TOPIC SCHEDULE

General topics on the subject of building constructions / Structural components of buildings

Introduction – **Zsuzsanna Fülöp Dr.**, lecturer, architect, TUB faculty member
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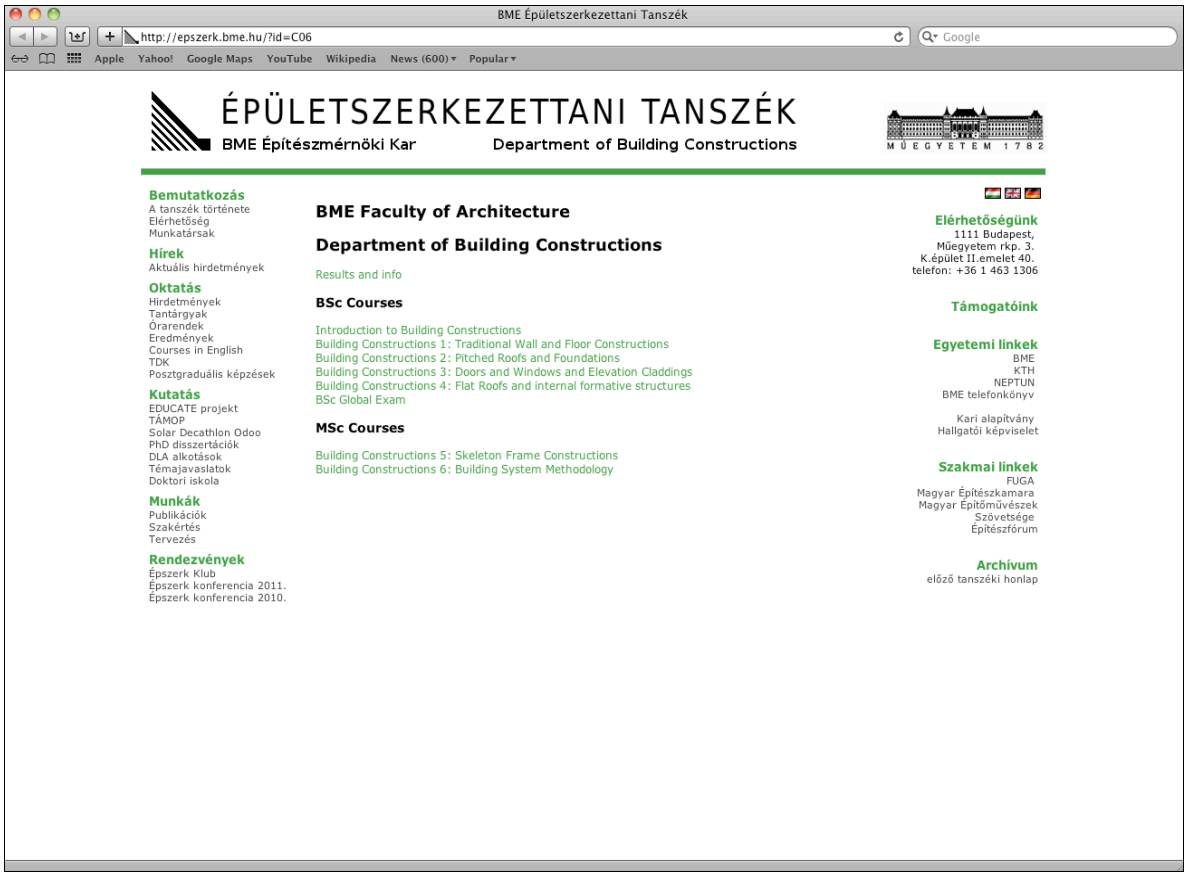
All mandatory course materials and references are uploaded onto the website of the department at:

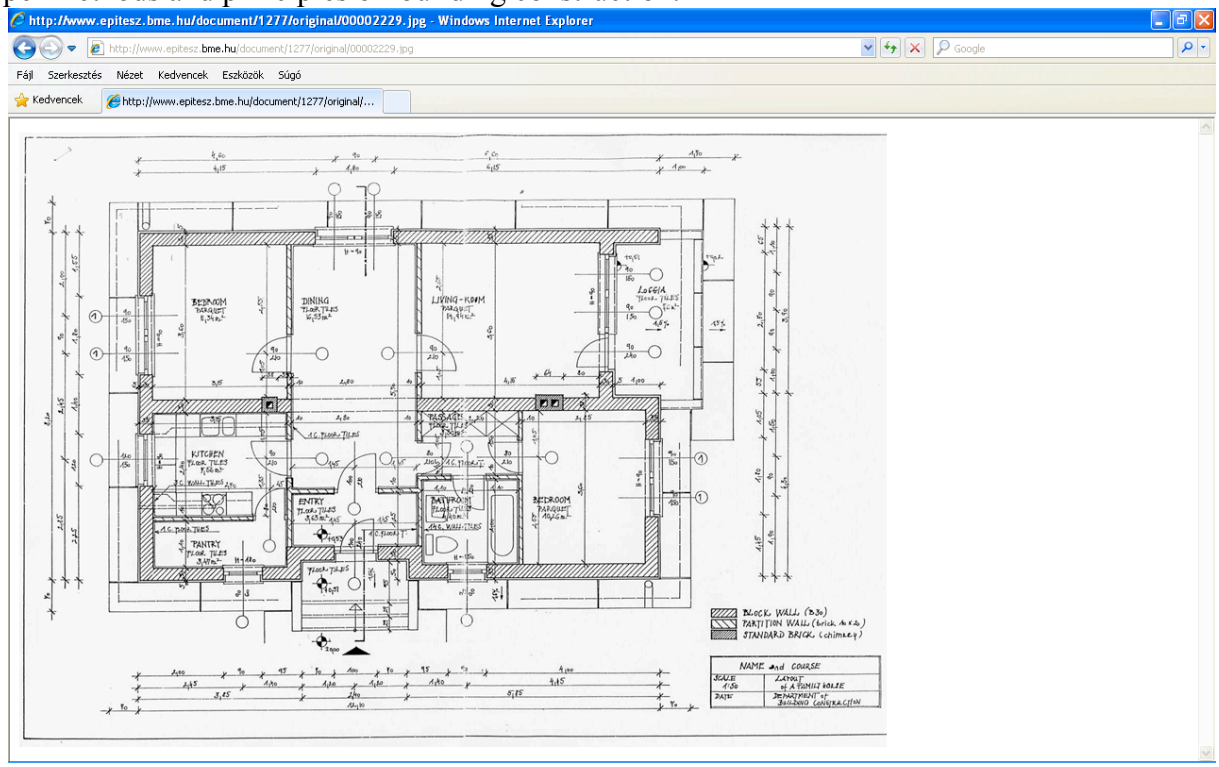
www.epszerk.bme.hu /// Courses in English



A) Administrative issues:

1. Course Introduction

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.



2. Course Objectives

To develop 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.

3. Requirements

Attendance on lectures and practicals, this solution emphasizes practice and theory interaction. A pass mark on class control questions, the midterm test(s) and successful completion of a semester project. The final mark will be a combination of the marks above, but failure on a partial mark will result in failing the course.

B) Today's Lecture:

General topics on buildings and building components

The purpose of buildings (shelter, protection, privacy etc.) and the answer given by various cultures to this challenge. Basic architectural principles of simplicity, purpose-driven design, use of locally available materials and economy. Students may have encountered other solutions to the problems in their home countries. This course - and building construction subjects at the TUB in general – will elaborate on solutions founded in European cultures. The typical European house – valid through all western cultures.

A) Basic groups of building components based on various characteristics:

1. on load bearing quality (load bearing or not)
2. on material used (ceramics, wood, metals, plastics, glass, concrete, stone, minerals)
3. on the type of construction method (on-site, prefabricated, combination)
4. on the type of layer solution (single layer or multi-layer)

B) Basic load bearing components of the European House:

1. Structural (load bearing)

- foundations
- slabs
- walls
- stairs and ramps
- roof structures (low and high pitch)
- pillars
- transoms and lintels

1. Non structural (all other)

- partitions
- doors and windows
- building machinery components
- electrical components
- HVAC components
- water and sewage components
- water insulation layers
- heat insulation layers
- noise insulation layers…

C) Control questions:

Questions given by lecturer on the basis of this course material at the beginning of next class!
Bring: 1 blank A4 sheet, permanent pen, ruler

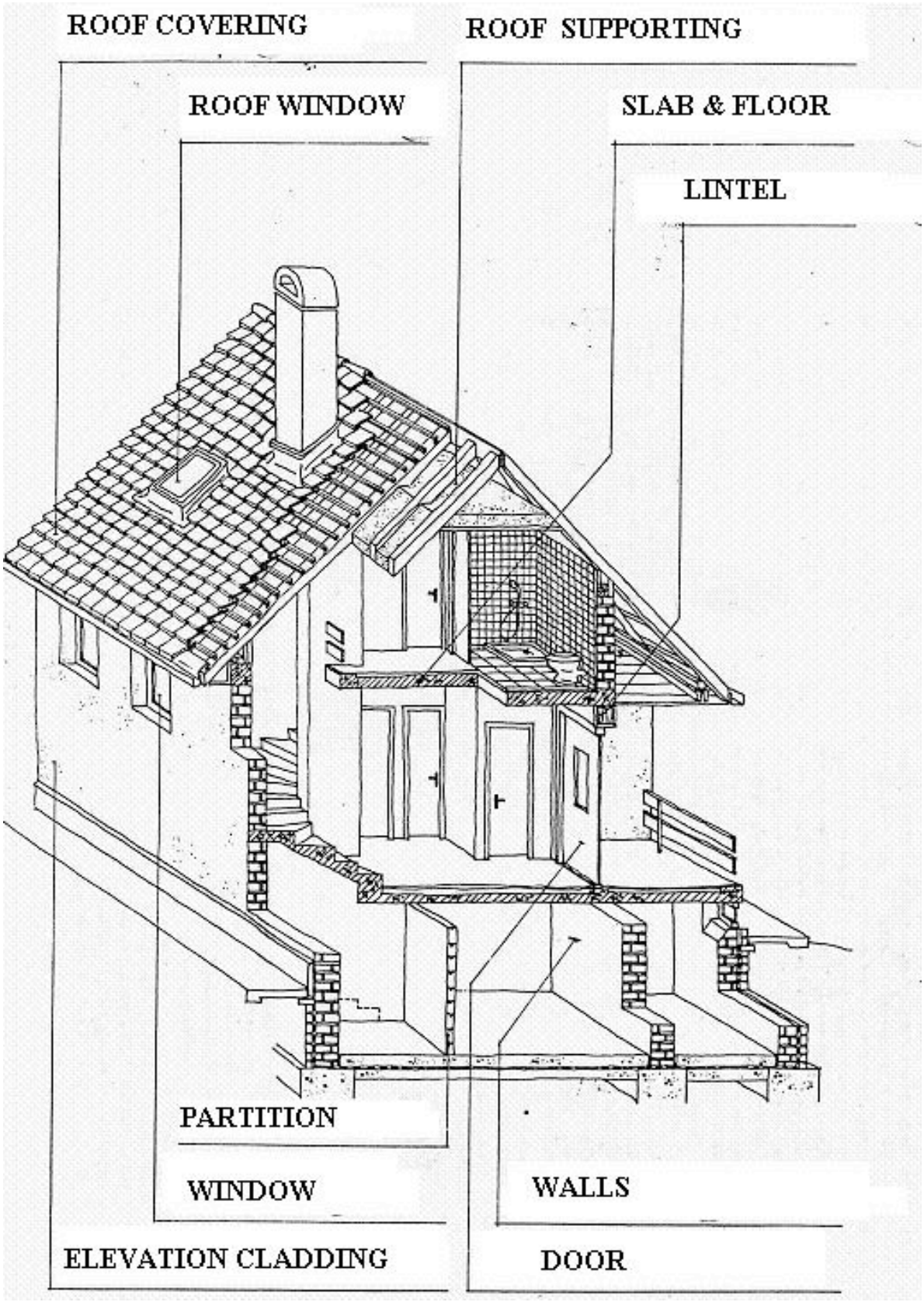
REFERENCE MATERIALS:

1. About the course

- what is it about

Construction is the medium through which architecture is made.
Architecture= insightful design + mastery of the medium of construction.
Building construction classes are the academic foundation of construction methods.
An academic foundation in construction methods is important for several reasons:
- It does not matter how well-intended is an architect's design if it will not be achieved due to the lack of proper knowledge on building construction theory.
- Construction technology is becoming increasingly sophisticated, resulting in a greater challenge for designers to keep track with. Being proficient with principles and methods of construction is a must.
- For a designer, a grasp of construction methods can also be a catalyst for generating new design possibilities. Therefore a greater range of design solutions can be used.

Course objectives:
- to develop a basic conceptual framework and vocabulary for dealing with building construction details
- to examine various construction systems
- to outline processes for comparing and selecting appropriate construction systems for a given application
- to show the relationship between various subsystems of a building, and to examine their influence on design
- to develop abilities to be able to present ideas on details in a clear way
- to develop abilities to discriminate good and bad practices


ROOF COVERING
ROOF SUPPORTING
ROOF WINDOW
SLAB & FLOOR
LINTEL
PARTITION
WINDOW
WALLS
ELEVATION CLADDING
DOOR