

Institute of Architectural Engineering – COURSES – winter term

Subject: Architectonical drawing (Ing. arch. Zuzana Miňová, PhD.)
Code: 25000371
Number of credits: 4
Semester of study: WT
Academic degree: bachelor

Drawing and sketching are for civil engineer a means of expression and communication. Drawing preparation is necessary to acquire the necessary spatial imagination, sense of proportion, skill in graphic and color expression of surface, mass and spatial formations. Civil engineer should be able to express and convey his idea or intention to the relevant team of other co-workers. The drawing should therefore be accurate, factually correct and unambiguous. Such a drawing cannot be identified with the drawing of an artist. It is necessary to understand the differences of artistic and aesthetic expression.

Subject: Fire safety of buildings (assoc. prof. Ing. Martin Lopušniak, PhD.)
Code: 2501611
Number of credits: 5
Semester of study: WT
Academic degree: bachelor

General Requirements and Binding Standards Applicable to Assessment of Fire Safety of Buildings in terms of layout and design. Design principles and requirements for the division of buildings into fire compartments, ensuring the fire resistance of structures, solving and assessing escape routes, spacing distances, access roads and access areas and facilities for effective firefighting intervention. Design and assessment of firefighting equipment.

Subject: Building services I (prof. Ing. Zuzana Vranayová, CSc., Ing. Gabriel Markovič, PhD.)
Code: 2507401
Number of credits: 5
Semester of study: WT
Academic degree: bachelor

Students have to obtain cross-sectional knowledge on the issue of building equipment and specialized knowledge for the design profession sanitary technology to different types of buildings. The aim is that after graduation understand the principles of water supply systems, sewage systems and pipelines in buildings and outside, know what their function diagrams, sizing handle basic parts and drawn in the project documentation.

Subject: Energetic simulation and modelling (Ing. Martin Kováč, PhD.)
Code: 25000533
Number of credits: 4
Semester of study: WT
Academic degree: master

Students will gain information about computational simulation of energy flows in building. On the base of energy simulation they will can to analyse impact of building constructions and equipments on energy performance of building. The part of energy performance of buildings is the evaluation of indoor air quality. Students will gain deeper and more detailed picture about interactions between building construction and building equipment. The students can use gained knowledge by designing building projects and elaboration of diploma thesis. Students will learn to use energy simulation software in the

area of energy analysis of buildings. You can analyze energy consumption for heating, cooling or mechanical ventilation system. This dynamical energy simulation uses all needed data of external environment like a air temperature, relative humidity of air, solar gains, speed and direction of wind and also other parameters. User of this simulation program creates the 3D model of building at the beginning. In the next steps the user must define all boundary conditions for all building constructions (walls, roof, windows, etc.) and also for internal environment (occupancy, internal heat gains, etc.). Than the user set up the operation conditions for HVAC systems.

Institute of Architectural Engineering – COURSES – summer term

Subject: Typology I (Ing. arch. Zuzana Miňová, PhD.)
Code: 2504071
Number of credits: 6
Semester of study: ST
Academic degree: bachelor

To get acquainted with functional-operational relations and connections within the apartment and to acquire typological principles for designing buildings housing. Further acquire basic skills in the application of typological principles in order to prepare for independent design in architectural design I.

Subject: Building services II (doc. Ing. Danica Košičanová, PhD., Ing. Martin Kováč, PhD.)
Code: 2507411
Number of credits: 4
Semester of study: ST
Academic degree: bachelor

Students have to obtain cross-sectional evidence on the issue of human thermal comfort in indoor hot water, hot air and radiant heating. The content of the lectures and exercises is to address sources of heat, heat transfer materials distribution, how to spread heat from radiators and the interior surfaces, the use of renewable heat for heating buildings and hot water. The aim is to handle a project of central heating in a small building.

Subject: Building services computer design (Ing. Ján Domanický, Ing. Michal Gorás)
Code: 2506493
Number of credits: 3
Semester of study: ST
Academic degree: bachelor

To enable students make a building services and HVAC complex design with available computer software. This course is designed to familiarize you with the basic programs on PC for HVAC professionals and their use in solving examples of design practice. Teach freely available software business and school software versions that allow heat loss calculation, calculation of hydraulic-pipe system design underfloor heating, wall heating, the calculation of the expansion tank and the like.

Institute of Architectural Engineering – RESEARCH

Double skin façade research

Double skin facades are architectural and structural building elements, which fundamentally affect the state of the indoor environment in buildings. If properly designed, they contribute to the reduction of the need for HVAC systems. The correct design results in low energy needs and a healthy indoor environment. The focus of a research is to measurements of the intermediate cavity temperatures in an experimental double skin facade in Central European climate (ASHREA Cold Humid). It is an open-circuit facade with natural ventilation. The facade is oriented to the south and it is 4 floors high. In this façade, it is possible to change the height and width of the intermediate cavity, to change the positions of its air inlets and outlets and to change the position of the venetian blinds placed in the intermediate cavity.

