



Architectural Engineering BSc Study Abroad Course List

Tuition-fee/credit: 140 USD

For course syllabi, please contact the Study Abroad Office!

Courses without prerequisites:

Course title	Semester	Credits (ECTS)
Mathematics 1.	Fall	4
Mechanics 1. (Statics)	Fall	5
Descriptive Geometry 1.	Fall	4
Design Studio 1	Fall	9
Building Constructions 1.	Fall	6
Construction Materials 1.	Fall	3
Architectural Drawing 2.	Fall	3
Digital Architecture 1.	Fall	3
History of Architecture 1.	Fall	3
Architectural Technology and Construction Management 1	Fall	3
Architectural Drawing 4.	Fall	3
History of Architecture 3.	Fall	3
Energy Systems 2.	Fall	3
Mathematics 2.	Spring	4
Art History	Spring	3
Architectural Drawing 3.	Spring	3
History of Architecture 2.	Spring	3
Energy Systems 1.	Spring	3
Architectural Drawing 5.	Spring	3
Introduction to Professional Practice	Spring	3
Architectural Theory	Spring	3
Introduction to Urban Planning	Spring	3

With prerequisites for students majoring in Architecture:

Strength of Materials 1.	Spring	3
Descriptive Geometry 2.	Spring	4
Architectural Drawing 1.	Spring	3
Design Studio 2.	Spring	6
Building Constructions 2.	Spring	6
Digital Architecture 2.	Spring	3
Architectural Technology and Construction Management 2.	Spring	3
Design Studio 4.	Spring	8



Building Constructions 4.	Spring	7
Design Studio 6.	Spring	8
Building Constructions 6.	Spring	7
Design Studio 3.	Fall	8
Building Constructions 3.	Fall	7
Architectural Technology and Construction Management 3.	Fall	3
Design Studio 5.	Fall	8
Building Constructions 5.	Fall	7

Detailed information about the courses:**Digital Architecture 1.**

Language of instruction:	English
Form of teaching:	practice
Class hours/week:	2
Credits (ECTS):	3
Course description:	This subject aims to provide an introduction to the use of computers in architectural design are introduced to the theory behind Computer Aided Design software and their practical use through the following topics: geometric construction and 3D modelling using architectural CAD software, application of materials and textures to the design components, preparation of explanatory and 3D images, phase drawings and animations, export of vector and pixel- graphic data files for image processing and editing programs, insertion of processed data and other digital images and texts into CAD drawings, preparation of presentation material. This subject includes an architectural design project in the practical part (marked with a P) where students can develop their architectural skills.
Assessment methods:	semester mark
Teaching period:	Fall Semester



Digital Architecture 2.

Language of instruction:	English
Form of teaching:	laboratory
Class hours/week:	2
Credits (ECTS):	3
Prerequisite:	Digital Architecture 1.
Course description:	Introduction of the contemporary planning software and BIM (Building Information Modeling) workflows. During the semester the students will get information about the different type of usage of the software and about the documentation possibilities with the help of a 3D model. This lecture and practical based course aims to give the basic knowledge about Building Information Modeling and to show the possibilities of the planning software. There will be comparisons between the traditional and new (based on BIM) methods. A lot of example will be presented to give the expected knowledge to the students. During the semester the students have to choose between 2 software (Graphisoft Archicad or Atodesk REVIT) which they would like to use.
Assessment methods:	Mid-term grade
Teaching period:	Spring Semester

**Descriptive Geometry 1.**

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	2 L, 2 P
Credits (ECTS):	4
Course description:	<p>The objective of this subject is to teach students the fundamentals of descriptive geometry, giving them practical skills through following topics; characteristics of the science, geometrical construction, theoretical sciences, basics of symbolic logic, geometrical transformation, projection representation, simple statements, representation of space structures, relations, the Monge system, universal existence, the fit, section, distance and angle of space structures. In addition to these topics students will study the basic concepts of set theory, finite and infinite sets, representation of geometrical bodies, the basics of geometry, principles of axonometry, the theory of parallelism and axiom, distance and angles in normal and oblique axonometry, classification of two-dimensional figures, regular geometrical bodies, index number representation (I section - fit, II distance - angle, III projective geometry), ideal space structures, second-order curves, surfaces and the construction of flat slab floors. This subject includes an architectural design project in the practical part (marked with a P) where students can practice and further develop the content of the lectures (marked with an L).</p>
Assessment methods:	exam
Teaching period:	Fall Semester



Descriptive Geometry 2.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	1 L, 2 P
Credits (ECTS):	4
Prerequisite:	Descriptive Geometry 1.
Course description:	This lecture and practical based course aims to develop the skills of architecture students regarding the following topics, in frame of descriptive geometry: Application of imagery methods used in architecture and by related branches of building industry and civil engineering, internalizing of switching among these in frame of the descriptive geometry. Detection and application of relation of sizes regarding projected elements by use of geometrical constructions, imagery and intersection of solids and polyhedrons. The studied imagery methods of this course are bases of the conventional axonometric projections, central projection like central axial collineation, orthogonal projections like Monge-system and multi view orthographic projection as well as bases of the contour map system.
Assessment methods:	Examination grade
Teaching period:	Spring Semester

**Mathematics 1.**

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	4
Credits (ECTS):	4
Course description:	<p>This lecture and practical based course aims to give architecture students a solid mathematics basis through covering the following topics: sets of numbers (natural, whole, rational and real numbers); vectors and operations with vectors, scalar and vector products and their applications; sets and operations with sets; projections; definition of functions; presentation of functions; polinoms; rational-fractional functions; algebraic functions; sequences of real numbers (definition of monotony, limitedness, convergence and divergence); limit value and continuity of functions; types of discontinuity; definition of tangents; differential calculus of functions in one variable, differential quotients, derivative, relation between differentiability and continuity; rules of derivation, derivatives of algebraic functions; integral calculus: definition of the primitive function and indefinite integral, properties of indefinite integrals, basic integrals, integral processes, definition of the Riemann integral, its geometric and physical meaning, integral function, Newton-Leibniz theory. Students learn the basics of mathematics enabling them to interpret and understand engineer sciences and through solving elementary tasks they deepen their basic theoretical knowledge in the field of engineering. The material of the practical matches the requirements of the different specializations.</p>
Assessment methods:	exam
Teaching period:	Fall Semester

**Mathematics 2.**

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	3
Credits (ECTS):	4
Course description:	<p>This lecture and practical based subject aims to extend students mathematics knowledge and its application to engineering and architecture through the following topics: definition of definite and indefinite integrals, calculus of definite integrals using the Newton-Leibniz theory, application of definite integrals to engineering (architectural) problems, calculation of volume and centres of gravity, analysis of multivariable functions, interpretation and application of partial derivatives, definition, calculus and application of double integrals in authentic practical problems. Students will also learn about transcendental functions: notable limit values and their derivation, application of differential calculus, Rolle's theorem, Lagrange's mean value theorem, rule of L'Hospital, testing functions, differentials of differentiable functions and their application for fault calculation, tangency of curves, osculating circles, curvature of the plane curve at P_0, Taylor-polinoms, integration with replacements, partial integration, special integrals, geometric and engineering applications of definite integrals, improprius integrals, numeric integration, examples with common differential functions, definition of differential equations, their classification and solutions, solution of differential equations of the first and second order, definition of multivariable functions, partial derivatives, gradients, extreme values of the multivariable function, definition of the double integral and its calculus in the standard range. The practical sessions are designed to meet the requirements of the different specializations.</p>
Assessment methods:	exam
Teaching period:	Spring Semester



Mechanics 1. (Statics)

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	4
Credits (ECTS):	5
Course description:	This course aims at teaching the basics of mechanics and covers the following topics: equilibrium states and conditions of equilibrium; resultant and balance of plane force systems; defining load-bearing structures, their types and loads. This theme is also expanded through the calculation of support reactions, simple hinged structures, loads on structures, calculation of loads, types of structural systems, definition and calculation of internal forces and internal force diagrams, definition of support and internal forces of joint structures, three-joint girders, Gerber girders and compound joint structures. The definition and types of truss is also covered and the forces influencing them. This subject intends to provide students with knowledge in the basics of mechanics, resultant and balance of plane force systems. An additional objective is to prepare students with a basic knowledge for planning construction structures.
Assessment methods:	exam
Teaching period:	Fall Semester



Art History

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	2
Credits (ECTS):	3
Course description:	The course covers the history of European art (sculpture and painting) from the Ancient Times to the Middle Ages. As an introduction, a short preliminary introduction delineates the geographical and historical background of the region, which includes in the earliest time not just Europe itself but also sections of the Middle East and especially Egypt. In discussing in Greco-Roman art, which forms the backbone of the course, the focus is very much on sculpture, the representation of man as the centre of the universe, and the changing perception of dignity, status and human feelings. The big changes in the Middle Ages, due mostly to the tenets of the Catholic religion and the new beginning after the „dark ages”, involve new forms of representation.
Assessment methods:	examination
Teaching period:	Spring Semester

**History of Architecture 1.**

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	2
Credits (ECTS):	3
Course description:	This subject is a follow up course in the history and theory of architecture, and summarizes ancient Christian events and architecture in the Middle Ages based on monumental architecture. The objective of the subject is to present the mainstreams of development, the evolution of medieval architecture and intends to improve knowledge of theoretical and historical aspects of architecture. Aesthetic standards and awareness are improved through the following topics: spread of Christianity, sacred and profane architecture in the Middle Ages, outstanding architectural monuments of Romanticism and Gothicism in Europe and Hungary. Through presenting the main spiritual movements and social changes in Europe, and their influence on architectural approach through characteristic buildings and sculptor's studios, students discover the concept of architecture and the different types of drawings characteristic of this era.
Assessment methods:	examination
Teaching period:	Fall Semester

History of Architecture 2.

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	2 L
Credits (ECTS):	3
Course description:	The purpose of this course is to outline the main streams of development throughout the ages and to interpret those adopting present concepts of architecture. In lectures, the theoretical and historical relations of architecture are investigated from a general historical, artistic, and architectural, on occasion structural aspect. Through presenting the main spiritual movements and social changes in Europe, and their influence on architectural approach through characteristic buildings and sculptor's studios, students discover the concept of architecture and the different types of drawings characteristic of this era.
Assessment methods:	Examination grade
Teaching period:	Fall Semester

**Architectural Drawing 1.**

Language of instruction:	English
Form of teaching:	practice
Class hours/week:	3 P
Credits (ECTS):	3
Prerequisite:	Design Studio 1.
Course description:	This practical based course enables students to acquire skills in free-hand drawing and painting. Laying special emphasis on familiarizing themselves with the use of different drawing methods and introducing them to their regularities paying special attention to the different type of perspective systems. As a basic objective, students are expected to be able to draw or sketch (with or without models) elements forms, acquire basic drawing techniques as well as apply different drawing methods in order to develop their visual form capabilities and use of tools. As a supplementary activity, students are provided with tasks which are suitable for improving and developing their spatial vision, combination skills and creativity. During the course students familiarize themselves with different painting methods, and painting techniques as aquarelle, and tempera.
Assessment methods:	Mid-term grade
Teaching period:	Spring Semester

Architectural Drawing 2.

Language of instruction:	English
Form of teaching:	practice
Class hours/week:	2
Credits (ECTS):	3
Course description:	This practical based course enables students to acquire skills in free-hand drawing, laying special emphasis on familiarizing themselves with the use of different perspective systems and introducing them to their regularities. As a basic objective, students are expected to cope with drawing models, acquire basic drawing techniques as well as apply different drawing methods in order to develop their visual form capabilities and use of tools. As a supplementary activity, students are provided with tasks which are suitable for improving and developing their spatial vision, combination skills and creativity. In addition to learning the basics of colour theory, students are expected to use a wide range of drawing techniques (e.g. pencil, crayon, ink and wash drawings) to express spatial arrangement and shadow effects. The course is the continuation of Architectural Drawing I. In accordance with their design program and through more and more complex tasks, students are introduced to the process of preparing drafts and using drawing methods with which built space can be expressed. This subject includes an architectural design project in the



	practical part (marked with a P) where students can develop their architectural skills.
Assessment methods:	semester mark
Teaching period:	Fall Semester

Architectural Drawing 3.

Language of instruction:	English
Form of teaching:	practice
Class hours/week:	3 P
Credits (ECTS):	3
Course description:	The Architectural Drawing 3. Course is studio work in the Architecture one-tier master program. This practical based course enables students to acquire skills in free-hand drawing, laying special emphasis on familiarizing them with the use of different perspective systems and introducing their regularities. The finished and accepted project is shown and presented at the end of the semester at the front of a Lecturer's Group for demonstrate the acquired knowledge and abilities.
Assessment methods:	Mid-term grade
Teaching period:	Spring Semester



Architectural Drawing 4.

Language of instruction:	English
Form of teaching:	practice
Class hours/week:	3 P
Credits (ECTS):	3
Course description:	<p>The Architectural Drawing 4. Course is studio work in the Architecture one-tier master program. This practical based course enables students to acquire skills in free-hand drawing, laying special emphasis on familiarizing them with the use of different perspective systems and introducing their regularities.</p> <p>The finished and accepted project is shown and presented at the end of the semester at the front of a Lecturer's Group for demonstrate the acquired knowledge and abilities.</p>
Assessment methods:	Mid-term grade
Teaching period:	Fall Semester

Architectural Drawing 5.

Language of instruction:	English
Form of teaching:	practice
Class hours/week:	3 P
Credits (ECTS):	3
Course description:	<p>The topics of the course has been based on the knowledge of the Architectural Drawing 1-4, so the focus is transposed on the architectural presentation in as freehand as digitally. The course gives a hand to develop the own building design project visualization, offers the possibility to take a part real applications or imagined project. The main purpose of the course is to evolve and to develop the students' own artistic language beginning form the first scathes to the final architectural view plans.</p>
Assessment methods:	Mid-term grade
Teaching period:	Spring Semester



Construction Materials 1.

Language of instruction:	English
Form of teaching:	Lecture, practice
Class hours/week:	2 L, 1 P
Credits (ECTS):	3
Course description:	<p>This course provides an introductory overview of the various materials used in construction industry. After an introduction into the history of building materials fundamental principles of structural, physical and long-term performance of materials are presented. Students will learn about material and product manufacturing techniques and how they relate to mechanical and non-mechanical properties of the various materials. Special emphasis is given in the course to concrete mix design and concrete technology.</p> <p>Students also have the opportunity to experience material capacity and behavior as well as construction methods in demonstrations and laboratory experiments. Furthermore, material applications and detailing in structural and non-structural building components are explored. Resulting from this course, students will gain a comparative knowledge of material properties and possible applications in construction and architecture.</p>
Assessment methods:	semester mark
Teaching period:	Fall Semester

**Building Constructions 1.**

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	3 L, 4 P
Credits (ECTS):	6
Course description:	<p>This subject intends to teach the following topics: requirements of building constructions; history of wall structures; walls built from small bricks, general rules of brick joints; modern masonry materials, skeleton ceramics, partition walls; lintels for openings of load-bearing wall structures, discharge of loads; masonry lintels, stone arches, reinforced concrete joists; requirements and planning aspects of stairs, interior stairs, structural solutions for radial stairs, interior stairs made of reinforced concrete, metal and wood, stair structures of residential and public buildings, structural design of monolithic reinforced concrete stairs, stair structures made of stone and cast stone, pre-fabricated stair structures, entrance stairs, terrain stairs. In addition students will be introduced to the regulations and requirements of flat floor structures, wooden ceiling structures, ceiling structures with steel beams, pre-fabricated reinforced concrete ceiling structures, the relationship between reinforced concrete beams and their lining, structural design of ring beams, monolithic reinforced concrete ceilings, floor coverings, structural breakthroughs in ceiling structures, curved ceiling structures, the historical development, types and structural design of vaults. This course provides a sound basis for students to improve their construction and structural design skills, through both the theory based lectures and through the practical element of the course, where students are introduced to the construction process of a residential building. This subject includes an architectural design project in the practical part (marked with a P) where students can practice and further develop the content of the lectures (marked with an L).</p>
Assessment methods:	examination
Teaching period:	Fall Semester

**Building Constructions 2.**

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	3 L, 4 P
Credits (ECTS):	6
Prerequisite:	Building Constructions 1.
Course description:	<p>The primary intention of this subject is to teach students the following theoretical topics: drawing representation of roof structures, wooden roof structures and joinery, Chevron roof structures, vacant and collar beam roof structures, purlin roof structures, roof structures with one, two and multiple support members, roof structure with slanted support members, purlin roofs with struts, mansard roof structures, hipped roof structures, carpenter joints, suspended roof structures, structural solutions for building in attics, damp-proofing requirements and their materials (bitumen and plastic layers), structural requirements of damp-proofing against soil moisture, horizontal and vertical wall insulation, horizontal floor insulation, insulation of footings, waterproofing against ground water, constructional solutions for structures penetrating insulation and connecting structures, types and requirements of foundations, systematization and rules of flat foundations, production of continuous footings, roofing, imbricate roof structures, tough roofing systems, tile roofing, concrete roof tiles, slate roofs, wooden and thatched roofs, boarded roofs, flashing and guttering, breakthroughs in roofing, metal plates, chimneys and gravitational ventilation. The topics listed above serve as a basic theoretical knowledge for students and are complimented by practical sessions where students work through the design of a residential building. This subject includes an architectural design project in the practical part (marked with a P) where students can practice and further develop the content of the lectures (marked with an L).</p>
Assessment methods:	examination
Teaching period:	Spring Semester

**Building Constructions 3.**

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	3 L, 4 P
Credits (ECTS):	7
Prerequisite:	Building Constructions 2.
Course description:	This course expands students' knowledge from what they learned in previous Building Constructions courses and covers the following topics: design and construction of monolith reinforced frame constructions; pile foundations; reinforced concrete frame stairs; expansion joints; methods of waterproofing and damp-proofing, traditional and modern waterproofing techniques (felt, sprayed, insulation coating etc.), materials of waterproofing and their application; utilized roofs, roofs open to pedestrian traffic, terraces, parking roofs and roofs with vegetation; internal structures for enclosing space, dry wall systems; mounted constructions, suspended ceilings and mounted floors, internal surfacing, floors and internal coverings; cavity walls design, external wall claddings; historic development of windows and doors; anatomy of windows and doors, glazing, physical installation aspects; traditional and modern windows and doors from wood, metal and plastic; skylights; shading. This subject includes an architectural design project in the practical part (marked with a P) where students can practice and further develop the content of the lectures (marked with an L).
Assessment methods:	exam
Teaching period:	Fall Semester

Building Constructions 4.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	3 L, 4 P
Credits (ECTS):	7
Prerequisite:	Building Constructions 3.
Course description:	During this course students will learn the constructional solutions of the reinforced concrete skeleton structures and we will get an overview of the topics of waterproofing, flooring and separation wall systems. The aim of the course is that students be able to make construction plan-like solutions based on the previous studies. Students need to work individually and in groups.
Assessment methods:	Examination grade
Teaching period:	Spring Semester



Building Constructions 5.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	3 L, 3 P
Credits (ECTS):	7
Prerequisite:	Building Constructions 4.
Course description:	This subject presents the methodology of structural design through the following lectures introducing students to wall and frame construction: systematization of halls and their load-bearing structures, the design and construction principles of components, framework, roof structures and external walls of prefabricated reinforced concrete halls; framework, external walls and roof structures of steel-framed halls; framework of timber- framed halls; sky lighting.
Assessment methods:	exam
Teaching period:	Fall Semester

**Design Studio 1.**

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	1 L, 3 P
Credits (ECTS):	9
Course description:	<p>Through the introduction of common problems related to the design of buildings and the architectural environment, Basics of Architecture aims to help students approach the essence and inner structure of a building. Through examples of national and international contemporary architecture, students study the methodology of the design process as well as those important factors which determine the location, geometry, etc. of the future building. Students must be able to interpret certain architectural solutions and situations.</p> <p>In the framework of getting prepared for design, students study operating buildings with similar functions and examples published in professional literature. On this basis they finalize their design project. In addition to their final drawing plans, they hand in their assignments at the end of the semester. Also assessed are the preliminary studies, the evaluation of different alternatives and the technical description of the concept together with the necessary sketches. The buildings are modelled as well.</p>
Assessment methods:	semester mark
Teaching period:	Fall Semester

History of Architecture 3.

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	2 L
Credits (ECTS):	3
Course description:	<p>This subject is a follow up course in the history and theory of architecture. The purpose of this course is to outline the main streams of development throughout the ages and to interpret those adopting present concepts of architecture. In lectures, the theoretical and historical relations of architecture are investigated from a general historical, artistic, and architectural, on occasion structural aspect. The following topics are covered in the lectures: architecture of classicism in different parts of Europe; ambitions in urban planning; pre-modern architectural tendencies, industrial architecture and secession.</p>
Assessment methods:	Drawings, questionnaire and final exam
Teaching period:	Fall Semester



Design Studio 2.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	1 L, 3 P
Credits (ECTS):	6
Prerequisite:	Design Studio 1.
Course description:	<p>This course serves as an introduction to the home environment and gives students a theoretical and practical basis for designing residential buildings. To achieve this, lectures are given in the following topics: arrangement of space in a house, fixtures in a house, suitable floor plan layout of spaces, external appearance of the building (familiarization with an emphasis on the deviations and differences depending on sitting arrangements), service requirements, types of residential building, and the history of residential buildings. In their semester assignment, students present the problems arising from mass formation and the sitting arrangements of buildings and during the practical sessions, they prepare models and are taught techniques and tools of representation (drawing tools, methods and tools for modelling). This subject includes an architectural design project in the practical part (marked with a P) where students can practice and further develop the content of the lectures (marked with an L).</p>
Assessment methods:	semester mark
Teaching period:	Spring Semester

**Design Studio 3.**

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	1 L, 3 P
Credits (ECTS):	8
Prerequisite:	Design Studio 2., Building Constructions 2.
Course description:	<p>This course introduces to the students the theory and professional elements of architecture and reveals the general correlation necessary for further studies. The lectures and practicals cover the methods of site arrangement and building types applied to them together with their specific requirements, and a historic development of building types with an analysis of practically applied solutions. The main objectives of practicals in this semester is to have students practice the basics of housing design, to develop their skills in problem identification and decision-making, to improve their architectural skills and to teach them how to get an overview over a range of housing designs. Students prepare several assignments in the course of the semester. The subject covers design problems of the main types of residential buildings (detached houses, semi and terraced housing, blocks of flats) and experience is gained through the practical component in architectural planning, deepening the fundamentals of designing residential buildings. Problems sensing skills are developed through a specified task on designing residential buildings. To assist with representation, techniques are taught including model construction. This subject includes an architectural design project in the practical part (marked with a P) where students can practice and further develop the content of the lectures (marked with an L).</p>
Assessment methods:	semester mark
Teaching period:	Fall Semester

**Design Studio 4.**

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	1 L, 4 P
Credits (ECTS):	8
Prerequisite:	Design Studio 3.
Course description:	<p>The Design Studio 4. Course is studio work in the Architecture one-tier master program, and is carried out as an individual design project during the mid - term of the programme. The course focuses on the design procedure of a new multi-storey residential building, students have to define the client, establish the program, propose and develop the design, schedule the work.</p> <p>The finished and accepted project is shown and presented at the end of the semester at the front of a Lecturer's Group for demonstrate the acquired architectural knowledge and abilities.</p>
Assessment methods:	Mid-term grade
Teaching period:	Spring Semester

Design Studio 5.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	2 L, 3 P
Credits (ECTS):	8
Prerequisite:	Design Studio 4., Building Constructions 4.
Course description:	<p>Students are required to complete design work relating to public buildings and an actual building site. Students are required to submit all their plans documenting their work on the design and are assessed on the following aspects: architectural design, development concept, functionality, volume forming and space composition. For the preliminary and final plans only free-hand graphics can be used. Students are also required to complete a model of the final plan in a material of their choice.</p> <p>The following aspects of public building design are covered: design work of specified types of public buildings, content programmes, optimal layout of the designed content on the floor plan, external appearance of the building (deviation from residential buildings and emphasis on the differences), volume design practice, methods of representation, and preparation of colour designs.</p>
Assessment methods:	exam
Teaching period:	Fall Semester

**Design Studio 6.**

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	2 L, 4 P
Credits (ECTS):	8
Prerequisite:	Design Studio 5.
Course description:	<p>In the Design Studio 6 course the students get acquainted with the general questions of designing of public buildings and the relations between the urban system and the buildings. The course focuses on the design method of a public building, students have to define the client, establish the program, propose and develop the design, schedule the work.</p> <p>The task is to design a public building in a downtown area. The finished and accepted project is shown and present at the end of the semester at the front of a Lecturer's Group for demonstrate the acquired architectural knowledge and abilities.</p>
Assessment methods:	Mid-term grade
Teaching period:	Spring Semester

Architectural Technology and Construction Management 1.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	1 L, 1 P
Credits (ECTS):	3
Course description:	<p>This subject introduces students to the characteristics of the construction industry, the relationship between construction technology and the related scientific fields, the key processes behind construction preparation and subsurface construction works related to surface construction. It also covers the basic principals of planning, managing and controlling construction works, beginning with the take-over of a construction site, preparatory works and demolition works. Other topics covered include: earthworks, marking out the working site, preparation of foundations, machinery management, earthworks machinery, quality control measures such as SWOT analysis and its role in quality assurance, foundations, damp-proofing and waterproofing, construction of vertically walled load-bearing structures and construction of slabs from prefabricated components.</p> <p>This subject includes an architectural design project in the practical part (marked with a P) where students can practice and further develop the content of the lectures (marked with an L).</p>
Assessment methods:	examination
Teaching period:	Fall Semester

**Architectural Technology and Construction Management 2.**

Language of instruction:	English
Form of teaching:	lecture, laboratory
Class hours/week:	1 L, 1 Lab
Credits (ECTS):	3
Prerequisite:	Architectural Technology & Construction Management 1.
Course description:	This subject provides theoretical and practical training. During the lectures and practical sessions of the semester, students will gain competitive knowledge in the field of construction implementation and construction management. Building modelling, quantity calculation, costing and budgeting, workplace scheduling, organizational deployment make up the tasks of the semester for students.
Assessment methods:	Examination grade
Teaching period:	Spring Semester

Architectural Technology and Construction Management 3.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	1 L, 2 P
Credits (ECTS):	3
Prerequisite:	Architectural Technology & Construction Management 2.
Course description:	This subject provides theoretical and practical training in the Architect BSc degree program. During the lectures and practical sessions of the semester, students will gain competitive knowledge in the field of construction implementation and construction management. Building modelling, workplace scheduling, organizational deployment, design of construction workflow, time planning make up the tasks of the semester for students.
Assessment methods:	Examination grade
Teaching period:	Fall Semester



UNIVERSITY OF PÉCS

Rector's Cabinet
International Centre

**Complex Design 1.**

Language of instruction:	English
Form of teaching:	practice
Class hours/week:	5
Credits (ECTS):	6
Course description:	<p>The purpose of this course is to introduce students to architectural design from a complex view that is, covering those parts of the planning process, which are supervised by specialized departments. Furthermore, this subject intends to have students practice the design phase related to documentation required for planning permission. During the preparation period, students study existing buildings with similar functions and examples in special scientific literature, and on this basis, they finalize their design project. During the design process, they continuously consult with the appointed or chosen teachers from the Department of Design and Architectural Studies, the Department of Strength of Materials and Load-Bearing Structures, the Department of Building Constructions, the Department of Electrical Networks and the Department of Building Services Engineering as well as with external specialists, if needed. In the course of the Complex Design Project, students finalize the load-bearing, building construction and building services systems of the building and the construction technology. In addition to their final drawings, at the end of the semester they submit their essay, which includes preliminary studies, the assessment of the different alternatives, the technical description of the architectural unit and the necessary drafts. Students normally construct a model as well. Their work is evaluated by the different departments with 70% of the total awarded for architectural work and the three co- departments give 30% (=3x10%). This subject includes an architectural design project in the practical part (marked with a P) where students can develop their architectural skills.</p>
Assessment methods:	semester mark
Teaching period:	Fall Semester

Building Constructions 6.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	2 L, 2 P
Credits (ECTS):	7
Course description:	The aim of the course is to give students an overview of the



	<p>nonconventional load bearing structures used in building construction to describe the forces in particular structures and to examine how these structures are used through the analysis of load bearing structures of existing buildings. Students analyse and learn about the relationship between material, structure, function and form. After a brief overview of historical structures, first of all structures cable structures, tents and membrane structures, then shell structures are discussed. Students learn about the works of several architects excelling at structural design (Frei Otto, P.L. Nervi, S. Calatrava, etc.). This subject includes an architectural design project in the practical part (marked with a P) where students can practice and further develop the content of the lectures (marked with an L).</p>
Assessment methods:	Participation, Design Task, Case Study Presentation
Teaching period:	Spring Semester



Energy Systems 1.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	1 L, 1 P
Credits (ECTS):	3
Course description:	<p>The goal of the course is to transfer the most important information on building services engineering especially on requirements to fit the equipment into the building.</p> <p>Traditional and modern buildings vs local climate conditions, weather;</p> <p>Ventilation systems: types of ventilation, dimensional basics, fans, air handling units, air ducts, air inlets, diffusers;</p> <p>Air conditioning systems: working principals of air conditioning systems, types of system layout;</p> <p>Sanitary systems: sanitary equipment, typical layout, pipeline materials and dimensions;</p> <p>Drainage: typical layout, pipeline materials and dimensions;</p> <p>Heating systems: dimensional basics, heat sources, heat distribution systems, heat emitters.</p>
Assessment methods:	examination grade
Teaching period:	Spring Semester

**Energy Systems 2.**

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	1 L, 2 P
Credits (ECTS):	3
Course description:	Thermal conductivity, Heat transfer coefficient, Multidimensional heat flow, thermal bridges, Non-steady state heat transfer, Heat storage capacity, Psychometry, Solar radiation, Shadow chart, Energy balance of windows, Energy in buildings basics. Get to know the thermal basics, requirements, regulations, regulations and EU directives of building physics and building energy. Basic forms of heat transfer, thermal transmittance coefficient, layer boundary temperatures. Multidimensional heat flows, thermal bridges. Linear heat transfer coefficient and resulting heat transfer coefficient. Heat flow of surfaces in contact with the ground. Radiant thermal balance of glazed structures. Properties of wet air. Moisture uptake of porous materials, sorption isotherm. Surface condensation, capillary condensation, mold growth. Room humidity balance. Evaporative diffusion in steady state and non-steady state cases. Moisture content of the structures, filling time. Ecliptic diagram, insolation and shading. Unsteady processes in time: heat storage mass, damping, delay. Energy requirements for buildings, building energy standards, regulations. The basics of energy in buildings. To control the risk of summer overheating. Thermal comfort basics.
Assessment methods:	examination grade
Teaching period:	Spring Semester

**Introduction to Professional Practice**

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	3 L
Credits (ECTS):	3
Course description:	<p>The comprehensive introduction of project management and enterprise management mainly in the field of engineering. The terminology of the enterprises, study of its external and internal environment. The creation of company strategy and its role. The appearance of innovation in different projects. The increase of the competitiveness of the companies who has project management. The issues of enterprise crisis management.</p> <p>The topics of project financing. The aim of this course is the appearance of project management throughout the enterprises within the engineering practice mainly in the fields of architecture discipline. Apart from the comprehensive knowledge of project and enterprise management the key element of this course is to increase the synergy of the associated sciences in an embedded way within the engineering sciences.</p>
Assessment methods:	Examination grade
Teaching period:	Spring Semester

Architectural Theory

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	2 L
Credits (ECTS):	3
Course description:	<p>This subject expands on previously taught material and deals with the theory and theory history of architecture. Students are introduced to the evolution of international and Hungarian architecture, where trends are presented and analyzed and the theory of architectural ideology and approach is examined in the 20th and 20th century, especially theory dealing with modernism and contemporary architecture. Through these studies, which give students a strong theoretical base, students are expected to develop and expand on their own personal perception of architecture and architectural design. Course content includes excerpts on design theory from the history of classical, modernist architecture and contemporary architecture. Topics are the followings:</p> <p>Theory history, Space and Time in Architecture, Methods of forming and shaping, Concepts: the practices of conceptual planning, Form and function, Signs and symbols in Architecture</p>
Assessment methods:	Examination grade
Teaching period:	Spring Semester

**Introduction to Urban Planning**

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	3 L
Credits (ECTS):	3
Course description:	<p>Introducing the World of settlements/urban areas is the primary task of the semester. Elements of the fabric of the settlement such as site, buildings, streets, squares, parks, gardens are in the focus of the first part of semester with some preliminary analysis methods, then the system of complex analysis in urban scale is highlighted.</p> <p>The second part of the course covers the short history of the urban planning then the topic goes on with the system of urban planning. The different units are given in lectures then practiced in a given settlement, connected to the topic of the "Design Studio 6" course.</p>
Assessment methods:	Mid-term grade
Teaching period:	Spring Semester

Strength of Materials 1.

Language of instruction:	English
Form of teaching:	practice
Class hours/week:	2 P
Credits (ECTS):	3
Prerequisite:	Mechanics 1. (Statics)
Course description:	<p>The Strength of Materials course will provide to students the understanding of the concepts of Stresses and its types, then a closer more accurate view to the structural-understanding. All in order to help them in the future in their structural design courses. Upon successful completion of this course, the student will be able to know and understand: The Moment of Inertia, and the general inertia concept of a section; Geometrical Properties of a section, Section's Shape factor; Types of Stresses and their calculation; The Concept of Strain; Hawk's Law and the Elasticity Modulus; Axial Stresses, Shear Stresses, Bending Stresses, Torsion Stresses; Eccentric axial actions & the concept of Buckling; Bi-axial Bending Actions; Deflections and Deformations.</p>
Assessment methods:	Exam grade
Teaching period:	Spring Semester