

## General Information:

**Name of Course:**

# BUILDING CONSTRUCTIONS 1

**Course Code:**

PMRESNE037A

**Semester:**

2<sup>th</sup>

**Number of Credits:**

7

**Allotment of Hours per Week:**

3 Lectures and 4 Practical Lessons /Week

**Evaluation:**

Signature and Exam

**Prerequisites:**

Basics of Architecture (module C)

**Instructors:**

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## Introduction, Learning Outcomes:

This subject intends to teach the following topics: requirements of building constructions; history of wall structures; walls built from solid bricks and stone, general rules of brick bounds; modern masonry materials, ceramic blocks, partition walls; lintels and openings of load-bearing wall structures; brick and stone arches, reinforced concrete joists; requirements and planning aspects of stairs, interior stairs, structural solutions for curved stairs, interior stairs made of reinforced concrete, metal and wood, stair structures of residential and public buildings, structural design of monolithic reinforced concrete stairs, stair structures made of stone and cast stone, pre-fabricated stair structures. In addition students will be introduced to the regulations and requirements of wooden ceiling structures, ceiling structures with steel beams, pre-fabricated reinforced concrete ceiling structures, structural design of ring beams, monolithic reinforced concrete ceilings, structural breakthroughs in ceiling structures, curved ceiling structures, the historical development, types and structural design of vaults. This course provides a sound basis for students to improve their construction and structural design skills, through both the theory based lectures and through the practical element of the course, where students are introduced to the construction process of a residential building. This subject includes architectural design projects in the practical part (marked with a P) where students can practice and further develop the content of the lectures (marked with an L).

The course will focus on:

- Individual design processing, and developing upon relevant methodologies and design techniques
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- Carrying out within a specified time

## General Course Description and Main Content:

The Building Constructions 2 course includes:

- Regular (weekly) supervisions by an appointed Main Supervisor.
- Drawing Tasks (selected number A/2 pages) prepared with architectural drawings and documentation
  - o Permission drawings of the 2 storey detached house (plans, sections, elevations 1:100)
  - o Staircase execution drawing plan (plans, sections 1:150, details 1:5)
  - o Slab plan (plan, sections 1:150, details 1:10)
- Mid-semester drawing tests
  - o Brick bound design
  - o Staircase calculation
  - o Slab plan design

## Methodology:

The course is based on individual architectural skills with regular consultations and presentations.

**Schedule:**

The semester is divided into two principle periods and attendant exercises.

The rough outline of the schedule is as follows:

|     | Lecture   | Lab  |
|-----|---|--|
| 1.  | Conventional wall structures, brick bounds<br>Foundations | <b>First drawing task:</b> permission drawing 1:100                      |
| 2.  | Wall structures, stone and clay block walls               | Consultation.  |
| 3.  | Concrete block walls, aerated concrete, sandlime walls    | <b>Mid-semester drawing test:</b> Brick Bounds<br>Consultation           |
| 4.  | Arched lintels  | Consultation   |
| 5.  | Openings, windows and lintels                             | Consultation   |
| 6.  | Staircase   | <b>Second drawing task:</b> Staircase<br>Consultation                    |
| 7.  | Staircase design  | <b>Mid-semester drawing test:</b> Staircase calculation                  |
| 8.  | Design of the curved staircase                            | Consultation   |
| 9.  | Arched slab structures                                    | Consultation   |
| 10. | Flat slab structures                                      | <b>Third drawing task:</b> Slab plan<br>Consultation                     |
| 11. | Holiday   | Holiday  |
| 12. | Precast slabs   | Consultation   |
| 13. | Chimneys and vents  | Consultation   |
| 14. | Deep Foundations  | <b>Mid-semester drawing test:</b> Slab plan<br><b>Final Consultation</b> |
| 15. | Final Lecture. Conclusion                                 | <b>Drawing submission</b>  |

### **Studio Culture:**

The course is based on through collaboration, participation and discussions through lessons. This is an interaction between Students and Faculty; used the teaching methods like 'Problem-based learning' and 'learning-by-doing'. The communication and work should reflect a respect for fellow students and their desire to work with regard to noise levels, noxious fumes, etc – from each site of participants.

### **Attendance:**

Attending is required all classes, and will impact the grade (max. 10%). Unexcused absences will adversely affect the grade, and in case of absence from more than 30% of the total number of lessons will be grounds for failing the class. To be in class at the beginning time and stay until the scheduled end of the lesson is required, tardiness of more than 20 minutes will be counted as an absence. In the case of an illness or family emergency, the student must present a valid excuse, such as a doctor's note.

The highest possible grade on the late project (in two weeks) is '2'. The Final Project cannot be turned in late.

### **Evaluation + Grading**

Grading will follow the course structure with the following weight: 1<sup>st</sup>. Drawing Task, 15%, Case Study Presentation, 5%, 2<sup>nd</sup>. Drawing Task, 10%, 1<sup>st</sup>. Mid-semester drawing test, 10%, 2<sup>nd</sup>. Mid-semester drawing test, 10%. The remaining 50% will be assessed according to Exam. Please note that attendance will adversely affect one's grade, both in direct grade reduction and in missing work in the development of a project. The final grade will be based on the following guidelines:

5. Outstanding work. Execution of work is thoroughly complete and demonstrates a superior level of achievement overall with a clear attention to detail in the production of drawings, models and other forms of representation. The student is able to synthesize the course material with new concepts and ideas in a thoughtful manner, and is able to communicate and articulate those ideas in an exemplary fashion.

4. High quality work. Student work demonstrates a high level of craft, consistency, and thoroughness throughout drawing and modelling work. The student demonstrates a level of thoughtfulness in addressing concepts and ideas, and participates in group discussions. Work may demonstrate excellence but less consistently than an '5' student.

3 Satisfactory work. Student work addresses all of the project and assignment objectives with few minor or major problems. Graphics and models are complete and satisfactory, exhibiting minor problems in craft and detail.

2. Less than satisfactory work. Graphic and modelling work is substandard, incomplete in significant ways, and lacks craft and attention to detail.

1. Unsatisfactory work. Work exhibits several major and minor problems with basic conceptual premise, lacking both intention and resolution. Physical representation in drawing and models is severely lacking, and is weak in clarity, craft and completeness.

#### **Grading Scale:**

|                              |          |         |         |           |       |
|------------------------------|----------|---------|---------|-----------|-------|
| <b>Numeric Grade:</b>        | 5        | 4       | 3       | 2         | 1     |
| <b>Evaluation in points:</b> | 89%-100% | 77%-88% | 66%-76% | 55%-64.5% | 0-54% |

### **PTE Grading Policy:**

Information on PTE's grading policy can be found at the following location:  
<https://english.mik.pte.hu/>

**Students with Special Needs:**

Students with a disability and needs to request special accommodations, please, notify the Deans Office. Proper documentation of disability will be required. All attempts to provide an equal learning environment for all will be made.

**Readings and Reference Materials:**

**Required:**

R. Barry: THE CONSTRUCTION OF BUILDINGS Volume 7

Francis D.k. Ching\_ Building Construction Illustrated

**More:**