Building Construction Methodology - BMEEOEMA-A1

I. Subject Specification

1. Basic Data

1.1 Title

Building Construction Methodology

1.2 Code

BMEEOEMA-A1

1.3 Type

Module with associated contact hours

1.4 Contact hours

Type	Hours/week / (days)
Lecture	1
Seminar	1

1.5 Evaluation

Exam

1.6 Credits

2

1.7 Coordinator

name	Dr. Halász György
academic rank	Assistant professor
email	halasz.gyorgy@emk.bme.hu

1.8 Department

Department of Construction Materials and Technologies

1.9 Website

https://epito.bme.hu/BMEEOEMA-A1
https://fiek2.mywire.org/course/view.php?id=1379

1.10 Language of instruction

hungarian and english

1.11 Curriculum requirements

Compulsory in the Specialization in Structural Engineering (BSc) programme

1.12 Prerequisites

Weak prerequisites:

- Building Construction II. (BMEEOEMAS43)

1.13 Effective date

2 February 2022

2. Objectives and learning outcomes

2.1 Objectives

During the semester, students acquire knowledge and skills in the following topics: Methodology of designing large-span constructions. Design phases, decision-making aspects. Main functional elements. Characteristic structures of large-span buildings: load-bearing structures (reinforced concrete, steel and composite structural frames). Building envelope structures, walls, roofs (reinforced concrete, metal and composite materials). Lighting structures (skylights, glass roofs), doors and windows. Mounted structures (floors and internal walls). Fire protection rules.

2.2 Learning outcomes

Upon successful completion of this subject, the student:

A. Knowledge

1. Has an overview of the capacity and the expected requirements of large-span, special-function building constructions,
2. (Based on his previous studies) knows the drawing symbol system used in the plans,
3. Understands the process of constructing frame-type buildings and knows their main structural elements,
4. Provides an overview of reinforced concrete and steel structural systems, their static function, and their detail design principles,
5. Knows the commonly used layers orders,
6. Is aware of the purpose of doors and windows of special buildings and the general requirements

B. Skills

1. Uses the drawing symbol system during communication in drawing,
2. Professionally, with the correct use of the signal system, prepares the required plan document, details drawings,
3. Effectively applies methods of learning in home assignments (notes, seminar lessons, product catalogues, internet),
4. Introduces, with the correct use of terms, orally and in writing any part of the course topic,
5. Is able to apply in drawing the critical and thoughtful application of theoretical knowledge
6. Applies knowledge of energy efficiency and environmental awareness in the evaluation of buildings and structures
7. Interprets the flat and pitched roof type buildings, their drainage and their typical roof claddings

C. Attitudes

1. cooperates with the lecturer and student companions during learning procedure,
2. Expands his / her skills and knowledge of drawing and professional communication skills through continuous learning,

3. Pursues to make precise sketches and make correct drawings,
4. Seeks to understand the principle of energy efficiency and environmental awareness and to expand its knowledge of this subject

D. Autonomy and Responsibility

1. Performs individual production of homework / background work drawings
2. Accepts the lecturer's comments on his work, integrates them in his / her further assignments,
3. In certain situations, e.g. during practice lessons - monitors the work of other students, which helps in solving his / her own tasks.

2.3 Methods

Lectures, seminar works, communication in oral and in writing. IT technology and tools optionally self-made tasks, work organization techniques.

2.4 Course outline

Week	**Topics of lectures and/or exercise classes**
1.	Introduction. Built examples representing building construction concepts
2.	Structures of buildings, pillars, main beams, rafters, constructional design rules, foundation, steel, RC. structures
3.	Preparation of the structural system
4.	Preparation of the structural system
5.	Preparation of the structural system
6.	Structures in practice, introducing special engineering tasks
7.	Preparation of the structural system
8.	Special material and structure: glass
9.	Special material and structure: glass
10.	Fire regulations in building construction design
11.	Preparation of the structural system
12.	Summary, analysation
13.	Energy considerations in building construction design
14.	Preparation of the structural system

The above programme is tentative and subject to changes due to calendar variations and other reasons specific to the actual semester. Consult the effective detailed course schedule of the course on the subject website.

2.5 Study materials

a) Notes / books:

1. Stephen Emmitt, Christopher A. Gorse: Barry's introduction to construction of buildings, 2010
2. Barry's Advanced Construction of Buildings, 2006
3. Roy Chudley, Roger Greeno: Construction Technology, 1999
4. Roy Chudley, Roger Greeno: Building Construction Handbook, 2016

5. Király Sándor: Szerkezettervezés, Tankönyvkiadó, Budapest, 1992
6. Bruzsa László: Épületszerkezetek II. (Ábraanyag 1. füzet), Műegyetemi Kiadó, 1995
7. Bruzsa László - Dr. Tóth Elek: Tetőszerkezetek A-tól Z-ig (Verlag Dashöfer Kiadó, 2000)

b) Online materials:

1. Lecture material
2. Catalogue material listed during lectures - available online

2.6 Other information

None.

2.7 Consultation

Consultation dates: according to the department's website, or in advance, by e-mail: ‘consultant’@emk.bme.hu

This Subject Datasheet is valid for:

2023/2024 semester I

II. Subject requirements

Assessment and evaluation of the learning outcomes

3.1 General rules

The assessment of the learning outcomes set out in point 2.2 is based on a mid-semester test, a three-part home assignment and an exam.

3.2 Assessment methods

Evaluation form	Abbreviation	Assessed learning outcomes
Mid-semester test	MT	A.1-A.6; B.1-B.7
1 st home assignment	HA1	A.1-A.4; B.1-B.7
2 nd, 3rd home assignment	HA2-HA3	A.1-A.6; B.1-B.7; C.1-C.4; D.1-D.3
Exam	E	A.1-A.6; C.1-C.4

The dates of deadlines of assignments/homework can be found in the detailed course schedule on the subject's website.

3.3 Evaluation system

Abbreviation	Score
MT	20%
HA1	10%
HA2	10%
HA3	10%
Semester period	**50%**
E	**50%**
Sum	**100%**

3.4 Requirements and validity of signature

Signature requirements: minimum satisfactory MT result, and minimum satisfactory result of the average of homework assignments.

3.5 Grading system

HA1, HA2, HA3 is rated up to 1-5.
Minimum criteria of the final grade: minimum passed MT and minimum pass of each of the home assignments.
The final grade is based on the weighting of the ratings obtained for each evaluation, in accordance with the general rules of the recapitalization.
Consultation and signing of the home assignments and intermediate submission are obligatory.
The home assignments have to be delivered as a complete documentation: concatenated and completed with cover sheet, content and bibliography.
The MT grade of the students who meet attendance criteria is determined according to the following criteria:

Grade	Points (P)
excellent (5)	91%<=P
good (4)	78%<=P<91%
satisfactory (3)	65%<=P<78%
passed (2)	49%<=P<65%

failed (1)	P<49%

3.6 Retake and repeat

1. 2 nd retake of mid-semester test (MT 2): we provide a possibility in the replacement period. Additional fee is required.
2. Late submission of homework assignment HA1, is possible in one week time after HA1 submission deadline. Additional fee is required. Later submission does not allow completion of the subject!
3. Late submission of homework assignment HA2, HA3, is possible by 12:00 on the last day of supplementary week. Additional fee is required in case of late submission.
4. Active participation - by its nature - can not be replaced.

3.7 Estimated workload

Activity	**Hours/semester**
Presence at lectures	14×1=14
Preparation for seminar works	7×1=7
Seminar works	14×1=14
Preparation for tests	10
Preparation of home assignments	10
Preparation of study curriculum	5
Sum	**60**

3.8 Effective date

2 February 2022

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2023/2024 semester I