

Budapest University of Technology and Economics FACULTY OF ARCHITECTURE DEPARTMENT OF MECHANICS, MATERIALS AND STRUCTURES				
Subject: DESIGN OF REINFORCED CONCRETE STRUCTURES			Code: BMEEPST0655	
Evaluation form	Credit points	Educational year	Semester	Year
Midsemester mark	2	2019/2020	1st	
Lecturer: Dr. András Draskóczy				

TOPICS SCHEDULE

Week No.	Date	LECTURES Thursdays 13.15-15.00 K363		
1	12. 09.2019	University sports day (no lessons)		
2	19. 09.	1 Introduction. General design and construction problems of reinforced concrete structures. Cross-section design of linear and planar members in ultimate limit state (ULS). Check of the serviceability limit states (SLS). Some historic rc buildings, Requirements at present		
3	26. 09.	2 Reinforcement systems of rc structural members. Content and preparation techniques of execution projects . The art of detailing on the example of projects of P.L.Nervi .		
4	03. 10.	3 Design problems of r.c. foundations, columns and walls . Impermeable space limitations. Information about study topics and content requirements.		
5	10. 10.	4. The Puskás football stadium Budapest and other current projects . Invited lecturer: Zsolt Kovács structural engineer ASA Structural Building Co.Ltd. 1st test (45 Minutes)		
6	17. 10.	5 Fabric formed concrete . Decorative concrete. Invited lecturer: Dr István Sajtos Dept. of Mechanics, Materials and Structures		
6	24. 10.	Preliminary project week (no lessons)		
7	31. 10.	6 Impacts of modern concrete technologies on architectural design of reinforced concrete structures.		
8	07. 11.	7 Construction site visit		
9	14. 11.	8 Design and construction problems of the Palace of Arts of Budapest (MÜPA) . Invited lecturer: Eng. Ferenc Gonda (Dékettő Co. Ltd.)		
10	21. 11.	9 Approximate design of dimensions of rc structures . Rc cantilevers used as architectural motifs. Some design problems of monolithic rc floor structures: variable slab thickness, bubble deck slab, pre-stressed rc slabs with bounded and unbounded tendons. Bracing systems of rc load-bearing structures. Tilted rc structures		
11	28. 11.	10 Joints and accessories.		
12	05. 12.	11 Fire resistance design of rc structures 2nd test (45 Minutes)		
13	12.12.	Design project elaboration week (no lessons)		
14	19.12.	Test repetition of tests 1 and 2		

REQUIREMENTS

Conditions of inscription:	-Inscription through the Neptun system until 13th of Sept.															
Character of the lessons:	Lectures, site visit, tests															
Prescriptions for presence:	According to the Code of Study and Exams, presence on 70% of the lectures is obligatory (3 absences are allowed)															
Midsemester controls	Two tests, valuing 120 points max. each Both tests can be repeated once.															
Scheduled study submission	Study on a reinforced concrete structure constructed during the last decades, valuing 20 to 40 points must be submitted meeting some content and formal requirements (see separated). Final date of submission: 13th of Dec. at 12.00 a.m. Passing this deadline means losing the semester. Requirements prescribed for the educational period can not be recovered during the examination period. Consultation possibilities during weekly reception hours.															
Conditions of fulfilment:	<ol style="list-style-type: none"> 1. Submission and acceptance of the study 2. Min. 60 points of both tests 															
Final points	Mean value of the two tests + result of the study															
Final mark:	<table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">Final mark:</td> <td style="width: 35%;">0-79 points</td> <td style="width: 50%;">fail (1)</td> </tr> <tr> <td></td> <td>80-95 points</td> <td>pass (2)</td> </tr> <tr> <td></td> <td>96-111 points</td> <td>satisfactory (3)</td> </tr> <tr> <td></td> <td>112-127 points</td> <td>good (4)</td> </tr> <tr> <td></td> <td>128-160 points</td> <td>excellent (5)</td> </tr> </table>	Final mark:	0-79 points	fail (1)		80-95 points	pass (2)		96-111 points	satisfactory (3)		112-127 points	good (4)		128-160 points	excellent (5)
Final mark:	0-79 points	fail (1)														
	80-95 points	pass (2)														
	96-111 points	satisfactory (3)														
	112-127 points	good (4)														
	128-160 points	excellent (5)														
Test repetition	Unsuccessful test results can be improved once Improving the final mark is possible according to the Code of Study and Exam.															

Obligatory literature:

Deák – Draskóczy – Dulácska – Kollár – Visnovitz: Reinforced Concrete Design Aids, 2011.

Lecture notes (available at: www.szt.bme.hu/download/english_courses/design_of_reinforced_concrete_structures/2019)

Recommended literature:

P.L. Nervi: Aesthetics and Technology in Building, London, Oxford Univ. Press, 1966

A. Pauser: Beton im Hochbau, Verlag Bau + Technik GmbH, Düsseldorf, 1998