Faculty of Architecture

„Budapest" Architecture

Program offered for exchange students
in the 2014/2015 academic year

Spring semester 2014/2015

RECOMMENDED PART / 20 credits per semester

recommended group of subjects where participation is possible without overlaps in the timetable / contains about 2 credits provided by all the departments of the Faculty

subjects	cr	code	limit	
				project unit – 12 cr
Drawing 8 – Digital Presentation Technics Molnár Csaba DLA	**2**	**BMEEPRAO801**	**-**	
Architectural visualization with the help of digital technology. The course offers an introduction to various computer aided artistic presentation techniques.				
Design Methodology Balázs Mihály DLA, Schrammel Zoltán	**2**	**BMEEPKOA402**	**-**	
Design Methodology deals with theoretical and practical methodology of architectural design flow. The point of theoretical Design Methodology is the design itself as a modellable process. The process of architectural design thus can be compared to an informatical system, so for making the methods more clear. Practical Design Methodology is closely connected to the Public Building Design 2 process itself, extending it with special design factors and details. Through analysing existing buildings and fictional situations interesting practical problems and solutions can be discussed. With the help of invited practicing architects, special methods of new facilities and building- reconstructions are presented, along with the design of technologically or structurally determined buildings. Because of its importance, sustainability, free access and ecological design will be touched along whole study.				
History of Hungarian Architecture1 Dr. Krähling János	**2 th pr**	**BMEEPETO801**	**-**	
The subject History of Architecture in Hungary I. aims to present and analyze the architecture of historic Hungary in European and domestic context from the history of Pannonia to the end of Baroque. The principle of the presentation is the chronological interdependence, however, particular attention is given to the main trends within the different periods as the main stylistic tendencies or external and internal factors that determine the historical and architectural context. A great emphasis is given to the exploration of the connections between the European and Hungarian history of architecture. Lecture topics include: The beginnings of architecture in the Carpathian Basin. Roman architecture in Hungary. Early medieval architecture in Hungary – Christian Architecture between West and East. The flourishing Romanesque and the beginnings of Gothic Architecture. The rise of Gothic Architecture – architecture in towns and Gothic architecture of the orders. The beginning and the first period of the renaissance till the middle of the 16th century. The architecture of fortified palaces and fortifications. The renaissance architecture in Transylvania. The beginnings of the baroque in Western Hungary in the 17th century. The High Baroque in Hungary.				
				only one of these four design studios!
Public Building Design 2 Balázs Mihály DLA	6	**BMEEPKOA401**	15	proposed for BSc students
Public Building Design 2	6	**BMEEPLA**	15	proposed for BSc students
Public Building Design 2	6	**BMEEPIP**	15	proposed for BSc students
Target of the exercise, how to realize the general architectural design of a public building without loss of focus regarding the types collective characteristic. What does the studio hope to achieve? The architectural design of a smaller public building, with assistance from architect consultants. The student should learn the process from within regarding the architectural design process and the unusual stress placed upon development of space / manipulation of form whilst considering their approach to solving real environmental problems.				
Urban Design 2 Szabó Árpád DLA	6	**BMEEPUIA601**	15	proposed for MSc students
Urban Design 2. is the main practical course of the Department of Urban Planning and Design. The design task: After the analysis of a bigger urban environment, the task is to prepare an urban design concept				

for a bigger urban unit in group work of at least 3-4 students, and later develop it into an urban scaled architectural design (public space design or development plan) by individual work. The tasks can deal with urban renewal programs like rehabilitation of inner city areas, restoration of historic quarters or upgrading the grey zone between the peripheries of the densely built urban core and the suburban settlements.
The site of the design task is the same settlement or urban environment for all students, since the studio work is accompanied by common site visits, lectures and project presentations, where the possibility to learn from each other is also an important factor.

construction subjects – only one of two Building construction courses

Building Constructions3 Dr. Fülöp – Dr. Takács - Svéd	**4**	**BMEEPESA401**	**12**	**min. 2 semesters Construction Study**

General and detailed review of the structures of the elevation constructions. The most important aim of the subject is the analysis of the external separating constructions. Principles of the continuity of the protecting levels depending on the position in the structure. Multi-layer external separating walls, construction methods of the elevation claddings and elevation coverings, the ordinary and special external doors and windows. Complementary structures for the external doors and windows, especially the shading devices. Requirements for the external separating structures and performances of the different constructions. Building physics: heat and vapour physics, acoustic features of the external separating structures

Building Constructions5 Dr. Hunyadi – Dr. Dobszay	**4**	**BMEEPESA602**	**12**	**4 semesters Construction Study**

This subject introduces the students to the precast reinforced concrete, steel and the timber load bearing construction systems of the big span halls and their special additional structures by a system- and performance-based approach. Details both of heavy elevation and roof slab structures made of prefabricated r.c. sandwich panels and lightweight external constructions are presented. Specific flooring, big size doors and partitions of industrial and commercial halls are shown. It is also an objective to present the special construction rules and the service system aspects of the buildings of lightweight system and their particularities in the terms of building physics and fire protection.
Additional information is presented about multilevel pre-cast r.c. skeleton frames, its typical technical details and the structural solutions of mass produced blocked and panel load bearing systems in case of residential buildings. The main object of the course is to explain the constructions of one storey high big span halls. Students practice knowledge transmitted during the presentations and workshops in their semester projects on basis of the whole complexity of previous studies.

Special Loadbearing Structures Dr. Hegyi Dezső	**4**	**BMEEPSTT601**	**-**	

The subject introduces the special load-bearing structures, such as large span, tall and spatial structures. We introduce the trusses, box-beams, wall-beams and arches as large span structures. We show the static behaviour of tall buildings: the concept of the vertical and horizontal load-bearing structures. The behaviour of spatial structures is the main topic of the semester. We introduce the RC shells, the brick-shells, the cable and textile membranes, space-trusses, grid shells.

technical subjects

Construction Management 2 Dr. Lepel A., Dr. Vidovszky I.	**2**	**BMEEPEKT601**	**-**	

The subject introduces the investment process from emerging the idea through tendering until the hand-over and use. It shows the role and tasks of an architect in different phases of a construction process. It gives an introduction of real estate investment, basics of project management. The relationship between costs, time and quality: scheduling, planning and estimating and the procurement methods are revealed. There are case studies in the field of construction projects, their preparation and performance, planning, organising leading and commanding of works. Individual task: planning of a project.

Solar Architecture Szikra Csaba	**2**	**BMEEPEG0619**	**-**	

Calculation of heat loss of buildings. Energy consumption of a heated space. Classification of heating. Fuel sources and local heating appliances. Central heating. Elements of water heating system (boiler, condensing boiler pump, expansion vessel, air venting, safety elements. Pipe networks. Friction loss in pipe and duct. Emitter heating (emitters, selecting and sizing), surface heating and cooling (construction and sizing). Energy efficient control of heating. Renewable energy sources for heating and producing domestic hot water.
Introduction to psychometrics. Basic psychometric processes. Ventilation (classification, natural and mechanical ventilation, fundamental systems of air inlet and extract). Estimation of the necessary air volume. Air heating and cooling systems. Air conditioning. Hybrid ventilation systems (ventilation based on renewable energy sources).
Passive houses. Passive heating and cooling. Introduction to ODOO project regarding to energy conscious design.

ELECTIVE PART

depending on the timetable, since many courses will overlap in time / see timetable

subjects	cr	code	limit	
Architectural Informatics 3 Dr. Szoboszlai Mihály	**3**	**BMEEPAGA501**	**20**	
Use of state-of-the-art CAAD software to develop professional architectural solutions. Extensive use of 3-D computer model development. Architectural documentation with computers. Computer animation and fly-throught pictures for architectural space analysis.				
Architectural Research Vasáros Zsolt DLA	**6**	**BMEEPIP0995** **BMEEPUI0995** **BMEEPLA0995** **BMEEPKO0995** **BMEEPAG0995** **BMEEPEK0995** **BMEEPEG0995** **BMEEPES0995** **BMEEPRA0995** **BMEEPST0995** **BMEEPET0995**		**Minimum of 4 semesters architectural and engineering studies, specified background during the registration.** see the topic list proposal
Similar to the international practice aims the course primary research activity on architecture and its documentation. The possible horizon of the research topics is determined by the course lists of the departments and the personal interest of the students. Beside the architectural topics will give the course an appreciation of interdisciplinary and special fields in international environment too. The project work demonstrating generic and specific skills and understanding of the open and synthetic character of the research. The objective of this course is to hone the skills of analysis and abstraction in order to develop a framework for research. The student should be able to draw from precedent in both art, architecture and engineering in the development of this framework, which will act as scaffolding for the theoretical, experimental and creative decisions. This course will consist of a series of consultations to the teachers, but the essay should written by the student. The available topics are given by the Departments of the Faculty. The student can propose also a special topic for research during the course, but the teacher has to be agree with the proposal.				
Architecture of Workplaces 1 Bartók István DLA	**2 th**	**BMEEPIPA401**		
The history of industrial architecture, the history of Hungarian industrial architecture. Presentation of single-storey and multi-storey, industrial, welfare and office buildings. Role of technology; aspects and conditions of sites, emplacement of industrial plants. Modes of interplant transport; general features of industrial buildings; the standardization; the theory of flexibility and its conditions. Services required for these buildings, including natural and artificial lighting, heating and ventilation and storage facilities. Constructions of single- and multi-storey industrial buildings. Foundations, roof structures, intermediate floors, external wall systems, ground floor structures and finishes. Design methodology for industrial establishments. Environmental protection. Re-use, reconstruction.				
Basic of Architecture Hild György DLA	**6 pr**	**BMEEPLAA202**	**12**	**only BSc students**
After having learned the basics of space composition in general, the students of Basics of Architecture study the importance of scale, function and locality in architectural design. During this course the students will accomplish five shorter design exercises all exploring the diverse nature of the above mentioned subjects. As such this course is very creative and provoking. The knowledge acquired through this course is essential to the compliance of the later design courses.				
Building Economics Dr. Mályusz Levente	**2 th**	**BMEEPEKA801**	**20**	
Aim: investigate the economic side of a real estate development emphasizing the social cost and benefit of a development. This module concentrates economical computation models, theories dealing with real estate valuation. There is a homework with calculation and valuation of a real estate development. Successful submission is required for the module acceptance. Written exam as indicated, minimum pass grade required. Two corrections are allowed.				
Constructive CAAD CE Dr. Strommer László	**3**	**BMEEPAG0249**	**20**	
CAD modelling course for students who are familiar with AutoCAD (at least in 2D). The course deals with modelling concepts and techniques, materials, lighting and rendering. In the second part of the semester students work autonomously (with consultations) on a model of their choice. (http://www.epab.bme.hu/en/?ccce)				
Contemporary Architectural Offices	**2 th**	**BMEEPIP0893**		

Dobai János DLA				
The aim of the course is representing Hungarian architect studios and giving useful information about working method of practising, creative teams. Lectures are performed by different practising architects, displaying their works by presentations or by visiting building projects. There is also a possibility to make informal conversation with architects. The lectures are organized in auditoriums or at building sites. To obtain the final mark, each student has to write an own essay of a defined topic.				
Departmental Design1 Szabó Árpád DLA	**3 pr**	**BMEEPUIT601**	**30**	**only MSc students**
A special urban design course conducted by the Department of Urban Planning and Design focusing mainly on urban public space design with the help of invited lecturers and landscape designer consultants. The course is a partly theoretical and partly practical course where students get acquainted with special issues and problems of public space definition, public spaces usage and public space design. In the design assignment all students deal with one area, where starting from the analysis of a greater urban entity we narrow down the design problems to handling the publicly attainable spaces in between buildings.				
Drawing4 Dr. Üveges Gábor	**2 pr**	**BMEEPRAA401**	**10**	
Freehand perspective drawing of studio interiors with permanent techniques (ink / fineliner) - Sketching methodology - Examination of the visual context of interior design objects and their surroundings. The course requires general skills in artistic drawing.				
Drawing6 Répás Ferenc DLA	**2 pr**	**BMEEPRAA601**	**10**	
Introduction into large scale perspective. Advanced freehand presentation techniques of depicting large scale interiors and urban exteriors, with the help of five point perspective. Classes will be held in different iconic public buildings of Budapest. The course requires advanced skills in artistic drawing.				
Facility Management Dr. Hajnal István	**2 th**	**BMEEPEK0633**		
The goal of the subject is to present theory of Facility Management, introduction of Cost Efficiency concepts. Based on case studies and several site visits on commercial properties, list of managerial tasks will be indentified and explained as registration, maintenance, crisis management and others. The course also will cover related subjects as Workspace Planning and CAFM (Computer Aided Facility Management).				
History of Architecture 2.- Antiquity Dr. Mezős Tamás	**3 th pr**	**BMEEPETA201**		
Basic topics: Ancient civilizations. The Sumer millenium. From Old Babylon to Parthians. Millenium of pyramids. New Kingdom, Ptolemaic age. Greek temenos, temple, town. Greek public buildings. Roman town, house types. Roman temples. Roman public buildings. Roman palaces. Practical themes: simplified column-orders, Ur house, zikkurat, temple, apadana - its elevation, akhaimendian rock grave, pyramid ansamble, Khonsu temple, Egyptian house. Ur towertemple - axonometric view Khonsu temple - half-axonometric view Greek Doric order - details. Greek temple – half axonometric view Greek Ionic order - detaile. Colosseum type elevation, house-types Greek Korinthian order – details Roman vaults and domes. Panteon. Basilical construction.				
History of Architecture 4. Renaissance and Baroque Dr. Krähling János	**3 th pr**	**BMEEPETA401**		
Brunelleschi and the early renaissance architecture in Tuscany. The evolution of the renaissance palace in Florence and in the Northern regions of Italy. The architect and scholar Leon Battista Alberti. Bramante and and the influence of his circle in the first half of the 16th century. Michelangelo Buonarroti architect. Renaissance in Lombardy and Venice. Mannerist architecture. The late sixteenth century: Palladio and Vignola. Urban development and early baroque architecture in Rome under Pope Sixtus V. The architecture of Lorenzo Bernini and Francesco Borromini. Baroque in Venice and in Piemont. Architecture in France in the 16-17th centuries. Baroque in central Europe: Austria, Bohemia and Germany.				
History of Architecture 6. - Contemporary Szalai András DLA	**3 th pr**	**BMEEPETO601**		
The course gives an overview of the architecture in the 20-21st centuries. The classes follow chronology with focusing on the works of some great architects: Modernism and Modern Movement. Architecture between the two world wars – De Stijl, Bauhaus, Russian Constructivism, Less is more – Architecture of Ludwig Mies van der Rohe, Toward a New Architecture – Architecture of Le Corbusier. The Nordic Classicist Tradition – Architecture of E. G. Asplund and S. Lewerentz. Alvar Aalto and the modern Finnish architecture. In the second part the course picks up some relevant architectural trends: New Empiricism, New Humanism, New Brutalism and the Team X, the way from large housing estates to architecture without architects. Unfolding post-modern architecture, participation and the Las Vegas strip, Colin Rowe's studio, Critical Regionalism. The third part concentrates on timely problems: new materials or the multi-sensorial experience of space and surface, Rem Koolhaas's Dirty Realism, new technology and digital perception, architecture of seduction.				
Preservation of Historic Monuments Dr. Mezős Tamás	**2 th**	**BMEEPETT611**		

The course gives an overview on history and theory of the architectural preservation in Europe and Hungary. Presents the evaluation of the way of thinking from purism to the modern practice of restoration. It is an important part, when national and international documents and theoretic papers are discussed, form Morris and Ruskin's work, over Boito's "Prima carta del restauro" (1883) to Krakow Charter 2000.
Following the historic part some technical aspects of preservation are discussed, i.e. surveying methods and techniques, non-destructive and destructive building archaeological methods etc. The brief introduction to building archaeology helps to understand the importance of theoretic reconstruction of independent building phases of the historic monument. The detailed discussion of the topic is part of the Preservation of historic buildings 2 – Building archaeology elective subject.
The third part is dealing with architectural and design-methodological questions of preservation. Especially the architectural problems of presentation of archaeological heritage,the reuse and functional problems of industrial and vernacular buildings for modern purposes.

Residential Building Design 1 Kolossa József DLA	**2 th**	**BMEEPLAA201**		

Residential design is a special, complex, yet immensely interesting part of the architecture profession: we design for families places to live. The relatively small spaces of the architect's tight design concerns culture, financial optimising, common sense, functional diversity, interior design and much more. It requires great skill to master all aspects of design of such small, but efficient spaces. Residential Design 1 is a lecture course aiming to introduce the students to the basics of the deep and colourful world of residential design.

Residential Design and Contemporary Competitions Kolossa József DLA	**2 th**	**BMEEPLA0897**		

The goal of the course is to complete the lectures on Residential Building Design, by presenting many examples from the many times controversial world of architectural competitions. The course aims the students to establish a certain routine in participating in architectural competitions. They get to know the inner dynamics of competition-decision making, the rules, and processes that surround a real life architectural competition. The classes are discussion-based occasions. There are four small group assignments throughout the semester too.

Urbanism Szabó Árpád DLA	**2 th**	**BMEEPUI0805**		

The goal of the course is to get students acquainted with the multidisciplinary characteristics of Urban Design, Urban Planning and Urban Studies. The semester is divided into three 4 lecture long blocks dealing with: the issues of contemporary urbanity; related fields of science and planning tools in various field of the profession. In the series of lectures professors of the Department of Urban Planning and Design and some invited experts of various fields are presenting lectures on various topics.

Hungarian Cities Kissfazekas Kornélia PhD, Wettstein Domonkos	**2 th**	**BMEEPUI0423**	**60**	

Hungarian cities are sculptural vestiges of the East-Central European urbanization processes from the past. The aim of the course is to introduce the students to the specific emergence and development of the Hungarian settlement portfolio. The topic will be presented through the different historical periods of urban growth. Each era will be outlined through the historical, economic and social background, the settlement establishment and development factors, such as town-forming role of nationalities, religions, social stratification and Soviet influence on town planning. We will demonstrate the specific environment-forming activities and the typical Hungarian characteristics of morphology, townscape and floor plan. A one-day study trip will take place at the end of the course to get personal on-field experiences.

Statics	**4 th pr**	**BMEEPSTA201**		

This is a basic BsC course. Basic knowledge in physics is required.
The basic laws and theorems of statics are presented and applied to engineering structures. Statically determinate trusses, beams, frames, and assembled structures are considered, the line of trust is presented. Internal forces are treated in 2D and 3D.

Strength of materials 2	**6 th pr**	**BMEEPSTA401**		

This is a regular BsC course for second year students in architecture. The goals of the subject are to show how to
- determine the deformations of load-bearing structures
- find the internal forces of statically indeterminate structures.
In addition to theoretical methods, we also show examples in structural engineering. Knowledge of statics is required.