Architecture
Study Abroad Course List

Tuition-fee/credit: 140 USD

For course syllabi, please contact the Study Abroad Office!

Course title	Semester	Credits (ECTS)
Digital Architecture1	Fall	3
Descriptive Geometry 1.	Fall	4
Mathematics 1.	Fall	4
Statics	Fall	5
Lectures on Architecture I. (Master Course)	Fall	3
History of Architecture 1.	Fall	3
Digital Presentation (Master Course)	Fall	3
Architectural Drawing 2.	Fall	3
Architectural Drawing 4.	Fall	3
Building Constructions 1.	Fall	6
Building Constructions 3.	Fall	7
Building Construction 5	Fall	7
Design Studio 1.	Fall	9
Design Studio 3.	Fall	8
Design Studio 5.	Fall	8
Construction Materials	Fall	3
Architectural technology & constuction management 1.	Fall	3
Architectural technology & constuction management 3.	Fall	3
Complex Design 1. (Master Course)	Fall	6
Complex Design 3. (Master Course)	Fall	11
Complex building constructions (Master Course)	Fall	6
Digital Architecture 2	Spring	3
Descriptive Geometry 2.	Spring	4
Mathematics 2.	Spring	4
Strength of Materials / Mechanics	Spring	3
Lectures on Architecture 2.	Spring	2
Art History	Spring	3
History of Architecture 2.	Spring	3
Architectural theory	Spring	3
Architectural Drawing 1.	Spring	3
Architectural Drawing 3.	Spring	3
Architectural Drawing 5.	Spring	2

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Building Constructions 2.	Spring	6
Building Constructions 4.	Spring	7
Design Studio 2.	Spring	6
Design Studio 4.	Spring	8
Design Studio 6.	Spring	8
Architectural tecnology & constuction management 2	Spring	3
Energy systems 1.	Spring	3
Introduction to urban planning	Spring	3
Complex Design 2.	Spring	11
Lectures on Interior Spaces	Spring	3
Lectures on urban landscape	Spring	5
Experimental Design Studio	Spring	5
Lectures on Experimental Design	Spring	3
Lectures on Public Buildings	Spring	3
Lectures on theory of architectural design 1.	Spring	3
Lectures on theory of architectural design 2.	Spring	3
Lectures on ecodesign 1.	Spring	3
Architecture of Pécs	Fall, Spring	4

Detailed information about the courses:

Digital Architecture1.

Language of instruction:	English
Form of teaching:	practice
Class hours/week:	3
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 datafiles 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

Digital Architecture 2.

Language of instruction:	English
Form of teaching:	practice
Class hours/week:	3
Credits (ECTS):	3
Course description:	Students' experience of CAD systems is expanded through this practical based course in the application of computers in the field of architecture and design. The course is made up of units including the following topics: modelling building construction details using CAAD software, preparation of plans presenting engineering components and spatial illustrative figures, attaching engineering specifications and descriptions to components and the entire model, selecting and sorting existing geometric and assigned data, processing data and attaching the results to drawings using word processing and spreadsheet programs. By the end of the semester students will be familiar with CAAD systems to a level which will enable them to complete their engineering design project. 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:	Spring

Descriptive Geometry 1.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	2 L, 2 P
Credits (ECTS):	4
Course description:	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).
Assessment methods:	exam
Teaching period:	Fall

Descriptive Geometry 2.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	1 L, 2 P
Credits (ECTS):	4
Course description:	The objective of this subject is to teach students engineering representation skills and the construction of various curved surfaces using representation techniques learnt in Descriptive Geometry I. Topics covered by this subject are as follows: points of intersection and plane sections of plane-sided geometric bodies, contour and points of intersection of curved surfaces, plane sections of curved surfaces, intersection of plane-sided shapes, intersection of curved surfaces, architectural applications (cupolas, vaults, spiral staircases), architectural applications in axonometry, construction of shadows (Monge and axonometric), systems of central mapping

	representation of space structures, central images of plane-sided bodies, central images of curved surfaces, construction of shadows in central mapping. Students attending this course will become acquainted with the geometric properties of all complex second-order surfaces and through learning how to construct their contours, shadow and sections, students perception of space and construction skills are improved and it also helps them understand the aspects (benefits in terms of form, structure or statics) of architectural application. Students will be able to construct views, sections, contours and shades of objects of their own design. This knowledge is required so that they can practically use the curved surfaces of computer representation in CAD systems. 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:	Spring

Mathematics 1.

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	4
Credits (ECTS):	4
Course description:	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 monotonity, 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 practicals matches the requirements of the different specialisations.
Assessment methods:	exam
Teaching period:	Fall

Mathematics 2.

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	3
Credits (ECTS):	4
Course description:	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 P0, 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 specialisations.
Assessment methods:	exam
Teaching period:	Spring

Statics

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	3
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

Strength of Materials / Mechanics

Language of instruction:	English

Form of teaching:	lecture
Class hours/week:	2
Credits (ECTS):	3
Course description:	Students continue to learn the fundamentals of mechanics, compression and stressing of bar structures, which helps them with dimensioning basic structural components of construction and selecting the most appropriate materials. To assist with this, students learn the rules of technical and building constructional representations and various structural systems. In particular, students cover the following topics: stress and deformation, Hookes Law, axial prestressing and compression of bar structures, pure shear, design of bolted joints, wooden joints, bending stress, perpendicular and oblique bending, shear stresses with simultaneous bending, eccentric stresses of materials with and without tension strength, issues of design and examination, EUROCODE's and Hungarian standards.
Assessment methods:	exam
Teaching period:	Spring

Lectures on Architecture I. (Master Course)

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	2
Credits (ECTS):	3
Course description:	The architecture of the period preceding modernism. Premodern designers. Vienna, Arts and Crafts, De Stijl, Deutscher Werkbund, Russian constructivism. The Bauhaus school. Walter Gropius, Ludwig Mies van der Rohe. Le Corbusier. American architecture, Frank Lloyd Wright. Alvar Aalto. Weissenhofsiedlung.
Assessment methods:	exam
Teaching period:	Fall

Lectures on Architecture 2. (Master Course)

Language of instruction:	English, German
Form of teaching:	lecture
Class hours/week:	2

Credits (ECTS):	3
Course description:	Course content includes excerpts on the signs of crisis in modernism; modernism 2 and contemporary architecture in Southern Europe; modernism 2 and contemporary architecture in France; modernism 2 and contemporary architecture in Great Britain; modernism 2 and contemporary architecture in German speaking countries; modernism 2 and contemporary architecture in Northern Europe; modernism 2 and contemporary architecture in the US; Japanese architecture; postmodernism; deconstructionism; neo-modernism; regionalism; analogous architecture.
Assessment methods:	examination
Teaching period:	Spring

Art History

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	2
Credits (ECTS):	3
Course description:	This course forms a basis for the history and theory of architecture, which summarises historical events in monumental architecture in both Eastern and Western ancient cultures, and describe characteristics of architecture. It covers the following topics: the concepts of the history of architecture, megalithic architecture in Europe, architecture of Ancient Egypt, the Necropolis, the centre of the Ancient Empire and the architecture of pyramids, architectural remains of the New Empire, the culture and architectural remains of Crete and Mycenae, Greek culture, archaic, classical and Greek art, the Etruscan culture and its influence on the art of Rome, architecture in the Roman Empire, technical achievements and engineering architecture in the Roman Empire, Early Christian architectural remains in Rome and Ravenna and the cultural influence of the Byzantium age. Through studying palaces, churches and temples, tombs, houses, public buildings and urban planning of antiquity, students can gain an insight into the evolution of spatial design and functional relationships in architecture and the history of structural and technical development.
Assessment methods:	examination

Teaching period:	Spring

History of Architecture 1.

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	2
Credits (ECTS):	3
Course description:	Course description: This subject is a follow up course in the history and theory of architecture, and summarises 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

History of Architecture 2.

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	2
Credits (ECTS):	3
Course description:	The purpose of this course is to outline the main streams of development throughout the ages and to interpret them adopting present concepts of architecture. In lectures, the theoretical and historical relations of architecture are investigated from a general historical, artistic, architectural and, on occasion, structural aspect

	Architecture of the bourgeois society, which developed in the course of changes in history, is analysed based on the historicism of the 19th century and events of the turn of century. Thus, early antecedents of present architectural trends and the value of the existing architectural environment are revealed. The following topic are covered in the lectures: architecture theory in the Renaissance, outstanding architects and new characteristic buildings of the era; architecture of the Contra-Reformation and Roman baroque; manor-house and garden architecture of French baroque; sacred and profane architecture in Hungary in the 17th and 18th centuries; characteristic pursuits of classicism; architecture of the French revolution; ambitions in urban planning; Hungarian classicism; historicism and its forms in European architecture; engineering architecture in the 19th century; the arts and crafts movement; secession workshops in Europe, Ödön Lechner and the issue of national formal language; secession architecture in Hungary.
Assessment methods:	examination
Teaching period:	Spring

Architectural theory

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	2
Credits (ECTS):	3
Course description:	This subject expands on previously taught material and deals with the theory and history of architecture. Students are introduced to the evolution of international and Hungarian architecture, where trends are presented and analysed and the theory of architectural ideology and approach is examined in the 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.
Assessment methods:	exam
Teaching period:	Spring

Digital Presentation (Master Course)

Language of instruction:	English
Form of teaching:	practice
Class hours/week:	2
Credits (ECTS):	3
Course description:	The aim of the course is to help students master architectural graphic representation skills and to enable them to use a wide variety of graphic representation techniques so that they will be able to choose techniques which are best adapted to particular design tasks. Course content includes traditional architectural graphic representation techniques, various graphic and technical representation methods and the complex use of architectural graphic representation methods. Techniques include traditional ones (graphite) and modern computer generated graphics, with line-drawing, textured, plastic and photorealistic representation modes. 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

Architectural Drawing 1.

Language of instruction:	English
Form of teaching:	practice
Class hours/week:	3
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. Utilising the knowledge obtained during the courses of Basics of the Fine Arts I, II as well as of Space and Object Representation I, II, students deal only with the regularities of representing built space. During the course students familiarize themselves with the modelled representation of exterior and inner spaces. In accordance with their design programme, students are introduced to the characteristics of preparing drafts and 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:	Spring

Architectural Drawing 2.

Language of instruction:	English
Form of teaching:	practice
Class hours/week:	3
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 programme 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

Architectural Drawing 3.

Language of instruction:	English
Form of teaching:	practice
Class hours/week:	3
Credits (ECTS):	3
Course description:	Through practical tasks, students are inspired to acquire free-hand drawing skills concentrating on the application and regularities of different perspective systems. As a basic activity, students familiarise themselves with figure drawing, acquire conventional graphic techniques and apply a wide range of drawing methods in order to develop their visual culture and extend their tool range. As a supplementary task, students are given tasks which help develop their perception of space, combination skills and creativity. 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:	Spring

Architectural Drawing 4.

Language of instruction:	English
Form of teaching:	practice
Class hours/week:	3
Credits (ECTS):	3
Course description:	During the course, students deal with the rules of representing built space and practise the observational representation of external and internal spaces. In

	accordance with the design course, they are introduced to the specific technique of creating 3D designs and practise drawing methods which gives them a more diverse means to represent built space. This subject includes an architectural design project in the practical part (marked with a P) where students can develop their architectural skills.
Assessment methods:	exam
Teaching period:	Fall

Architectural Drawing 5.

Language of instruction:	English
Form of teaching:	practice
Class hours/week:	3
Credits (ECTS):	2
Course description:	This is a continuation of the material covered in Architectural Drawing 1. In accordance with the design courses, students are introduced to the specific technique of creating 3D designs and, through increasingly complex tasks, they practise drawing methods which enables them to represent built space in a more diverse way. This subject includes an architectural design project in the practical part (marked with a P) where students can develop their architectural skills.
Assessment methods:	exam
Teaching period:	Spring

Building Constructions 1.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	4
Credits (ECTS):	6
Course description:	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).
Assessment methods:	examination
Teaching period:	Fall

Building Constructions 2

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	3 L, 4 P
Credits (ECTS):	6
Course description:	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, systematisation 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).
Assessment methods:	examination
Teaching period:	Spring

Building Constructions 3.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	3+4
Credits (ECTS):	7
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; utilised 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

Building Constructions 4.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	3+4
Credits (ECTS):	7
Course description:	This subject aims to increase students knowledge of building constructions through lectures and practicals covering the following topics: wall and frame constructions applying various materials and technologies; load-bearing, spaceenclosing and partitioning structures and the principles of selecting and designing such structures; framework from prefabricated reinforced concrete, UNIVÁZ, BVM-TIP; framework for reinforced pre-stressed concrete: IMS; steel framework; multi-storeyed timber framework; construction aspects of deep foundations; waterproofing and dampproofing; underground insulation (bitumen, plastic and volume); damp-proofing walls; waterproofing against groundwater; external wall glazing (service walls, curtain walls, climate external walls, point mounted glass walls); glass roofs; mounted coverings for external walls (brick, stone and metal); other external wall coverings; metal plate (titanium zinc) roofs; suspended ceilings; basic construction rules, design principles and application possibilities. 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:	Spring

Building Construction 5.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	2+4
Credits (ECTS):	7
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; skylighting.
Assessment methods:	exam
Teaching period:	Fall

Design Studio 1

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	1 L, 3 P
Credits (ECTS):	9
Course description:	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. 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.
Assessment methods:	semester mark
Teaching period:	Fall

Design Studio 2.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	1 L, 4 P
Credits (ECTS):	6
Course description:	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 (familiarisation 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).
Assessment methods:	semester mark
Teaching period:	Spring

Design Studio 3.

Language of instruction:	English
Form of teaching:	lecture, practice

Class hours/week:	1+4
Credits (ECTS):	8
Course description:	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.
Assessment methods:	semester mark
Teaching period:	Fall

Design Studio 4.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	1+4
Credits (ECTS):	8
Course description:	Building design in this semester concentrates on raising standards of design with an emphasis on integration into the architectural environment and managing cultural and aesthetic values. Students are also introduced to the theoretical issues in environmental design, especially with architectural environment design, and the practical element of the course works through the design problems. This course covers the following topics: developing continuity of design in rows of buildings and

	empty building sites in urban settings, developing the essentials of residential building design through practical application, developing problem-sensing and decision-making skills in the design process, comprehension skill acquisition, developing architectural expression and independent creative skills, layout of the designed content on ground plans, external appearance of buildings, volume design practice, model construction, representation techniques. 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:	semester mark
Teaching period:	Spring

Design Studio 5.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	1 + 4
Credits (ECTS):	8
Course description:	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. 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.
Assessment methods:	exam
Teaching period:	Fall

Design Studio 6.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	2 + 3
Credits (ECTS):	8
Course description:	This subject teaches students ways of recognising impacts the immediate and wider environment have on building design and, using relevant urban design programmes, finding ways of integrating the building into that programme. The practical classes focus on the following topics: design of a public building set in the town fabric on the basis of the site plan and programme; floor plans, building volume, design of building structures under the supervision of a consultant, emphasis on the importance of fitting into the environment; acquisition of complex design knowledge. In addition students must prepare concept plans of a specified design task applying the knowledge that they have learnt (aiming at synthesis). Students are also taught how to improve technical techniques for creating high quality presentations and model construction.
Assessment methods:	exam
Teaching period:	Spring

Construction Materials

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	2 L, 1 P
Credits (ECTS):	3
Course description:	This lecture and practical based subject intends to provide students with a useful knowledge concerning the fundamentals of construction materials and covers the following topics: chemical, physical and mechanical properties of construction materials; features and application of heat and sound insulation materials; waterproofing materials, bitumen, damp-proof layers; methods for later drying out of wet walls; production, testing and properties of construction ceramics, choice and application of ceramic masonry elements; types of

	mortar and their testing and properties, application of special mortars in the construction industry; construction with stone and their testing and application; types of timber, structure, physical and mechanical properties of wood, defects in wood and wood protection; metal and reinforced concrete, production, testing and mechanical properties of steel; architectural glass; properties of plastic materials and their application in the construction industry. Through the examination of "changes in materials", chemical and physical processes can be examined, and by studying corrosion, degradation and compatibility of materials we can find the means to minimise damage or protect against degradation. Students also learn to classify the ever expanding range of construction materials, analyse the dangers originating from environmental changes and explain application directives and their boundary conditions. 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

Architectural tecnology & constuction management 1.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	1 L, 1 P
Credits (ECTS):	3
Course description:	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. 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:	examination
Teaching period:	Fall

Architectural tecnology & constuction management 2.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	1 + 1
Credits (ECTS):	3
Course description:	Construction processes of in-situ casting and pre-cast reinforced concrete structures are presented in the course, and the processes involved with concrete technology and finishing concrete structures. In particular the following topics are covered: classification of machinery in the construction industry; allocation of machinery operating hours; performance documentation in practice, machinery logbooks, expenses for machinery, compulsory reports for machinery; elements in concreting chains, their operation and applications; preparation of conventional formworks; preparation of steel reinforcing and concreting processes; mortar machine technology and tools; exterior and interior plastering; floor tiling with conventional and modern techniques; application of cranes and elevators in the construction industry; relations between building services engineering works and master builder works; dry construction systems; preparation of roofing and flashing; house painting and floor laying; steel and timber structures. This course aims to give students a basis for planning, managing and controlling construction work.
Assessment methods:	exam
Teaching period:	Spring

Architectural tecnology & constuction management 3.

Language of instruction:	English
Form of teaching:	lecture, site visiting
Class hours/week:	1L, 2P
Credits (ECTS):	3
Course description:	During the term the students can be prepare to the real construction processes. The main part of the subject is the site visiting, here in Pécs. On the lectures (marked with an L) the teacher will show them the basic of the site planning, the main steps of the construction in practice. On the lectures the students can be prepare to the site visiting: with the showing the site plans, the photos of the workplaces, the specialities of the works. During the site visiting/practice course (marked with a P) the teacher and the students go out to the sites and there the students can meet the leaders of the sites. They can see the planes and the buildings in same time. The teacher choose an exact task for every students. At the end of the term the student have to make a presentation about their experiences in their own theme.
Assessment methods:	examination
Teaching period:	Fall

Energy systems 1.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	1+1
Credits (ECTS):	3
Course description:	The objective of this subject is to summarise the basics of building physics, the energy balance of structures, energy-conscious architecture, passive solar systems and methods of energy design. This subject matter is taught through the following topics: basic forms of heat transmission, the heat transmission coefficient, strata boundary temperatures, thermal bridges, ribbed structures, resultant heat transmission coefficient, structures in contact with the ground, non-stationary processes of thermal mass, absorption, phase lag, heat absorption of floors, weather conditions, geometry and energy yields of solar radiation, the greenhouse effect, equivalent heat transmission coefficient of transparent

	structures, energy balance of structures, building energetics and components of energy balance, requirements, specific heat requirement, methods and processes of energy design and testing, efficiency of heat insulation, energy-conscious architecture and passive solar systems. In addition to energy and buildings, students study about the properties of vapour diffusion in stationary cases, sorption, moisture content of structures, filling-up time, vapour condensation on surfaces, capillary condensation, conditions for fungoid diseases, moisture balance of rooms and factors affecting how we sense temperature and how it is measured and temperature sensing in winter and summer. Because European regulations are getting more strict, buildings must be increasingly more energy efficient. This subject introduces students to methods of achieving energy efficiency and concepts for energy efficient architecture.
Assessment methods:	examination
Teaching period:	Spring

Introduction to urban planning

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	1+2
Credits (ECTS):	3
Course description:	Through a series of practical classes as well as group and individual consultations, students prepare the arrangement plan of a chosen district of a town or a smaller village taking the local regulations and the concepts of settlement development acquired during the preceding semester into consideration. On the basis of the arrangement plan, students prepare the layout plan, of a chosen project. This plan is published and discussed in the group. 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:	Grading: The 60% of lessons must be met. Writing tests two times in the Semester, written examination.
Teaching period:	Spring

Complex Design 1. (Master Course)

Language of instruction:	English
Form of teaching:	practice
Class hours/week:	8
Credits (ECTS):	6
Course description:	The subject revises and deepens the previously taught knowledge of architectural design. The task is architecturally exciting: to design a public building of interesting volume design and layout. Students can freely choose their topic of interest with the approval of the head of practical classes. The finished project is presented on posters with a rich architectural content and high quality representation at a scale of 1:100, and with detail drawings at a scale of 1:50 and less, for a suitably sized final model building. Students' acquired knowledge is assessed over the course of the semester. 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

Complex Design 2. (Master Course)

Language of instruction:	English
Form of teaching:	practice
Class hours/week:	10
Credits (ECTS):	11
Course description:	The course assignment to be completed by students with the guidance of the instructor is designing a public building with special emphasis on functional features in a designated multifunctional urban area. Students are required to carry out an urban design analysis and write an essay on successful examples of implemented architectural projects. The design assignment is to be completed using effective graphic tools and an architectural model is also to be presented. 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:	Spring

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Complex Design 3. (Master Course)

Language of instruction:	English
Form of teaching:	practice
Class hours/week:	10
Credits (ECTS):	11
Course description:	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 specialised departments. Furthermore, this subject intends to have students practise 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.
Assessment methods:	semester mark
Teaching period:	Fall

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Complex building constructions (Master Course)

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	2+2
Credits (ECTS):	6
Course description:	The aim of the course is to give students an overview of the 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 with no shear resistance (pressure line shaped structures, rope structures, tents, fabrics), then shell and membrane structures, cold formed curved structures (frames, wall frame systems, sheet frames, halls), and finally box structures (external box structures, internal box structures, complex box structures, tube frame structures) are discussed. Students learn about the works of several architects excelling at structural design (J. Pelikán, L. Kollár, J. Dulánszky, T. Matuscsák, P.L. Nervi, F. Otto, E. Freisinet, S. Calatrava). 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:	semester mark
Teaching period:	Fall

Lectures on Interior Spaces

Language of instruction:	English
Form of teaching:	practice
Class hours/week:	2
Credits (ECTS):	3
Course description:	Fundamentals of holistic-ecological architecture. Energy efficient solutions of autochthon and luxurious architecture, taken from architectural history. The Climate Design method offers solutions for buildings which offer more while using less technology. Development of building conceptions: Buildings which create the highest level of comfort while using as little

	energy as possible. In order to achieve this goal it is necessary to implement a holistic approach to the planning process. Architectural design and technical services must not be treated separately but need to be integrated into a multi-dimensional process to achieve a well-balanced overall system. Ecological organic technologies and sacral geometries. Energy efficient design solutions, possibilities of aesthetic design. Planning of building-skins, conceptions. Energy management. Energetic and building-climatologic considerations. Aspects of architectural design as well as technical and physical aspects will be dealt with in a multidisciplinary manner. By the end of the Semester Climate Designer students will have to become partners for a sustainable planning process. They will be able to holistically advise and design energetically and technically optimised buildings, starting with the concept of a building up to its detailed design. A project assignment is carried out to test the acquired knowledge. The project work deals with the holistic approach towards a concrete building assignment during which singled out special questions can be worked on thoroughly. During the program there are lectures, special seminars and consultations.
Assessment methods:	examination
Teaching period:	Spring

Lectures on urban landscape

Language of instruction:	English
Form of teaching:	practice
Class hours/week:	4
Credits (ECTS):	5
Course description:	Through a series of practical classes as well as group and individual consultations, students prepare the arrangement plan of a chosen district of a town or a smaller village taking the local regulations and the concepts of settlement development acquired during the preceding semester into consideration. On the basis of the arrangement plan, students prepare the layout plan, of a chosen project. This plan is published and discussed in the group. 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:	semester grade
Teaching period:	Spring

Architecture of Pécs

Language of instruction:	English, German
Form of teaching:	lecture, practice
Class hours/week:	2
Credits (ECTS):	4
Course description:	Course content includes a lecture about the city of Pécs. Later on several excursions will be organised where students will visit different places of the rich architectural heritage of Pécs. Finally students will be required to prepare a study and a poster about one of the visited places.
Assessment methods:	mid-Semester grade Form of assessment: study and a poster
Teaching period:	Fall, Spring

Experimental Design Studio

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	2+2
Credits (ECTS):	5
Course description:	
Assessment methods:	mid-Semester grade Form of assessment: study and a poster
Teaching period:	Spring

Lectures on Experimental Design

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	2

Credits (ECTS):	3
Course description:	
Assessment methods:	mid-Semester grade Form of assessment: study and a poster
Teaching period:	Spring

Lectures on Public Buildings

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	2
Credits (ECTS):	3
Course description:	
Assessment methods:	mid-Semester grade Form of assessment: study and a poster
Teaching period:	Spring

Lectures on theory of architectural design 1.

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	2
Credits (ECTS):	3
Course description:	Having acquired a sound knowledge of basic design principles and methods in Design Methods courses students explore a wider context of architectural design methods with special emphasis on social, sociological and settlement structure implications. The aim of the course is to acquaint students with the design principles and methods of historical and contemporary design ateliers. It will enable them to analyse and see architectural objects in the context of the history of architecture and to put architecture in the wider context of urban design and sociology. Students are encouraged to find and combine methods and form concepts for particular design tasks. The main topic of lectures and workshops is the design of residential buildings.
Assessment methods:	Examination
Teaching period:	Spring

Lectures on theory of architectural design 2.

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	2
Credits (ECTS):	3
Course description:	The aim of the course is to introduce students to design principles and methods of contemporary ateliers and to current trends in architectural principles as well as to make them aware of the importance of an interdisciplinary approach in architecture. It will enable them to analyse and see architectural objects in the context of the history of architecture and to put architecture in the wider context of urban design and sociology. Hungarian and international architects, artists, critics and experts operating on the borders of architecture invited to the workshops share their experience about contemporary design principles. The main focus of lectures and workshops is on mapping and analysing contemporary design principles and current trends in modern architecture.
Assessment methods:	Examination
Teaching period:	Spring

Lectures on ecodesign 1.

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	2
Credits (ECTS):	3
Course description:	The main objective of this subject is to introduce students to the major concepts of sustainable development and sustainable construction. The engineering means towards sustainable, environment-conscious construction are presented using the concepts of ecology. The theoretical unit of the subject covers the following topics: topicality, importance and necessity of ecological way of thinking in architecture; exact definition and systematization of ecological, energetic and solar terms; development conditions of ecological construction and their political and economic motives, psychological background; comprehensive retrospective examples

	from the beginning to industrialization; chronological evolution of ecological architecture from the late 1960's to now; typology of residential buildings and evolution of the integration of active energy utilization techniques; development of solar architectural concepts, passive energy utilization and the prototypes of combined energy utilization; climate systems utilizing environmental energy evolved from external walls which are not only rigid boundaries but serve as energy utilizing changeable shells reacting to climate changes; energetic and ecological feasibility and importance of condensed ways of construction; appearance and evolution of ecological urbanism where the solar house converts into a solar city, architecture psychological aspects of ecological thinking; change and maturation of scientific and designer's attitude, a comprehensive organic design approach to the relationship between energy and ecology.
Assessment methods:	Examination
Teaching period:	Spring