

BME Faculty of Architecture, Department of Mechanics, Materials and Structures			
Subject: DESIGN OF LOADBEARING STRUCTURES	DATE	SEMESTER	YEAR
Code: BMEEPSTA501, Credits: 6	2023/ 24	1.	3rd
Lecturer: Dr Dezső Hegyi	Practicals: Andres Guerra, Rita Vajk		

TOPICS SCHEDULE

Sem. week Calend. week	Date	LECTURES Monday 12:15-14:00 K351 Wednesday 10:15-12:00 K351	Date	PRACTICALS Friday 8:15-10:00 K352
1.	09.04	Introduction. Design principles, Standard loads 1	09.08	<i>Design of steel beams subjected to bending and shear</i>
37.	09.06	<i>Design of steel beams</i>		Distribution of homework 1
2.	09.11	Design principles, Standard loads 2	09.15	<i>Design of steel columns</i>
38.	09.13	<i>Design of steel columns, steel structures: trusses, column-beam systems, frames, space trusses</i>		
3.	09.18	Computer aided structural design: rod structures,	09.22	<i>Design of timber beams subjected to bending and shear</i>
39.	09.20	<i>Design of timber beams subjected to bending and shear</i>		
4.	09.25	Horizontal and vertical load distribution among bracing elements, skeletal structures, halls	09.29	<i>Design of compressed timber columns</i>
40.	09.27	<i>Design of compressed timber columns, timber structures: trusses, column-beam systems, frames, roof structures</i>		
5.	10.02	Special questions: arches, sandwich structures	10.06	Test 1: Design of steel and timber members subjected to bending, shear and compression
41.	10.04	<i>Reinforced concrete: material properties, beam design for bending</i>		
6.	10.9	Computer aided structural design: slabs;	10.13	<i>Flexural design of reinforced concrete beams</i>
42.	10.11	<i>Design of RC beams for shear, RC technologies: in-situ, prefabricated, prestressed</i>		Deadline of homework 1 Distribution of homework 2
7.	10.16	Sketch week	10.20	Sketch week
43.	10.18			
8.	10.23	National Holiday	11.27	<i>Shear design of reinforced concrete beams, design of RC columns</i>
44.	10.25	<i>Design of reinforced concrete columns</i>		Excess deadline of homework 1
9.	10.30	All Saints Day	11.03	<i>Finite element method</i>
45.	11.01	Plates, wall-beams, slabs		
10.	11.06	<i>Design of eccentrically compressed masonry walls</i>	11.10	<i>Design of eccentrically compressed masonry walls</i>
46.	11.08	<i>Walls subjected to bending and shear</i>		
11.	11.13	Earthquake effect	11.17	<i>Walls subjected to bending and shear</i>
47.	11.15	<i>Design of masonry structures: confined wall, reinforced walls</i>		Deadline of homework 2
12.	11.20	Bracing of buildings	11.24	Open day
48.	11.22	Structural design against fire loading		
13.	11.27	Foundations, retaining walls	12.01	Test 2: Design of reinforced concrete members subjected to bending, shear and compression, design of eccentrically compressed masonry wall
49.	11.29	<i>Design of steel and timber joints</i>		Excess deadline of homework 2
14.		Processing week	12.10	Processing week
15.		Replacement week	12.14	Retake tests

BME Faculty of Architecture, Department of Mechanics, Materials and Structures			
Subject: DESIGN OF LOADBearing STRUCTURES	DATE	SEMESTER	YEAR
Code: BMEEPSTA501, Credits: 6	2023/24	1.	3rd
Lecturer: Dr Dezső Hegy	Practicals: Andres Guerra, Rita Vajk		

REQUIREMENTS

Conditions of inscription:	1. Fulfillment of the prerequisites: successful Global exam in Strength of materials 2. Registration for the subject in NEPTUN System until 31/09/2023.
Character of the lessons:	L: Lectures P: Practical lessons: Presentation of short numerical examples to illustrate the usage of theory + solution of exercises individually and in teams. The materials of the practical have to be processed at home. Presence on practical lessons and lectures is obligatory and checked. B: blackboard exercise: solution of problems during the lectures TEST: individual work (only the design aids distributed by the Department can be used) HW: homework
Midsemester controls (dates as given in topics schedule):	Two 90 Minutes tests (TEST), max. 120 points each, 0 point in case of absence. Both tests can be rewritten once only at the end of the semester during the replacement week. The retake points overwrite the original test points. Two homework (HW): The submission of both Homework at an acceptable quality is obligatory requirement of the signature In case of late submission until the excess date maximum 80% of the total points can be given. The deadline for late submission with excess fee is 04.12.2023 12 ⁰⁰ . The consultation with the teacher is highly recommended before the submission of the Homework.
Condition of signature	1. Presence on at least 70% of practical lessons (max 3 absences are possible) 2. Acceptance of both Homeworks 3. Both tests should be at least 50% (60 points) 4. During the semester bonus points can be collected (max. 50 points), which are added to Homework points. 5. Maximum 240 points (plus bonus points) can be achieved during the semester, as given below: 1,4xTEST average (of the two tests) (168) + Homework points (72) + bonus points To obtain the signature, and to be allowed for the exam minimum 120 points without bonus points has to be achieved.
Conditions of admission to the exam:	- Subscription from the semester or from the previous 3 years. - Registration for the exam in the NEPTUN before the given deadline - Proof of identity by a photo ID before the exam. <u>Not attending on a registered exam will be fined. Starting an exam will result in an exam mark.</u>
Exam dates	Will be given in Neptun System
Character of the exam:	The examination consists of a 90-minute-long written part, where you can get maximum 120 points, and afterwards an oral examination for maximum 120 points. During the written exam design aids indicated by the department can be used. During the oral exam no aids are allowed.
Final mark:	The exam points are summarized with the semester points: Total points (480+) = Semester points (min 120 – max 240) + Exam points (max 240) + Bonus points Conditions of passing the exam: -min. 60 points for the written exam (out of 120) -min. 60 points for the oral exam (out of 120) -min. 240 points from Semester points + Exam points Final mark: 0-239 points: fail (1) 240-289 points: pass (2) 290-339 points: satisfactory (3) 340-389 points: good (4) 390-480 points: excellent (5)
Repeating the exam:	Unsuccessful exam can be repeated during the examination period, observing other conditions of admission to the exam. Improving the final mark is possible according to the Code of Studies
Contact	vajk.rita@epk.bme.hu guerra.andres@edu.bme.hu
Study aids, homework, information	edu.epitesz.bme.hu – Design of Loadbearing Structures – Moodle Team: d9u1ms6