

Annotations of the Obligatory Subjects in Master's Degree Study in the Building Structures and Architecture (PSA) Study Programme

Subject: Building and Energy

2/2e 4Cr

Guarantor: Assoc. Prof. Ing. Boris Bielek, PhD.

Lecturer: Assoc. Prof. Ing. Boris Bielek, PhD.

Aim of the subject: The student will acquire knowledge about the basics of theory and construction design of buildings, characterized by purposeful energy saving with utilization of ecologically clean alternative sources. He will understand the principles of development of the theory in justified system relation of building – climate – energy. He will better understand the modern software for anticipation and calculation of energy consumption of buildings. The student will acquire the ability to design and quantify buildings in relation to rational utilization of energy in creation of an ecological-architectural environment.

Subject: Low-Energy and Ecological Architecture

2/2e 4Cr

Guarantor: Prof. Ing. Jozef Hraška, PhD.

Lecturer: Prof. Ing. Jozef Hraška PhD

Aim of the subject: The student will acquire knowledge about innovations of building materials, construction elements and building systems concerning low energy and ecological architecture. The student will obtain information about current research findings and trends in this area. The aim is to evolve and extend creative and critical abilities and analytical thinking of the student. In the framework of seminars the student will adopt acquired information in design of ecological buildings (for example adobe buildings, buildings from straw bales, etc.), low energy buildings (for example solar buildings, passive buildings), intelligent buildings and other similar ones or he will prepare an article on the assigned topics dealing with low-energy and ecological architecture.

Subject: Typology 5

2/2 e 4 Cr

Guarantor: Assoc. Prof. Ing. arch. Elena Dohňanská, PhD.

Lecturers: Assoc. Prof. Ing. arch. Jozef Liščák PhD., Vis. Assoc. Prof. Ing. arch. Peter Bauer, Ing. arch. Peter Sedlák

Aim of the subject: The student will acquire knowledge about the typology of buildings for sports facilities, culture events, education, health and religious buildings. The student will get information about their functional brief, functional units and their relations to the layout. The course is a preparation for independent and creative conceptual project work.

Subject: Design Studio 5

0/4cc 11 Cr

Guarantor: Assoc. Prof. Ing. arch. Elena Dohňanská, PhD

Lecturers: Assoc. Prof. Ing. arch. Jozef Liščák Ph., Vis. Assoc. Prof. Ing. arch. Peter Bauer, Ing. arch. Zuzana Nádaská PhD, Ing. arch. Margita Kubišová PhD., Ing. Ing. arch. Jozef Kuráň, Ing. arch. Peter Sedlák

Aim of the subject: The student will acquire skills in analyzing and integrating the knowledge on completion of the course subjects (architectural, technical, humanities), which he will apply in

his design of buildings for permanent or temporary accommodation, civic buildings, buildings for leisure, sports facilities, cultural events, education, health and religious buildings.

Subject: History of Architecture and Art III

2/2e 4Cr

Guarantor: Assoc. Prof. Ing. arch. Jarmila Húsenicová, PhD.

Lecturer: Ing. arch. Vladimíra Šimkovičová, PhD.

Aim of the subject:

Development of architecture and art since 20th century, analysis of styles, monuments, and works of art.

Subject: Urbanism 2

2/2e 4Cr

Guarantor: Assoc. Prof. Ing. arch. Jarmila Húsenicová, PhD.

Lecturers: Assoc. Prof. Ing. arch. Jarmila Húsenicová PhD, Prof. Ing. Bystrík Bezák PhD, Vis. Prof. Ing. Dr. Werner Kwarda

Aim of the subject: The student will acquire information about the town and country planning as a tool for the territorial development management. The course deals with elaboration methods of town and city planning at all levels. The student will get knowledge about relationship between town and city planning and construction law, about pattern and body of settlements, about processes of formation and development of the territory, about tools of building towns and villages and their connections with transportation and engineering networks. The student will get information about regions in Europe, about principles of spatial utilization of an area, about their regulation and management. The course is orientated also to the problems of sustainable territory development and to the problems of regional urban economics.

Subject: Pathology of Buildings

2/2 e 4 Cr

Guarantor: Prof. Ing. Anton Puškár, PhD.

Lecturers: Prof. Ing. Anton Puškár, PhD, Ing. Milan Držka, PhD.

Aim of the subject: The student will acquire knowledge in the field of reconstruction and sanation of structures in sequence of the subject Building Construction I-V. He will be able to analyze failures and defects of materials, constructions and structures. He will get information in the field of design and application of building materials and procedures of classic and contemporary technologies for sanation and reconstruction of building structures.

Subject: Restoration and Preservation of Monuments

2/2 s 4 Cr

Guarantor: Assoc. Prof. Ing. arch. Elena Dohňanská, PhD.

Lecturers: Assoc. Prof. Ing. arch. Elena Dohňanská PhD., Ing. Oto Makýš PhD

Aim of the subject: The student will get information about principles, laws, and legislation in the design in historical environment, about methods and procedures of protection and restoration of monuments and their elements and details. The student will get information about historical constructions and specific approach to their reconstruction, respecting their authenticity and historical value.

Subject: Design Studio 6**04/cc 12 Cr**

Guarantor: Assoc. Prof. Ing. arch. Elena Dohňanská, PhD.

Lecturers: Assoc. Prof. Ing. arch. Elena Dohňanská, PhD, Assoc. Prof. Ing. arch. Jarmila Húsenicová, PhD, Assoc. Prof. Ing. arch. Jozef Liščák, PhD, Ing. arch. Peter Sedlák, Ing. arch. Jozef Kuráň, Ing. arch. Zuzana Nádaská, PhD, Ing. arch. Margita Kubišová, PhD. Vis. Assoc. Prof. Ing. arch. Peter Bauer

Aim of the subject: The student will acquire skills in analyzing and integrating the knowledge on completion of the course subjects (architectural, technical), which he will apply in his design (e.i. civic, transportation, industrial buildings or civil engineering structures). He will adopt requirements for alternative energy sources and ecology. Experiments and non-traditional architectural, constructional, building material and futuristic designs are dealt with.

Subject: Internship**3 weeks c**

Guarantor: Assoc. Prof. Ing. arch. Elena Dohňanská, PhD

Lecturer : Ing. arch. Vladimíra Šimkovičová, PhD

Aim of the subject: The student will acquire practical knowledge in the field of preservation and restoration of monuments. The student will visit institutions for protection of monuments and will study materials of a selected monument. He will survey the monument; make observations of the whole of the building, details, defects, photodocumentations, drawings, and sketches. After a consultation with professionals in the field of protecting monuments he will elaborate documentation, based on the actual status of a construction and evaluation report. This work is a preparation for Design Studio 9

Subject: Urbanism 3**2/0 e 3 Cr**

Guarantor: Assoc. Prof. Ing. arch. Jarmila Húsenicová, PhD.

Lecturers: Assoc. Prof. Ing. arch. Jarmila Húsenicová, PhD, Prof. Ing. Bystrík Bezák, PhD,

Aim of the subject: The student will acquire knowledge and skills for conceptual elaboration of a case study of urban design (scale 1:1000, 1:500). The course is aimed to gather information in the field of urban economy.

Subject: Design Studio 7**0/3 cc 6 Cr**

Guarantor: Assoc. Prof. Ing. arch. Jarmila Húsenicová PhD

Lecturers: Assoc. Prof. Ing. arch. Jarmila Húsenicová Phd , Visit. Assoc. Prof. Ing. arch. Peter Bauer, Assoc. Prof. Ing. arch. Jozef. Liščák PhD

Aim of the subject: The student will acquire knowledge and skills in the basic terminology of town and country planning, in preparation and elaboration of the town and country planning documentation, according to the Law No. 50/ 1976 Coll. , respectively Law No. 237/200 Coll. Design Studio 7 is a complex urban study in a preparatory phase and elaboration of the Master Plan of the Settlement.

Subject: Interior 1**2/0 e 3 Cr**

Guarantor: Prof. Ing. arch. akad.arch. Miloslav Mudrončík

Lecturers: Assoc. Prof. Ing. arch. Jozef Liščák PhD., Visit. Assoc.Prof. Ing. arch. Peter Bauer

Aim of the subject: The student will acquire knowledge about principles of creative interior design, basic elements, constructions, and application of the arts. The student will also acquire information about the basics of exhibition design.

Subject: Design Studio 8 Interior-Design**0/3 cc 4 Cr**

Guarantor: Prof. Ing. arch. akad.,arch. Miloslav Mudrončík

Lecturers: Assoc. Prof. Ing. arch. Jozef Liščák , PhD, Visit. Assoc. Prof. Ing. arch. Peter Bauer, Ing. arch. Zuzana Nádaská, PhD., Ing. arch. Margita Kubišová, PhD., Ing. arch. Peter Sedlák

Aim of the subject: The student will design a part of the interior of the building from his previous projects (Design Studio I-VI). He will design selected space (layout, surface of floors, ceiling, walls, doors, windows), he will arrange mobile elements in it (furniture, green decoration, works of art, etc.).

Subject: History of Architecture and Art IV**2/0 e 2 Cr**

Guarantor: Prof. Ing. arch. akad. arch, Miloslav Mudrončík

Lecturers: Ing. arch. V. Šimkovičová, PhD., Assoc. Prof. Štefan Bobota, painter

Aim of the subject: Understanding of heritage issues in the built environment, in the historical and contemporary context. History of theories of architecture, analyses of leading personalities in architecture and their works.

Subject: Design Studio 9**0/3 cc 6Cr**

Guarantor: Assoc.Prof. Ing arch. Elena Dohňanská, PhD.

Lecturers: Assoc. Prof. Ing arch. Elena Dohňanská, PhD., Assoc.Prof. Ing. arch. Jozef Liščák, PhD., Vis. Assoc. Prof.Ing. arch. Peter Bauer, Ing.arch.Peter Sedlák, Ing.arch. Ing. J. Kuráň, Ing. Oto Makýš, PhD

Aim of the subject: Complex Design Studio, focused on restoration of historical, protected structures and their elements and details.The student will analyze and synthesize knowledge from architectonic, statical and construction subjects, human sciences and subjects concerning protecting and renovating settlements and monuments. He will renew the monument, respecting its specific historic value and will often propose a new function for it. Consultation with professionals from the institutions for protecting monuments is recommended.

Subject: Special Seminar**0/2 c 1 Cr**

Guarantor: Assoc. Prof. Ing. arch. Elena Dohňanská PhD

Lecturers: Assoc. Prof. Ing. arch.Elena Dohňanská PhD. Assoc. Prof. Ing.arch Jozef Liščák PhD, Visit. Assoc. Prof. Ing.arch. Peter Bauer, Ing. arch. Zuzana Nádaská , PhD. , Ing. arch. Margita Kubišová, PhD. Assoc. Prof. Ing. arch. Jarmila Húsenicová, PhD., Ing. arch. Peter Sedlák , Ing. arch. Ing. Jozef Kuráň

Aim of the subject: This subject is a preparation for the thesis. (Design of buildings for permanent or temporary accommodation, public, religious buildings, industrial buildings, or civil

engineering structures). Acquired knowledge about functional units, typology, and running of the structure, which will be solved in the thesis.

Subject: Thesis

0/9 cc 15Cr

Guarantor: Assoc. Prof. Ing. arch. Elena Dohňanská, PhD.

Lecturers: Assoc. Prof. Ing. arch. Jarmila Húsenicová, PhD., Ing. arch. Margita Kubišová, PhD., Assoc. Prof. Ing. arch. Elena Dohňanská, PhD., Ing. arch. Peter Sedlák, Assoc. Prof. Ing. arch. Jozef Liščák, PhD, Vis. Assoc. Prof. Ing. arch. Peter Bauer

Aim of the subject: Thesis proves knowledge and skills of the student to synthesize accumulated information from the field of architecture, construction and theories of design in architecture and building structures. Thesis proves also the ability of the student to integrate acquired knowledge in a creative approach in design and to work independent. The student will solve the overall volume design of the given structure, functional units, and also the context: ecological, historical, cultural, social, physical. Defending the thesis before the commission is focused on professional presentation, visual and verbal communication. A part of each student's presentation is a portfolio of all Master's Degreee Study architectural projects and thesis.

Subject: Design Studio 10

0/3cc 6 Cr

Guarantor: Assoc. Prof. Ing. arch. Jarmila Húsenicová, PhD.

Lecturers: Assoc. Prof. Ing. arch. Jarmila Húsenicová PhD.D., Prof. Ing. Bystrík Bezák, PhD. Assoc. Prof. Ing. arch. Jozef Liščák, PhD., Vis. Assoc. Prof. Ing. arch. Peter Bauer, Vis. Prof. Ing. arch. Werner Kvarda

Aim of the subject: The student will acquire knowledge about urban design and regulations with regard to the level of the area in the sense of sustainable development. The student will understand the relationship in urban design from the level of cadastral territory of towns and villages to the design of areas on the local level – inside the settlement (Master Plan of the Locality)

Subject: Methodology of Scientific Experiment

2/0 cc 2 Cr

Guarantor: Assoc. Prof. Ing. Juraj Žilinský, PhD.

Lecturer: Assoc. Prof. Ing. Juraj Žilinský, PhD.

Aim of the subject: The student will acquire knowledge about modern physical and constructional experimental methods and will be able to describe them, to analyze experimental procedures and to evaluate the measuring results.

Subject: Spatial Economics

2/1 cc 2 Cr

Guarantor: Assoc. Prof. Ing. Mária Zúbková, PhD.

Lecturer: Assoc. Prof. Ing. Mária Zúbková, PhD.

Aim of the subject: The student will acquire knowledge, inevitable for the marketing plan of the region. This knowledge will support the qualified decisions in investment activities which are important for economically and spatially justified location of the new infrastructure and buildings.

Annotation of the Optional Subjects in Master's Degree Study in the Building Structures and Architecture (PSA) Study Programme

Subject: Philosophical, Aesthetical and Compositional Principles in Architectural Design
2/1 e 4 Cr

Guarantor: Ivan Řehák, sculptor
Lecturers: , Ivan Řehák, sculptor

Aim of the subject: The student will acquire knowledge and ability to understand principles of creative architectural design, views in broad context of sociology, philosophy and aesthetics.

Subject: History of Urbanism and Settlements 2/1 e 3 Cr

Guarantor: Assoc.Prof. Ing, arch. Jarmila Húsenicová, PhD.
Lecturers: Ing. arch. V. Šimkovičová, PhD., Assoc. Prof. Ing, arch. Jarmila Húsenicová, PhD.

Aim of the subject: The student will acquire knowledge about basic development of human settlements in overview since prehistoric times including the present times.

Subject: History of Drawing and Sketching 2/1 e 3 Cr

Guarantor: , Ivan Řehák, sculptor
Lecturers: , Ivan Řehák, sculptor

Aim of the subject: The student will acquire knowledge in history of drawing, its development and aesthetic principles, about utilizing of various materials and about interdisciplinary relations between architecture and visual arts.

Subject: Solar Technique and Illumination of Buildings 2/1e 3 Cr

Guarantor: Prof.Ing. Jozef Hraška, PhD.
Lecturers: Prof. Ing. Jozef Hraška, PhD., Ing. Milan Janák, PhD.

Aim of the subject: The student will acquire knowledge in solar technology and daylighting of buildings. The student will be able to formulate and apply even more complex problems from this area in relation to the design of ecological and so-called intelligent buildings with photovoltaic and solar collectors application in buildings facades.

Subject: Mathematics in Architecture 2/1 e 3 Cr

Guarantor: Prof. M. Komorníková PhD
Lecturer: RNDr. Angela Handlovičová

Aim of the subject: The student is involved in the problems of thought-provoking relations between architecture and mathematics from both, classical and modern point of views. Golden section and its properties, polygonals, interesting surfaces and their applications in architecture

are studied in the first-classical part. The second - modern part consists of fractal theory, modern surface properties and basic computer graphics knowledge.

Subject: High- Rise and Large-Span Reinforced Concrete Systems **2/1 e 3 Cr**

Guarantor: Assoc. Prof. Ing. Ivan Harvan, PhD.

Lecturers: Assoc. Prof. Ing. Ivan Harvan, PhD., Ing. Iyad Abrahoim, PhD.

Aim of the subject: The student will acquire knowledge of the following topics: load-bearing systems of high-rise and large span concrete buildings, the effects of wind loads and earthquakes on high-rise buildings, transfer of a load through the supporting structure into the subsoil, general laying out of the tie walls and hubs in a building's floor plan, their design and reinforcement, structural possibilities of the concrete structure's span increasing.

Subject: Steel, Timber and Glass in Architecture **2/1 e 2 Cr**

Guarantor: Assoc. Prof. Ing. Ján Brodniansky, PhD.

Lecturers: Prof. Dr. Ing. Zoltán Agócs, PhD., Assoc. Prof. Ing. Ján Brodniansky, PhD., Assoc. Prof. Ing. Ferdinand Draškovič, PhD.

Aim of the subject: The student will acquire knowledge and skills in the design of long span steel and timber load bearing systems, will be able to cope with the problems of high-rise buildings and he will also be able to design constructions from timber and new materials produced on the timber base level and constructions using glass as a bearing element.

Subject: Acoustics in Architecture **2/1 e 2 Cr**

Guarantor: Prof. Ing. Peter Tomašovič, PhD.

Lecturers: Prof. Ing. Peter Tomašovič, PhD. Ing. Viera Gašparovičová, PhD., Ing. Monika Rychtáriková, PhD.

Aim of the subject: The student will acquire knowledge and skills in location of buildings with respect to the noise in the exterior, in designing and assessing external and internal dividing structures from sound isolation point of view, the knowledge: about theoretical methods of calculation of assumed noise levels in exterior and interior of buildings, dimensioning external claddings of buildings in relation to the traffic noise, about designing enclosed spaces from the room acoustic point of view, about methods of noise reduction in interior and exterior of buildings and about constructional anti-noise conditioning, simulations in acoustics, measurement methods and their evaluation.

Subject: Progressive Materials and Constructions in Buildings **2/1 e 2 Cr**

Guarantor: Prof. Ing. Jozef Oláh, PhD

Lecturer: Prof. Ing. Jozef Oláh, PhD., Ing. Erik Jakeš, PhD.

Aim of the subject: The student will acquire knowledge about progressive building materials and constructions of new building structures. The student will be able to apply new materials in his projects and comprehend their static and physical characteristics.

Subject: Ecology of Urban Settlements and Urban Traffic Planning 2/1 e 2 Cr

Guarantor: Prof. Ing. Bystrík Bezák, PhD.

Lecturer: Prof. Ing. Bystrík Bezák, PhD.

Aim of the subject: The student will acquire theoretical knowledge in the field of the sustainable spatial organization of different types of urban settlement and their functional elements. The relation between the settlement and transportation, planning principles and procedures for the systemic design of transportation and practical tasks are dealt with.

Subject: Design of Architectural Structures 2/1 e 2 Cr

Guarantor: Prof. Ing. Anton Puškár, PhD

Lecturers: Ing. arch. K. Minarovičová, PhD, Ing. arch. R. Rabenseifer, PhD

Aim of the subject: The student will acquire knowledge about the architectural design of details, emphasised on architectural concept. He will study shapes, forms, and materials and colours of the elements in relation to the function of the whole structure. The student will know, how to analyze and integrate knowledge in building physics, construction design and architectural design, he will apply it in the project. He will be able to formulate and solve the complex problems in the field of the theory of architectural and construction design.

Subject: Façade Technique of Intelligent Buildings 2/1 e 2 Cr

Guarantor: Assoc.Prof. Ing. Boris Bielek, PhD.

Lecturer: Assoc. Prof. Ing. Boris Bielek, PhD.

Aim of the subject: The student will acquire knowledge from the basics of theory and construction design of buildings in the field of modern façade technology, characterized by utilization of alternative energy source of solar radiation. He will understand the principles of modern physical theory of cavities and will acquire skills in the utilization and in interaction between building-façade, represented by simulation of optimalization of climatic and energy concepts of a building. The student will acquire skills in the theory of construction – technological design of new façade technology of intelligent buildings.

Annotation of the Recommended Subjects in Master's Degree Study in the Study Programme PSA

Subject: Computer Graphics 2/1 e 2 Cr

Guarantor: Prof. Ing. Jozef Hraška, PhD.

Lecturer: Ing. Martin Jamnický, PhD.

Aim of the subject: The student will acquire knowledge of interactive computer graphics and different systems of computer graphics as well as their application and development; he will apply CAD software in his project documentation.

Subject: Ecological Design in Solar Age

2/1 e 2 Cr

Guarantor: Visiting Prof. Ing.arch. Werner Kvarda

Lecturer: Visiting Prof. Ing. arch. Werner Kvarda

Aim of the subject: The student will acquire knowledge of the ecological design of structures; he will get acquainted with the issues of that way of thinking. The lectures are presented in the English language.

Subject: Environmental Technology in Intelligent Buildings

2/1 e 2 Cr

Guarantor: Prof. Ing. Dušan Petráš, PhD

Lecturer: Prof. Ing. Dušan Petráš, PhD

Aim of the subject: The student will acquire knowledge about the principles of the selection and design of optimal energy systems which cooperate in the creation of indoor environments in intelligent buildings, considering the 3D principle – energy consumption, economic effectiveness and environmental burden and their effect on thermal balance from the point of impact of agents on thermal sensation of occupant and also on assessment of thermal, humidity and aerodynamics factor environment.

Subject: Structural Instruments of EU and Regional Politics

2/1 e 2Cr

Guarantor: Prof. Ing. Koloman Ivanička, PhD

Lecturer: Assoc. Prof. Ing. Mária Zúbková, PhD

Aim of the subject: The student will acquire knowledge about organization and management of state and public administration and will obtain information about regional policies in Slovakia and EU, about the most important EU authorities, possibilities of project financing via the EU funds along with the cofinancing by the Slovak commercial banks. He will acquire new experience in order to get involved in a team work which will be preparing and will be in charge of the European projects in Slovakia.

Subject: Management of Investment Projects

2/1 e 2 Cr

Guarantor: Prof. Ing. Koloman Ivanička, PhD.

Lecturer: Ing. Zora Petránková, PhD.

Aim of the subject:

The subject will acquire knowledge about regional politics of EU, preparation and management of projects. Proposal, its preparation and management of finances and activities, sources of proposal financing, costs effectiveness Evaluation of proposals. Control and monitoring of the proposal.

Subject: Copyright and Law for Designers

2/1 e 2 Cr

Guarantor: JUDr. Gajaník Ján

Lecturer: JUDr. Gajaník Ján

Aim of the subject: The student will acquire knowledge in the field of protection the intellectual property (know-how), especially about law for designers, applicable in their professional practice.

Subject: Landscape Architecture

2/1 cc 2 Cr

Guarantor: Assoc. Prof. Ing. arch. Jarmila Húsenicová, PhD

Lecturers: Assoc. Prof. Ing. arch. Jarmila Húsenicová, PhD, Vis. Prof. Ing. Dr. Werner Kvarda

Aim of the subject: The student will acquire knowledge emphasised on non-technical exterior aspects of architecture and urbanism with the utilisation of natural components. He will get acquainted with historical development of landscape and gardens, surrounding the settlements and the principle natural components and methods of their formation by particular civilisations including the present-day global impact on nature by man.

Subject: Historical Building Technologies

2/1 cc 2 Cr

Guarantor: Assoc. Prof. Ing. arch. Elena Dohňanská, PhD.

Lecturer: Ing. Oto Makýš, PhD

Aim of the subject: The student will acquire knowledge about historic construction technologies and materials used in the time of the construction of historic buildings, with a focus on construction realizations from the point of view of their present-day use in the restoration of an architectural heritage. The student will obtain knowledge about architectural historic periods based on the materials and technologies used - the subject deals with forgotten and out-of-data construction technologies, especially in the area of masonry (i.e., wall and vault systems), wooden constructions, specific surfaces, the realization of vernacular architectural structures, etc.

Subject: Interior II

2/1 cc 2 Cr

Guarantor: Assoc. Prof. Ing. arch. Jozef Liščák, PhD.

Lecturers: Ing. arch. Peter Sedlák, Ing. Ing. arch. Jozef Kuráň, Vis. Assoc. Prof. Ing. arch. Peter Bauer

Aim of the subject: The student will acquire knowledge about the principles of interior design, antropometrical requirements, application of suitable material design, detail projection and a whole interior complex, as well as about specific demands on public interior.