FACULTY OF ARCHITECTURE
The Faculty of Architecture at the Budapest University of Technology and Economics focuses on training highly professional experts in architectural engineering who are aware of the social and cultural implications of their profession. Versatility is emphasized so that students will gain fundamental knowledge and abilities in every possible field of architecture and be able to find work in a highly competitive job market, and in any building- or design-related area of consulting, construction, and management. The 5-year program in English leads directly to an M.Sc. degree in Architecture and Architectural Engineering (Dipl. Ing. Arch.), but it is also possible to graduate as a Bachelor of Science in Architecture.

Graduates of the Faculty of Architecture are qualified for a broad spectrum of architectural occupations:

- Design, construction and maintenance of residential, public, industrial and agricultural buildings;
- Reconstruction and the preservation of historical monuments;
- Urban design and settlement planning; and
- Administration of all these activities.

The curricula were organized on Swiss and German models. The Faculty has maintained these traditions for the last 40 years but provides additional European and international dimensions through guest lecturers from abroad, topical short courses, workshop seminars and exchange programs.

The five-year program of the Faculty of Architecture taught in English is in full conformity with the five-year program provided in Hungarian, which after two years practice and experience is accepted for access to EUR-ING title.

**General Course**

The year program in English, called the General Course precedes the Degree Program. It is designed to develop the skills of students from abroad so they will be at no disadvantage in meeting the Faculty’s exacting educational standards. Students are introduced to various aspects of the profession they have selected, and they concentrate on studying English and basic technical subjects such as mathematics and freehand drawing. Students who show enough skills at the Placement Test can automatically (immediately) start the Degree Program.

**Academic Program of the Faculty of Architecture: B.Sc./M.Sc. Studies**

The two-level B.Sc, M.Sc training in the English speaking section of the Faculty of Architecture is realized in a split-up system, in full conformity with the Hungarian speaking section. For B.Sc degree students has to accumulate min 240 credit points, for M.Sc degree min 300 credit points by accomplishing the obligatory subjects and gathering the remaining credit points by accomplishing elective subjects too. B.Sc degree can be obtained in a minimum of four years, M.Sc degree in a minimum of five years of study.

Students, both international and Hungarian, who have a command of both languages can choose from either program. The participation of Hungarian students in the program given in English has obvious advantages. It eases the integration of international students into the society, which surrounds them during the years of their studies. It also attracts students from European, American and other universities world-wide to study in Budapest within the framework of the International Student Exchange Program and other agreements. Hungarian students likewise gain the opportunity to study at schools of architecture abroad. These exchanges will become a powerful factor in achieving real convertibility among educational systems world-wide and, eventually, mutual international recognition of degrees.

**Master’s Program**

Students who have earned B.Sc. degrees in other schools of architecture can join the Master’s Program. Programs will be tailored to their previous education and special needs. In general they are admitted to the last two years of the five years program, and they have to collect minimum 120 credits. These studies encompass a wide range of complex design topics and elective subjects grouped in three directions:

- Structural Design - buildings and other structures.
- Architectural Design - buildings with different functions, their interiors and surroundings; the preservation of historical buildings.
- Town Planning - urban design, settlement planning and management.

*Note: The Faculty of Architecture reserves the right of changing the Curricula.*
Graduation

Graduation from the University is based on the successful completion of examinations in all subjects and on the successful defence of a diploma project before a Final Examination Board. The examinations are public and the Board consists of professors and eminent specialists in the profession. Diploma projects are prepared in the last semester under departmental guidance and can be submitted only by students with an "absolutorium" (university leaving certificate). The diploma project is expected to reflect its author's familiarity with technical and aesthetic knowledge fundamental to architectural practice, and his/her creativity in applying it. Currently, international agreements make it possible for certain Hungarian students to prepare and defend their diploma projects in the university of another country. Students from abroad can correspondingly prepare and defend their thesis projects under the guidance of the Faculty of Architecture at the Budapest University of Technology and Economics.

Departments

Department of Construction Technology and Management
Department of Architectural Representation
Department for History of Architecture and of Monuments
Department of Building Energetics and Building Services
    Laboratory of Thermal Physics
Department of Building Constructions
    Laboratory of Building Acoustics
Department of Industrial and Agricultural Building Design
Department of Public Building Design
Department of Residential Buildings
Department of Design
Department of Mechanics, Materials and Structures
Department of Urban Studies

Budapest University of Technology and Economics
Faculty of Architecture
Faculty Office: Building K, 2nd floor,
Room No. 206.
Mailing Address: Műegyetem rakpart 3-9.
H-1521 Budapest, P.O. Box 91.
Hungary
Phone: (+36-1) 463-3984
Fax: (+36-1) 463-3171

Dean of the Faculty: Prof. Dr. Gábor Becker
Vice-Dean of the Faculty: Prof. Balázs Balogh DLA
Course Director: Mr. Gábor Nemes
Program Co-ordinator: Ms. Agnes Kormos
### General Courses in Architecture

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For students of BME Faculty of Architecture only criteria subjects (no credit points)

Students can enter the BSc/MSc degree program only after completing all the subjects of the General Course in Architecture.
## Curriculum of B.Sc./M.Sc. Subjects

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* Subjects for MSc course  
** Subjects for BSc course  

Note: all subject can be selected as elective subject for both courses (BSc, MSc)  
Where the prerequisites are not indicated they will be specified by September 2009.
Description of General Courses in Architecture

Design skills 1.
Mr. Gábor Nemes
The Basic formal components of Buildings: walls, beams, pillars, floors. Their appearance and formal varieties. The Basics of spatial compositions. The idea of the architectural space and its typology.

Design skills 2.
Mr. Gábor Nemes
Developing the skills of students to read 2D architectural drawings. To develop skills to transfer 2D drawings to 3D expression. To develop skills to transform the 3D reality into 2D projection drawings.

Freehand Drawing 1-2.
DLA Balázs Balogh, Dr. Balázs Méhes
Introduction to the basic laws of perspective, the one-vanishing-point perspective, cubes and squares; simple body settings, cylindrical bodies, towers viewed from the ground, half-cylindrical rings, and more complicated settings and orthogonal pictures. Life drawing, shadow techniques, curved surfaces and rounded bodies. Tonic drills, draperies, plaster ornaments, flowers in ink, still life (plasters), coloured pencil techniques, aquarell and still-life interiors. Interiors and furniture, corridors, staircases, corridors or exteriors (weather permitting). (Criteria subject)

Fundamentals of Architectural Design
DLA Balázs Balogh
It is an attempt to explain the grammar of architectural design, to describe the basic factors on which the creative process of design depends. The course intends to give students a clear picture of the profession of architecture as they start their training and to give them some guidance on the attitude of mind that will help them in their approach to design problems. (Criteria subject)

Basic Tools of Building Constructions
Dr. Fülöp Zsuzsanna, Dr. Igaz György
Construction is the realization of architecture. Building construction classes will help students master the control of this realization process, through the learning of academic principles behind practical construction theory. Design must be realized through techniques founded on proper methods and principles of building construction. Course develops a basic understanding of building construction vocabulary, drafting symbolism, various building systems and building components and their interactions. To be able to select appropriate building systems and detail solutions for design tasks.

Computer Literacy 1
Mihály Szoboszlai PhD
General information about computing, computers, and peripheral devices. Input, output and data storage. Methods of problems solving on computers. Algorithms and programs. Basic elements of a programming language, such as symbols, datatypes, statements, control structures and elementary I/O. Practical work on a computer; development and running of small programs. Text editor and translator.

Computer Literacy 2
Mihály Szoboszlai PhD
Introduction to computers, operating systems and computer networks. Browsing and organizing information through Internet, use of Internet based communication. Computers in architectural office: word processing, using spreadsheets, creating presentations. Basics of pixelgraphics and image manipulation.

Geometrical Constructions 1
Pál Ledeczki PhD

Geometrical Constructions 2
Pál Ledeczki PhD

Fundamentals of Structures
BMEEPSTA001
Dr András Draskóczy, Dr Gábor Domokos
Introduction: requirements of the built environment. 1st site visit: an existing, functioning building. Parts of buildings. Discussion of experiences of the 1st site visit: functions and requirements of parts of buildings. 2nd site visit: a construction site. Loadbearing parts of buildings. Discussion of experiences of the 2nd site visit: functions and requirements of loadbearing parts of buildings. The notion of safety. 3rd site visit: laboratory testing of structural members (brickwork column, reinforced concrete beam). Loads and responses when being loaded. Discussion of experiences of the 3rd site visit: structural members; ways of becoming unfit for use: rupture, loss of stability (overturning, sliding, buckling), excessive cracking and deformations. 4th site visit: laboratory testing of structural materials. Yield and rupture. Collection of strength measurement data. Discussion of experiences of the 4th site visit: statistical evaluation of measurement data. The notion of safety, safety factors of materials and loads. 5th site visit: a project bureau. Graphical presentations of buildings. Architecture and structure. Results of structural analysis. Discussion of experiences of the 5th site visit: Parts and kinds of documentation. Scales and graphical symbols. Modelling of structures, structural projects. 6th site visit: ready structure construction site. Discussion of experiences of the 5th site visit: modelling of structures. The static model.
Description of B.Sc/M.Sc Subjects

Mathematics EP1
BMETE90AX24
Dr. Béla Barabás

Descriptive Geometry 1
BMEEPAGA101
Mihály Szoboszlai

Introduction to Building construction
BMEEPESA101
Vörös Ferenc DLA
This subject introduces all major building construction components (walls, foundations, floors, roofs, skeleton frames, stairs, ramps, doors and windows) and primary building engineering service systems. During lectures, the building is considered as a composition of spaces with different functions, separated by special surfaces. The course aims to introduce and explain the grammar of architectural design through practical tasks, such as the survey of one’s own flat. Concurrently, the basic dependant factors of the creative design process are described. Students are acquainted with technical terminology as well as the role and use of various construction solutions including their classifications. The above shall assist students with both starting independent design exercise work and the continuing of building construction studies in greater detail.

History of Architecture I. (The beginnings)
BMEEPETI101
Dr. Gyula Istvánfi, Dr. Péter Rabb

Introduction to Structural Design
BMEEPSTA101
Dr. András Draskóczy Dr Kollár László

Drawing 1
BMEEPRAA101
DLA Balázs Balogh
Representation in a single colour of simple geometric and organic forms with schematic surfaces and surface texture. (5 credits)

Introduction to Architecture
BMEEPUI101
Benkő Melinda PhD
The subject of founding character which consists of 12 lectures strives to embrace every important domain of the architecture, but at the same time it can’t undertake full detailing of certain aspects. This course deals generally with the architecture and its aim is to present its complexity and at the same time its beauty as well. Most important object of the theme is to arouse the professional interest, and to maintain this interest, and to increase the architectural basic culture, and to prepare for the reception of the later special architectural courses. The possible reachable aim is to open the students’ aspect, to increase their intellectual capacity and to make conscious of the multi-coated process of the architecture. Subject matters of the lectures are the followings: Architect, Construction, Nature, City, Man, Time, Form, Techniques, Science and Art.

Space Composition
BMEEPKO101
Prof. Ferenc Cságary DLA
Space composition is the creative course of the first semester, during which the students study the basics of the composition of (architectural) space. The aim of the course on one hand is to develop one’s creativity, on the other hand getting a deeper knowledge about the nature of creating architectural space through space-composition exercises. This knowledge will be the basis of the process of architectural design in the forthcoming semesters.

Mathematics 2
BMETE90AX25
Dr. Béla Barabás

**Descriptive Geometry 2**

BMEEPAGA201

Mihály Szboszolai

Curved lines and surfaces; quadratic surfaces, surfaces of revolution; developable surfaces, screw surfaces, ruled surfaces. Representation in multi-view system, axonometry and perspective. Construction of tangent plane, contour and shadow. Intersection of surface and plane, intersection of a pair of surfaces. Topographic map, projection with elevation, sections, earth works platform, road, cuts and fills.

**Building Constructions 1**

BMEEPSA201

Dr. Ottó László - Dr. Ottó Czeglédi

The subject presents the details of the main load-bearing constructions (walls, floors, stairs) and the joints between them. Wall supported / skeleton frame, or mixed construction. Walls: Effects on walls, and how to fulfill the requirements. Sorting the walls by function, position, material, by layer-order. Walls built from elements, the development of walling elements. Floors: Functions, effects on floors, how to fulfill the requirements. Elements of floor construction. Types: plain floors (in details), arches (overview). The materials, construction lines, building methods, About the future of floors. Joints between walls - floors, skeleton frames - floors. Methodology of the floor design. Stairs: Functions, effects on stairs, how to fulfill the requirements, principles of stressing and how to choose construction. Sorting the constructions by material, load bearing method, building method, etc. Design possibilities.

**Statics**

BMEEPSTA201

Dr Tamás Laki Dr Gábor Domokos


**History of Architecture 2 (Antiquity)**

BMEEPETA201

Dr. Tamás Mezős


**Drawing 2**

BMEEPRAA201

DLA Balázs Balegh

Representation in a single colour of simple geometric and organic forms with schematic surfaces and surface texture. Modelling in space. Various graphic techniques. (4 credits)

**Building Materials**

BMEOEAMA301

Dr. Zsuzsanna Józsa

Origin, texture and main technical properties of natural rocks used as building stones or aggregates. Choices of appropriate rock types and their surface processing and maintenance. The main groups and basic mechanical, physical, and thermotechnical properties of building materials. Inorganic binders, portland cements, influencing factors of concrete’s strengths, durability, shrinkage, etc. Admixtures. Architectural concrete. Steels, timber, ceramics, plastics, heat insulating and waterproofing materials in architecture. Laboratory practical work complements the lectures. (1+4 credits)

**Architectural informatics 1**

BMEEPAGA301

Pál Ledneczki


**Building Physics**

BMEEPEGA301

Heat and moisture transfer:
- Vapour transfer through walls, the Glaser model. Distribution of saturation pressure and partial pressure distribution of multilayer walls.
- Capillary and surface condensation, mould growth, moisture balance of room, sorption isotherms. Design consideration, place of the moisture resistant and thermal resistant.
- Acoustics
- External and internal noise sources. Radiation and propagation of sound, sound pressure level, sound power level, 'level arithmetic', sound field around a point source, sound field around an infinite line source;
- The characteristics of environmental noise: A weighted sound pressure level, equivalent. A weighted sound pressure level
- Sound insulation against airborne sound, sound reduction index, weighted sound reduction index, product data, field

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data;

Sound insulation against impact sound, normalised impact sound pressure level, weighted normalised impact sound pressure level; product data, field data; Sound insulation requirements, analyse the plan of a multi-storey dwelling.

**Strength of Materials 1**

BMEEPSTA301

*Dr István Sajtos*

Introduction; Geometrical properties of plane areas: area, statical moment of area, moments of inertia, product of inertia; Fundamental conceptions: stress, strain, constitutive law, bar model, safety concept; Simple tension; Simple shear and joints; Bending stresses: elastic and plastic symmetrical bending, elastic unsymmetrical bending; Eccentric loading for materials having tensile strength: eccentric tension and compression for elastic stress state, core of section, eccentric tension and compression for plastic stress state; Eccentric loading for materials not having tensile strength: eccentric compression for elastic stress state, eccentric compression for plastic stress state; Bending combined with shear; Torsion; Plane stress state: principal stresses, strength theories, interaction curves.

**History of Architecture 3 (Medieval)**

BMEEPETA301

*László Daragó, Dr. Tamás Mezős*

Students are to get acquainted with the most important historic monuments of the European medieval architecture. They should understand the relationship between pieces of art, learn the most important cultural influences manifest in architecture of their age.


The Carolingian architecture with the "evangelizer" Benedictine movements. The three periods of the German-Roman Empire. The Lombard architecture in North-Italy. The Romanesque vaulting systems: Romanesque cross vault, Sexpartite vaulting, "groin-rib" vaulting. Squire-bayed and free vaulting systems - the pointed arch, Basilica and "false basilica" type space organization. The retrospective interregional influences in Romanesque architecture. - Antique influences. Byzantine influences. The progressive interregional influences in Romanesque architecture - monastic movements II.: Benedictine and Cistercian, and the Norman "Imperial" Romanesque architecture. Morphology of Medieval detailing.

The Early French Gothic cathedrals. The flourishing period of the French cathedrals, and its influences in South-France, in England, in Germany and in Italy. Interregional influences in gothic architecture: Cistercian gothic formations, the Franciscan and Dominican movements. The special characteristics of English and German gothic architecture. Late gothic vaulting systems: Cylindrical (or net vaults) and Spherical (or stellar) vaults. Halls and false-halls. Civic movements in Late gothic in Germany and the proto-renaissance in Italy. Medieval secular architecture.

**Drawing 3.**

BMEEPRAA301

*Dr. István Balogh, DLA Balázs Balogh*

Representation of imaginary basic architectural forms, based on the knowledge acquired in previous semesters. Conscious use fo perspective representation. (4 credits)

**Public Building Design 1**

BMEEPKAIA301

*Prof. Ferenc Cságoly DLA*

Our basis for public building design methodology, the function of public buildings and technical requirements, achieved via a knowledge of architectural history and precedent of type. The course pattern will analyse important examples of Hungarian and International public buildings regarding architectural space, architectural form, the use of materials and structures, in relationship to various environmental factors.

**Building Constructions 2**

BMEEPESA301

*Dr. Bálint Petró, Ferenc Vónis DLA, Sándor Horváth*

The subject deals mainly with pitched roof constructions, roof coverings and different types of foundations - the latter with consideration to waterproofing solutions. During seminar lectures the principles and details of shallow and deep foundations are introduced, according to functional and load bearing requirements of various building constructions as well as subsurface water and soil type effects. Also introduced are the functions and primary principles of different pitched roof constructions such as: traditional roof, rafter type (modern) roof, purlin and truss type roof as well as contemporary methods of carpentry. Further explanation is provided on occupied (built-in) attic constructions with focus on principles, layers, ventilation, windows and lighting. The main types of roof coverings are shown, such as concrete and clay tiles, flashings and metal roof coverings with special attention to principles and details.

**Urban Sociology**

BMET431051

*Dr. János Farkas, Dr. Adrienne Csizmadya*


**Architectural informatics 2**

BMEEPAGA401

*Mihály Szoboszlai*

Fundamentals of vector graphics, two-dimensional (2D), and three-dimensional (3D) Computer Aided Design (CAD) systems. Application of Cartesian and polar coordinate systems. CAD principles from simple 2D drafting to the development of architectural drawings with the use of layers and library elements (blocks). 3D, modeling of geometrical shapes and architectural details.

**Building Constructions 3**

BMEEPESA401

*Dr. Gábor Becker, Dr. Katalin Preisich*

General and detailed review of the structures of the eleva-
tion 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.

**Strength of Materials 2**

*BMEEPSTA401*

*Dr. Tamás Laki, Dr. Gábor Domokos*


**History of Architecture 4**

*BMEEPETA401*

*Dr. János Krähling*


**Drawing 4**

*BMEEPRAA401*

*Dr. István Balogh, DLA Balázs Balogh*

Representation in two colours of composite geometric and organic forms with surface texture. (2 credits)

**Design Methodology**

*BMEEPOA402*

*Prof. Ferenc Cságoly, DLA*

Design Methodology is the theoretical course of the fourth term, dealing with theoretical and practical methodology of architectural design. The point of Theoretical Design Methodology is the design as a modellable process. The process of architectural design thus can be compared to an informatical system, so for making the methodologies more clear the devices of informatics can be used here as well. Practical Design Methodology closely connected with the design process itself shows the process of architectural design. The practical part is to simulate reality, while widening the borders of the methodology. Through designing a fictional building some practical problems and solutions can be discussed. Special Design Processes go along with solving special exercises, designing special buildings. Special methods of building-reconstructions are discussed, along with the design of technologically or structurally determined buildings. Because of its importance a special lecture is on ecological design.

**Public Building Design 2**

*BMEEPOKA401*

*Bálint Marosi*

Target of the exercise, how to realise 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.

**Architectural Informatics 3**

*BMEEPOAGA501*

*Mihály Szoboszlai*


**Basic of Construction**

*BMEEPOKA501*

*Dr. Gyalay Judit, Lepel Adrien, Vidovszky István*

Stimulating introduction of construction processes. The subject shows how to share tasks among participants of construction projects. Introducing the steps of performance. The students learn the basics of cost estimation, time schedule, quality design and site organisation. There are case studies in the field of substructure works, choice of appropriate building technology.

**Building Service Engineering 1**

*BMEEPOEGA501*

*Dr. András Majoros, Dr. Tamás Csoknyai, Mr. János Viczai*

Water supply


Waste water systems


Gas supply


Artificial lighting


Characterisation of surfaces: reflection and transmission,
spread of light, colour.


Meeting of requirements. Efficiency-method. Proposed setting of luminaries.

Electric network of buildings


Connection of building to public network. Transformers and its placing.

Required areas of switchboards and transformers. Indirect contact.

**Building Construction 4**

**BMEEPEAS501**

*Dr. Andrea Koronkay, Dr. Katalin Preisch, Sándor Horváth*

General design principles of flat roofs. Basic construction principles (inclination and geometry of the water collecting areas). Requirements concerning to the different constructions, layers, materials, building physics. Ordinary and up-to-date waterproofings (coatings, dispersals, sheets, membranes), features of the different materials. Tracking type and terrace roofs, green roofs. Floor covering constructions for terrace roofs. Waterproofing against terminal and industrial wet effects. Separating structures: lightweight partition walls, suspended ceilings, double floors. Internal structures: floor constructions, internal claddings, coverings. Construction for safety usage of the buildings: chimneys, ventilation shafts, handrails, security systems. Building physics analysis of the rooms.

**Design of Load-Bearing Structures**

*BMEEPESTA501*

*Dr István Sajtos*

- Design principles of load-bearing structures: Design principles; Loads; Process of load-bearing structure design; Design of arches; Design of plates and deep beams; Design of shells; Design of cable and tent structures; Design of folded plates and space frames; Design of stiffening system of buildings; Design of foundations and sub-structures; Design of load-bearing structures for fire.

- Calculation of load-bearing structures: Steel structures: bolted and welded joints, design of beams and columns; Reinforced concrete structures: design of beams for bending and shearing, design of columns; Timber structures: nailed and bolted joints, design of beams and columns; Masonry structures: design of walls for compression, bending and shearing.

**History of Architecture 5 (19th century)**

*BMEEPETA501*

*Dr. Ágnes Gyetvai-Balogh, Dr. Tamás Mezős*

- Different periodizations in different countries and eras
- New structures and materials in the architecture
- New functions in the architecture
- Neo-Classicism and Romanticism in France
- Neo-Classicism and Romanticism in Great Britain
- Neo-Classicism and Romanticism in the United States
- Neo-Classicism and Romanticism in Germany
- Neo-Classicism and Romanticism in Russia
- Hungarian architecture in the 19th century and at the turn of the century
- Eclecticism
- Iron and steel structures
- Turn of the 20th century in Europe
- Pre-Modern style
- Chicago School
- Final test

**Drawing 5**

*BMEEPRAA501*

*Dr. István Balogh, Dr. Csaba Molnár*

Representation of the interpretation of spaces and masses, and also spaces between spaces, with surface textures and building structures. (2 credits)

**Urban Design 1**

*BMEEPUA501*

*Gábor Locsmándi, Árpád Szabó DLA, Sándor Pály DLA*

- The subject is the theoretical course of the fifth semester, with 2 hours lecture weekly.

- Man during historical times has always lived in communities, so his life has been determined by his relation to the rest of the community, while at the same time a house erected is also determined by its built environment.

- The same way as a man cannot be separated from his community, a building cannot be separated from its urban environment. The architectural quality can be well described by relation of the building to its environment.

- The main scenes of the lives of communities are the settlements, where the most developed examples are cities. Why are settlements formed or deserted, why are they developing or declining? What should be the ratio of planned and unplanned elements in a settlement? What is the role of private and public interests, of private and public properties in the development of a settlement? How is a city functioning and what are the most efficient means of its operation?

- We are looking for the answers to these - sometimes philosophical - questions and looking for the relation between the inseparable categories of building and city, architecture and urban development.

**Macroeconomics**

*Dr. Edit Romvári, Dr. Dietmar Meyer*


**Building project management**

*BMEEPEKA601*

*Dr. Gulyay Judit, Lepel Adrienn, Vidovszky István*

- 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.
Building Constructions 5

BMEEPESM601

Dr. Adám Pattantyús, Dr. Zoltán Hunyadi

This subject is about the efficient structural design methods of the load bearing systems built by silicate (r.c.) pre-cast big block or built with monolithic industrial techniques and its special additional structures. Procedures for structural design. Energetic, vapour protecting, acoustical, fire protecting aspects of the design and its legal background. Modular planning, rules of the synthesis, structural connections. Monolithic and pre-cast wall and frame structures.

Special foundation and isolation techniques, deep foundations. Pre-cast r.c. façade elements.

Pre-cast r.c. stairs. Solutions for structural dilatation gaps. Placing mechanical trajectories. Aim is showing the structural set-up of the entire building.

Preservation of Historic Monuments *

BMEEPEAT601

Dr. Tamás Mezős


History of Architecture 6 *

BMEEPETM602

Dr. Mariann Simon / András Szalai


Drawing 6

Dr. István Balogh, DLA Csaba Molnár

Representation of the interpretation of spaces and masses, and also spaces between spaces, with surface textures and building structures. (2 credits)

Department’s Design 1 *

BMEEXA611

György Major DLA

This is the design exercise in the sixth semester for the students. The aim of the course is to experiment the complexity of an architectural problem through several smallscale exercises in architecture, interior design, environmental design, object design and graphics. There are three exercises in this term, based on the theme of: object and form, space and function, environment. All three of these exercises are based on a part or a continuation of a building, an unbuilt project or on an ongoing project, the aim is to solve or develop parts of these.

Urban Design 2

BMEEPUIA601

Arpád SZABÓ DLA, Sándor PALFY DLA

Based on the basic profile of the Department of Urban Planning and Design, the Urban Design II. is the integrate continuation of the Urban Design I. course and its main goal is to use in practice the theories learnt formerly.

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 of urban environment for all the 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.

Microeconomics

BMEEPK7A601

Dr. Edit Romvári, Dr. Dietmar Meyer


Planning of construction technology

BMEEPK7A701

Dr. Gyulay Judit, Vidovszky István, Lepel Adrienn

The subject introduces how to apply recent innovations of building technologies during design and performance. It gives a basic knowledge to evaluate construction options and make appropriate decisions about technology. There are case studies of building technologies used in super-structure, finishing or cladding works. Assignment: choice of building technologies, planning of performance (quality, cost, time, building site).

Building Constructions 6

BMEEPESM701

Mr. Sándor Horváth, Dr. László Kakas

This subject introduces the students to the steel and the timber loadbearing construction systems and their special additional structures by a system- and performance-based approach. - Small-span, single- and multi-storey steel frames - Steel hall structures - Hall roofs, skylights, glass roofs - Steel and aluminium facade wall-panels - Curtain walls - Timber single- and multi-storey, skeleton frame and wall loadbearing systems - Prefabricated sandwich-type and in-situ assembled external wall panels - Special methods of foundation and waterproofing - Special partition walls and roof constructions. 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.

**History of Art I.**

BMEEPETA701

András Szalai


Bibliography: Ernst H. Gombrich: The Story of Art, Phaidon, 1995; Michael Levey: A History of Western Art; and other (selected) books of WORLD OF ART series: Thames and Hudson, Oxford University Press; etc. (2 credits)

**Drawing 7**

BMEEPRAA701

Dr. István Balogh, DLA Balázs Balogh

Representation of several colours of spaces, streets, and building ensembles with surface textures and of building structures; designing in colour. (2 credits)

**Department’s Design 2**

BMEEPXXA711

The course is in strong relationship with the sixth semester’s other course "Department’s Design 1". There are three small exercises in this term, based on the theme of: modelling, construction, visuality. All three of these exercises are based on the exercises made during "Department’s Design 1", by solving or developing some parts of those. Thus the students has the opportunity to experience more the richness of the designing process. The first exercise deals with the question of creating a mode and its role in the architectural praxis and in the experience in the human cognition. The second exercise is construction, this one is examining the relationship between the already made model and the main space-structure of the ongoing design "small complex". The third small exercise is called visuality, during which the student makes a detailed drawing of an ornament chosen by the consultant and the student together.

**Small Complex Design**

BMEEPXXA611

Péter Sugár DLA

This is the design exercise in the seventh semester for the students. The aim of the course is to experiment the complexity of an architectural design exclusively within the boundaries of architecture. During the semester a smaller scale (600-1200 m²) public building is to be designed, focusing on three main principles, which are: contextuality, spatial organisation and ornament. Thus the course is divided into three parts, each closed by a study plan. The focus of the first part is contextuality, which means the relationship between the building and its surroundings. The motto for the second part is spatial organisation, the aim of this part is focusing on the function, its identity. The closing part of the semester deals with ornament, namely two aspect of this: structural ornament and the ornament of the surfaces.

**Building and architectural economics**

BMEEPEKA801

Dr. Mályusz Levente

1. Basics of Engineering Economics, NPV, IRR
2. Hungarian real estate market and construction sector
3. Trends in construction market
4. Cost estimating, life cycle costing, cost indexes
5. Building cost, cost of planning, construction and maintenance
6. Predicting the total cost and duration of a construction project
7. Cash flow of a construction projects

**CAAD and architectural informatics**

BMEEPAGA871

Mihály Szoboszlai

Advanced use of CAAD applications to build 3-dimensional digital models of buildings and objects. Software integration of architectural office applications. Generating list and databases.

**Reinforced concrete structures I.**

BMEEPST4617

Dr. András Draskóczy, Dr Kollár László

Introduction, loads, concrete and steel, modelling of reinforced concrete, historical review!


**Brief History of Hungarian Architecture**

BMEEPETA705

Dr. János Kráhling


**Drawing 8**

BMEEPRAA801

Dr. István Balogh, DLA Balázs Balogh

Representation of several colours of spaces, streets, and building ensembles with surface textures and of building structures; designing in colour. (2 credits)

**History of Theory of Architecture**

BMEEPETA875

Dr. János Kráhling

The beginnings of the history of theory of architecture in the Antiquity. The treatise of Vitruvius. Architecture theory in the middle ages from early christianity to late gothic period. Humanism and the revival of antique architecture in the 15th.

Complex Design 1 *

BMEEPXXA821

Péter Fejérdy DLA

The studio's first semester target is to realise the design of a public building to such a level that it could be submitted for town planning approval based upon a real location. The design being developed both in drawings at a scale of 1:100 and written specification documents with the assistance of architectural consultants. The students work should fit the requirements of a given brief and be proved by academic research into buildings and functions of similar type. With the assistance of Tutors from the associated teaching departments the design should be proved from the point of view of Structural Engineering, Construction Technology, Mechanical Engineering and Environmental Engineering solutions - choice of tutors open to student. At the semesters end the design should be presented on drawn design boards accompanied by a bound specification document. These should present the analysis, design solutions, technical solutions and required proposals for development of the project. A scale model of the building will also be required. Grades for this project will be distributed as follows: Architectural Design 60%, Structural Engineering 10%, Construction Technology 10%, Mechanical Engineering 10% and Environmental Engineering 10%.

Controlling of Construction Technology **

BMEEPKABO3

Dr. Gyulaud Judit, Vidovszky István, Lepel Adrienn

The subject introduces how to avoid failures in construction. It shows the basics of supervision, the requirements of quality work, standards. There are case studies in the field of sub-structure, super-structure, finishing and cladding works. Individual task: Technoogcal design of a building.

Soil Mechanics

Dr. Géza Petrasovics, Dr. József Farkas

Fundamentals of soil mechanics, including information indispensable to architectural practice such as the interaction between subsoil and building, the importance of testing the subsoil, foundation costs, essential soil properties, soil exploration methods, the design of spread foundations, drainage of working pits and design of deep foundations. (3 credits)

Drawing 9 *

Gábor Nemes, Dr. Gábor Tari


Interior Design *

BMEEPKOA971

Mr. Imre Batta

 Introduced fundemantal concepts and methods for planning organizing, and arraging spaces in the interior environment. Students examine an existing or planned building in terms of human needs, activities, and priorities, and create large scale design solution of a selected space, illustrating the applied materials or finishes, lighting, furniture and fixtures. (3 credits)

Complex Design 2 *

BMEEPXXA921

Péter Fejérdy DLA

The second semester will focus on the development of project from Complex Design I, to a level that could be used a production information (Construction) documents. Plans at a scale of 1:50 accompanied by detail drawings at a larger scale (1:10,1:5...), with details regarding interior design and landscape elements. In addition to the architectural solutions the design should be detailed regarding Structural Engineering, Construction Technology, Mechanical Engineering and Environmental Engineering with assistance from tutors at respective departments. The target being to realise a complex comprehensive design solution that could be realised onsite as a real project.

Theory of Design*

BMEEPKOA901

DLA József Kapitány

The subject has a design-oriented goal, trying to articulate to an understanding the role of architecture in pursuit of the more meaningful surroundings illustrated by the prominent variants of fundamental vocabulary. It is illustrated by the efforts informational goals and continuous reactions, in the forefront with neo-classicism, functionalism, post-modernism, and after. (2 credits)

Building Constructions 7 **

BMEEPESA702

Dr. Erzsébet Lánya, Dr. László Kakasy


Architecture of Workplaces I-II

Dr. Anikó Simon

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, noise control, colour dynamics and storage facilities. Constructions of sin-