

### General Information:

Name of Course:

# BUILDING CONSTRUCTIONS 3

Course Code:

EPE099AN

Semester:

3<sup>th</sup>

Number of Credits:

7

Allotment of Hours per Week:

15 Practical Lessons /Week

Evaluation:

Signature and Exam

Prerequisites:

Completed Building Constructions 2

Instructors:

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### Introduction, Learning Outcomes:

The primary intention of this subject is to teach students the following theoretical topics: drawing representation of slab, roof structures, wooden roof structures and joinery, Chevron roof structures, vacant and collar beam roof structures, purlin roof structures, roof structures with one, two and multiple support members, roof structure with slanted support members, purlin roofs with struts, mansard roof structures, hipped roof structures, carpenter joints, suspended roof structures.

Slab structures. Roofing, imbricate roof structures, tough roofing systems, tile roofing, concrete roof tiles, slate roofs, wooden and thatched roofs, boarded roofs, flashing and guttering, breakthroughs in roofing, metal plates, chimneys and gravitational ventilation. The topics listed above serve as a basic theoretical knowledge for students and are complimented by practical sessions where students work through the design of a residential building. This subject includes an architectural design project 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 working drawings documentation (plans, sections, elevations 1:50) and with a sufficient number of detail drawings (1:10, 1:5)
  - o Roof shape drawing 1:200
  - o Slab plan 1:50
  - o Execution drawings of the 3 storey detached house 1:50
  - o Complex roof plan
- Mid-semester drawing tests
  - o Slab plan design
  - o Roof 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.	Determining of roof shapes Slab structures	<b>First drawing task:</b> Execution drawing 1:50 <b>Roof shape drawing</b> 1:200
2.	Slab structures Conventional roof structures Strut less and strutted purlin roofs, couple and collar roofs. Conventional timberwork details	Consultation. Footing design and drawings <b>Second drawing task:</b> slab plan <b>(Roof shape drawing signature)</b> <b>(ground floor signature)</b>
3.	Determination of roof bevels, King-post roof structures	Consultation <b>(cellar floor and roof shape drawing signature)</b>
4.	Mansard roofs, Half pitched roofs, Low sloped roof.	Consultation <b>Mid-semester drawing test:</b> Slab plan design
5.	Hipped roof design rules	Roof structure design and drawings <b>(sections signature)</b>
6.	Complex roof structures, rules of arrangement	<b>Third drawing task:</b> Complex roof structure execution drawing Consultation
7.	Engineering roof structures and timberwork	<b>Mid-semester drawing test:</b> Roof plan design
8.	Roof covers, Ceramic roof tiles	Consultation
9.	Holiday	Holiday
10.	Metal sheet roofing, details	Mid-semester drawing test: Roof plan design  (roof plan signature)
11.	Slate roof covers	<b>Second drawing task submission</b>  Roof cover design and drawings
12.	Thatched roof of rye straw, Wooden Roof Shingles, bitumen roof covers	Consultation (roof section signature)
13.	Roof gutter and drainage system	Consultation
14.	Roof cover breakthroughs. Additional roof cover elements	Consultation
15.	Loft structures	Final Consultation, <b>drawing submission</b>

**Studio Culture:**

The course is based on through collaboration, participation and discussions trough 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 be 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 lesson 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 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 in.

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>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Evaluation in points:</b>	89%-100%	77%-88%	66%-76%	55%-645%	0-54%

#### **PTE Grading Policy:**

Information on PTE's grading policy can be found at the following location:

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#### **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:**

Eberhard Schunk (2003) Roof Construction Manual,

<http://www.amazon.com/Roof-Construction-Manual-English-Edition/dp/3764369868>

##### **More:**