

## Building Design

Code: MK3MAG4S6SS17-EN

ECTS Credit Points: 6 credits

Evaluation: mid-semester grade

Year, Semester: 3<sup>rd</sup> year, 6<sup>th</sup> semester

Its prerequisite(s): Building Construction

Further courses are built on it: Yes

Number of teaching hours/week (lecture + practice): 2+4

### Topics:

This course presents the functional rules of residential building design such as dimensions of rooms, fixtures and furniture with their space limitations. Descriptions from OTÉK, requirements from local development plans, specifications and calculation about forming facade. Significance of orientation. House featuring schema – detached, semi-detached, row houses, atriums. One and multi-storey residential buildings. Arrangements, ground plan systems and functional rules for design of staircases. Shaping the mass, adaptations to the environment. Space requirements for parking, garbage storage, common areas and elevators in multi-unit residential buildings.

This course presents the design methodology of industrial and agricultural buildings. Functional rules of industrial and agricultural buildings by OTÉK, limitations about peripheral built-in areas, local development plans, main elements, structures. Specific technology requirements described by animal species. Health and environmental rules. Manure management. Structures and types of storage buildings and plant productions. Industrial parks and their regulations, standards. Logistics and service facility needs. Structures of industrial buildings, particularly in light weight structures. Design of social and service spaces, lockers and wet rooms.

Fire protections: Basic rules, structures and classification of buildings based on OTSZ.

### Literature:

*Compulsory:*

- Malcolm Millais: Building structures
- Philip Garrison: Basic Structures for Engineers and Architects
- Ernst Neufert : Architects' data
- Jürgen Adam, Katharina Hausmann, Frank Jüttern: Industrial Buildings

### Schedule

#### 1<sup>st</sup> week Registration week

#### 2<sup>nd</sup> week:

**Lecture:** Introduction, installation, site concept, content description of the master plan

Development of housing premises, their link to each other, function diagram

**Practice:** First homework - 25 pieces of furniture, fixtures copying in scale 1:50 M

#### 4<sup>th</sup> week:

**Lecture:** Description of floor plan in residential buildings – function diagrams-detached, the boundary, semi-detached

#### 3<sup>rd</sup> week:

**Lecture:** Description of housing types, freestanding, semi-detached -terraced house, house chain, atrium - in terms of integration

Description of floor plan in residential buildings – function diagrams-detached, the boundary, semi-detached

**Practice:** Consultation.

#### 5<sup>th</sup> week:

**Lecture:** Multi-unit residential building types, corridor-related systems

Ground floor plans, function diagrams

Corridor-related systems, ground floor plans.

Two-storey houses plan system, positioning stage, front height - Interpretation of building height.

**Practice:** Consultation.

**6<sup>th</sup> week:**

**Lecture:** Multi-residential building design, and its problems, parking spaces, common areas, elevator. Multi-residential building ground floor plan focus on the structure design.

**Practice:** Second homework: 5 various built-storied house plan

**8<sup>th</sup> week: 1<sup>st</sup> drawing week**

**9<sup>th</sup> week:**

**Lecture:** Preparation, application for the courses, description of subject requirements, course schedule and literature lists, registration week

History of Hungarian agricultural architecture, government regulations, the provisions of relevant OTÉK

Opportunities for farm-site construction

**Practice:** Consultation.

**11<sup>th</sup> week:**

**Lecture:** Cattle, pig farming buildings

Storage Buildings in agriculture

Wine processing, wineries, Farm Buildings

**Practice:** Research- description of 3 processed agricultural structure- scheme, definition of static model and enveloping options

**13<sup>th</sup> week:**

**Lecture:** History of reinforced concrete, reinforced concrete long-span structures, the benefits of prefabrication

Steel structures, hall structures

Industrial coatings, classical and light enveloping, wall and roof structures

Details of structures, industrial gates.

**Practice:** Consultation.

**15<sup>th</sup> week: 2<sup>nd</sup> drawing week**

**Practice:** Consultation.

**7<sup>th</sup> week:**

**Lecture: Mid-term test**

**Practice:** Consultation.

**10<sup>th</sup> week:**

**Lecture:** Presentation of livestock farms and prescriptions, animal health considerations and manure management

Horse farming, stables, farming buildings, sheep farming

**Practice:** Consultation.

**12<sup>th</sup> week:**

**Lecture:** Fire protection, basic concepts, classification of buildings, structures hall, fire distances, fire load

Industrial parks and its benefits

Dressing room classification

**Practice:** Design of dressing rooms

**14<sup>th</sup> week:**

**End-term test**

## Requirements

### A, for a signature:

Attendance at lectures is recommended, but not compulsory.

Participation at practice is compulsory. Students must attend the practices and may not miss more than three times during the semester. In case a student does so, the subject will not be signed and the student must repeat the course. Students can't make up a practice with another group. Attendance at practice will be recorded by the practice leader. Being late is counted as an absence. In case of further absences, a medical certificate needs to be presented. Missed practices should be made up for at a later date, to be discussed with the tutor. Students are required to bring the drawing tasks and drawing instruments for the course with them to each practice. Active participation is evaluated by the teacher in every class. If a student's behaviour or conduct doesn't meet the

requirements of active participation, the teacher may evaluate his/her participation as an absence due to the lack of active participation in class.

Students have to submit all the 3 drawing tasks as scheduled minimum at a sufficient level.

During the semester there are two tests: the mid-term test is in the 7th week and the end-term test in the 14th week. Students have to sit for the tests.

**B, for a grade:**

The course ends in mid-semester grade. Based on the average of the marks of the drawings and the average of the test results, the mid-semester grade is calculated as an average of them:

- average grade of the 3 drawing tasks
- average grade of the two tests

The minimum requirement for the mid-term and end-term tests is 60%.

Based on the score of the tests separately, the grade for the tests is given according to the following table:

Score	Grade
0-59	fail (1)
60-69	pass (2)
70-79	satisfactory (3)
80-89	good (4)
90-100	excellent (5)

If the score of any test is below 60, the student once can take a retake test covering the whole semester material.