Psychology	Z	2
Applied application of psychology knowledge for engineering graduates.			
129YOPA	Heritage preservation	Z	2
The heritage fund of the Czech Republic is very extensive, extremely valuable and very diverse. The abundance of cultural monuments evokes the need for quality monument care, without which it is impossible to preserve this heritage for future generations.			

129ZKGP	Basics of Drawing and Graphic Presentation	KZ	5
The aim of teaching the subject is to acquire basic skills in creating and using manual three-dimensional drawing at such a level that this skill becomes a usable communication tool for further study and practice in the field of Scenic Technology. Students will become familiar with the graphic representation of geometric shapes, followed by more complex shapes of various structures and character. With various expressive drawing techniques. They will get to know the basic principles and types of composition, as well as the theory of colors and their use for different situations. They will get to know the basic rules of graphic editing when presenting photos in combination with text.			
132YKPA	Statics for Architecture	Z	2
155YPDI	Spatial Documentation of Interiors	Z	2
2011056	Mathematics I	Z,ZK	8
In the course, greater emphasis is placed on the theoretical basis of the concepts discussed and on the derivation of basic relationships and connections between concepts. Students will also get to know the procedures for solving problems with parametric input. In addition, students will gain extended knowledge in some thematic areas: eigennumbers and eigenvectors of a matrix, Taylor polynomial, integral as a limit function, integration of some special functions.			
2021019	Physics and Advanced Technologies	Z,ZK	5
Kinematics and dynamics of a particle motion. Rigid body. Oscillations, waves. Electric field,magnetic field and materials. Electromagnetic field. Light, wave optics, geometrical optics. Interaction of radiation with matter. Photoelectric effect, x-rays, laser. Modern physics. Laboratories - measurements of 5 experiments related to the lectures.			
2123004	Fundamentals of Fluid Mechanics and Thermodynamics	Z	2
This course aims to provide students with a solid understanding of the core principles of fluid mechanics and thermomechanics and the ability to apply this knowledge to basic problems in stage technology. By the end of the course, students will be able to comprehend and analyze basic quantities and relationships in fluid mechanics and thermomechanics, as well as to independently solve basic problems in this field using analytical, numerical, and experimental methods. The course will focus on practical applications of these principles in stage technology, with particular emphasis on cooling of stage technologies and environment, air flow in the stage and auditorium, simulation, remote monitoring, and management of this environment. Additionally, a part of the course will be dedicated to exploring ways to enhance the energy efficiency of stage technology operations.			
2131027	Design	Z,ZK	3
1.Introduction to dimensioning of components, properties of materials, designing 2.Machine operation, degradation (breakdowns, wear), diagnostics 3.Connections classification, threaded joints 4.Demountable joints (keys, wedges, pins, rings), pressed and riveted joints 5.Undemountable joints (welded, soldered and glued joints, springs, exercises - checking calclations of components) 6.Pipe technology (distribution, materials and connections, closures) 7.Engines, clutches and brakes 8.Sliding and rolling bearings, operation and inspection 9.Indirect transmissions (belts, chains and ropes). Friction gears 10.Gears. Variators (friction and chain) 11.Mechanisms (four-joint, crank, knee, sets, with intermittent movement, cam) 12.Hydrostatic mechanisms (sources, motors, controls, accessories) 13.Hydrodynamic mechanisms (couplings and converters), system dynamics			
2311018	Fundamentals of constructions and machines	ZK	2
Flexible bodies. Example of a bar under tensile stress: Load and internal force, stress, elongation, deformation. Elastic material, Hooke's law. Example of a beam stressed by bending: Loads and internal forces, tension, deflection, angular deflection, deformation. Basic terms from general flexibility - tension, deformation, extended Hooke's law, compatibile deformation (informative). Permanent deformation and strength. Dimensioning. Overview of scenic mechanisms. Overview of mechanisms and robots. Structure of mechanisms. Number of degrees of freedom. Number of drives and static determinity. Motion of a mass point and a body. Types of motions. Transformation matrix of motions. Light sources spectral and directional characteristics. Lighting systems optical principles. Basics of acoustics. Spatial acoustics. Basic principles of ventilation and heating. Air conditioning of cultural buildings.			
2321089	Technology and Materials 1	ZK	2
Students will be introduced to the classification of technical materials, types of phases and transformations, equilibrium diagrams. Other topics include mechanical properties, heat and chemical-heat treatment. Selected non-ferrous metals and their alloys. Classification and properties of plastics in practice. Composite materials, classification and properties.			
2331073	Technologies and materials 2	Z,ZK	3
The subject is designed as an overview subject, where the student gets to know the basic technologies and design of individual products.			
2331074	Technologies and materials 3	Z,ZK	3
The subject is designed as an overview subject, where the student gets to know various surface treatment technologies and their use in design, and also deals with plastic processing technology - additive technology, standard technologies and composite processing technology.			
2343013	Fundamentals of Additive Technologies	Z	2
Learning outcomes of the course unit the subject introduces basic known additive technologies and introduces students to the problems connected with additive technologies.			
B2B15UELA	Introduction to Electrical Engineering	KZ	4
BBB32DATA	Data Networks	KZ	5
The purpose of the course is to introduce in a broader context the material that is subsequently discussed in detail in the specialized courses of the study program. It is important to show the decomposition of the function of a complex system into sub-components and to demonstrate the use of different types of communication systems and networks on selected real applications.			
BBB37IOT	Tools for IoT	Z	4
BBB37MM2	Multimedia 2	Z,ZK	5
BBB37TSD	Technology for Light Design	Z,ZK	4
BBB37TZD	Technology for Sound Design	Z,ZK	4
BBB37ZPR	Programming Essentials	KZ	6
BBB39DTM	Dějiny a teorie médií	ZK	2
BBB39MM1	Multimedia 1	Z,ZK	6
The course gives students knowledge necessary to produce and edit multimedia content using variety of tools and creative methods. Lectures are focused on presentation of standards, technologies, methods and approaches commonly used in commercial and alternative creation processes. The presented topics include production process of multimedia content, interactive multimedia applications, data formats and compression methods, technical equipment to record video, lighting devices and their control. The course also contain problematics of archivation and distribution of multimedia content. The part of the course is also a project with use of presented technologies and methods.			
BBB39TVS	Tvorba virtuálních světů	Z	4
TV1	Physical Education	Z	0
TV2	Physical Education	Z	0

For updated information see http://bilakniha.cvut.cz/en/FF.html
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