

COURSE DATASHEET

I. COURSE SPECIFICATION

1 BASIC DATA

1.1 Title

BUILDING CONSTRUCTION STUDY

1.2 Code

BMEEOEMAT44

1.3 Type

Module with associated contact hours

1.4 Contact hours

type	hours/week
lecture	1/week
seminar	2/week

1.5 Evaluation

midterm grade

1.6 Credits

3

1.7 Coordinator

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1.8 Department

Department of Construction Materials and Technologies (www.em.bme.hu)

1.9 Website

<http://www.epito.bme.hu/BMEEOEMAT44>

1.10 Language of instruction

Hungarian and English

1.11 Curriculum requirements

Compulsory in the BSc in Civil engineering programme

1.12 Prerequisites

Recommended subjects

Civil Engineering Representation and Drawing (BMEEOEMAT42)

1.13 Effective date

September 1, 2017.

2 OBJECTIVES AND LEARNING OUTCOMES

2.1 Objectives

The course addresses the following topics: Effects on buildings, load-bearing wall and skeleton frame type buildings, traditional load-bearing floors, stairs, foundation methods, waterproofing and thermal insulation of building constructions directly contacted with the soil, flat roofs, traditional pitched roofs and roof claddings, façade renders and claddings and also basic introduction to building mechanics and building physics.

During the semester students will expand their knowledge and develop their skills both through the individual home assignments and through the contact courses where the above listed topics are discussed.

2.2 Learning outcomes

Upon successful completion of this subject, the student:

A. Knowledge

1. has an overview of the impacts on buildings and of the performance characteristics and the expected requirements of building constructions.
2. (based on previous studies) understands the symbols and principles of technical drawings
3. knows the different wall types, their construction method and materials, and the different brick bonding types.
4. understands the construction method of skeleton frame buildings, and the main structural members of these structures.
5. has an in depth overview of load bearing floors, understands the slabs structural behaviour, their build ups and the joints with adjacent building constructions in detail.
6. understands how to eliminate or reduce thermal bridges in different structures, e.g. at ring beams and balconies.
7. is aware of the different types of stairways, and their construction and design.
8. has a complex overview of roof trusses, knows the parts of pitched roofs, their drainage and the traditional roof claddings.
9. knows the difference between cold and warm flat roofs, and also the most commonly used build-ups.
10. understands the principles of shallow and deep foundations
11. is aware of the tasks of fenestration, and the fenestration related general requirements.

B. Skills

1. uses the principles and symbols of technical drawings.
2. prepares the required drawings, details in the given scale using correct symbols and principles professionally
3. confidently reads (understands) technical drawings.
4. efficiently uses gathered information for the home assignments (lecture notes, datasheets, internet)
5. can evaluate incorrect design solutions (related to topics of the course), and can provide correct details.
6. uses the technical terms correctly, and can straightforwardly present any topic of the course in word or writing.
7. is able to thoroughly apply and adjust the theoretical knowledge in the drawing tasks.
8. can use the main regulations of energy-conscious and environmental friendly construction methods in the evaluation of building and building constructions.

C. Attitudes

1. cooperates with other course members and professors
2. develops his/her knowledge, drawing and communicating skills, and professional vocabulary
3. aims to construct precise, flawless technical drawings

4. aims to understand the principals of environmental consciousness and of energy efficiency and develops his/her knowledge regarding this topic.

D. Autonomy and responsibility

1. carries out the specified design tasks/home assignments individually
2. is open to well-founded critical remarks
3. in certain situations, e.g. in practical classes, cooperates with her/his fellow students
4. is actively involved in professional discussion
5. presents her/his opinion with justification

2.3 Methods

Lectures, seminars, consultation in oral and in writing, IT equipment and techniques, optional tasks carried out individually or in small groups, work organization techniques.

2.4 Course outline

week: Topics of lectures

1. Impacts on buildings, relation between buildings and building constructions. Relation between performance and requirements of building constructions. Load-bearing wall type structures.
2. Brick bonding
3. load-bearing floor slabs, and ring beams, balconies, thermal brake of balconies
4. load-bearing floor slab details, joints, slab design
5. Types of skeleton frame buildings, modern structural systems and materials
6. Flat roof build ups, drainage, and waterproofing materials
7. Types of pitched roofs, structural characteristics, drainage
8. Principals of foundations, main foundation methods
9. Basics of building mechanics. Building physics (legislations, utilizing solar energy, etc.)
10. Traditional roof claddings
11. Stairs: structural variations
12. Façade renders and claddings, build ups, mounted facades
13. Modern fenestration, classification of fenestration, types and performances
14. Summary of the discussed topics

The above programme is only informative and subject to changes due to calendar variations and other reasons specific to the actual semester. Please find the actual detailed course schedule on the department's website.

2.5 Study materials

a) Online materials

1. E-lecture notes: CAN BE DOWNLOADED FROM THE DEPARTMENT'S WEBSITE
2. Manuals: DATASHEETS, BOOKS RECOMMENDED ON LECTURES

2.6 Other information

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2.7 Consultation

The instructors are available for consultation during their office hours, as advertised on the department website.

Special appointments can be requested via e-mail:

'consultant'@epito.bme.hu

II. COURSE REQUIREMENTS

3 ASSESSEMENT AND EVALUATION OF THE LEARNING OUTCOMES

3.1 General rules

The assessment of the learning outcomes specified above in clause 2.2 considers a control test carried out through the moodle system, a mid-term test, the submitted practical sheets, 1 small home assignment and 2 home assignments, taking into account the active participation on the seminars as well.

3.2 Assessment methods

Evaluation form	abbrev.	assessed learning outcomes
1 mid-term test (summarizing evaluation)	MT	A.1-A.8, B.1-B.3; B.5-B.8; C.3; D.5
1 control test (placement test)	CT	A.1-A.6; B.3; B.6; D.5
1 small home assignment (one-time evaluation)	HA0	A1- A.5. B.1-B.4
2 home assignment (continuous evaluation)	HA1, HA2	A.1-A.11; B.1-B.4; C.1-C.4; D.1-D.2
Seminars – practical sheets (continuous evaluation)	PR	A.1-A.11; B.1-B.8; C.1-C.4; D.3-D.5.
active participation (continuous evaluation)	A	A.1-A.11; C.1-C.4; D.3-D.5

The dates of tests, the handing-out and submission dates of home assignments are detailed in the course schedule on the subject's website.

3.3 Evaluation system

abbreviation	score
MT	40%
CT	10%
HA0	12%
HA1	14%
HA2	14%
PR	7%
A	3%
Sum	100%

3.4 Requirements and validity of signature

Signature cannot be obtained.

3.5 Grading system

HA0, HA1, HA2, PR, A, are rated with a grade between 1 and 5.

The minimum requirement for obtaining a grade is a passed (2) mid-semester test, and at least a passed (2) mean score considering the small home assignment and the two home assignments. The final grade is calculated according to clause 3.3 in accordance with the general rules of rounding.

For those who fulfil the attendance requirements, the MT and CT grades are determined as follows:

grade	points (P)
excellent (5)	$80 \leq P$
good (4)	$70 \leq P < 80\%$
satisfactory (3)	$60 \leq P < 70\%$
passed (2)	$50 \leq P < 60\%$
failed (1)	$P < 50\%$

3.6 Retake and repeat

- 1) A second retake for the mid-semester test (MT) is provided on the delayed submission period with a penalty fee.
- 2) Control test (CT) can be retaken once during the study period.
- 3) The small home assignment (HA0) and the 1st home assignment (HA1) can be submitted without a penalty fee on the seminar the week after the normal deadline. The course cannot be accepted with a submission after the delayed deadline.
- 4) The 2nd home assignment (HA2) and the practical sheets (PR) can be submitted with a penalty fee (amount noted in the policy) on the last day of the delayed submission period until 16:00.
- 5) The active participation – due to its speciality – cannot be resubmitted or exchanged in any ways.

3.7 Estimated workload

activity	hours/semester
participation in lectures	$7 \times 2 = 14$
preparation for the seminars	$14 \times 0,5 = 7$
participation in seminars	$14 \times 2 = 28$
preparation for the evaluation	12
preparation of the home assignments	19
learning the designated lecture notes	10
in total	90

3.8 Effective date

September 1, 2017.