

BME Faculty of Architecture		Department of Mechanics, Materials and Structures			
Subject: <b>FUNDAMENTALS OF STRUCTURES</b>	Code	Credit points	Date:	Semester:	Year:
Teachers: Dr Dániel VETŐ, Siwen CAO	BME EPSTG201	0	22/23	2 <sup>nd</sup>	Gen. Course

## TOPICS SCHEDULE

Educ. week	Date	Tuesdays 12:15-14:00 K363	Date	Thursdays 15:15-17:00 K363
1.	28.02.	Building design requirements, architectural design process – <i>VD</i>	02.03.	Functions, scalars and vectors: kinematics of point masses – <i>CS</i>
2.	07.03.	The central building (building 'K') of BME – <i>VD</i>	09.03.	Visit of the central building (building 'K') of BME – <i>CS, VD</i>
3.	14.03.	Structures of buildings, identification of load-bearing structures, laboratory testing of materials – <i>VD</i>	16.03.	Functions, scalars and vectors: kinematics of point masses – <i>CS</i>
4.	21.03.	Newtonian principles of mechanics (of point masses) – <i>CS</i>	23.03.	Newtonian principles of mechanics (of point masses) – <i>CS</i>
5.	28.03.	Equilibrium of point masses (examples) – <i>VD</i>	30.03.	Consultation for Test 1 – <i>VD</i>
6.	04.04.	<b>Test 1</b>	06.04.	<i>Spring holiday (no lessons)</i>
7.	11.04.	<i>Spring holiday (no lessons)</i>	13.04.	<i>Preliminary design week (no lessons)</i>
8.	18.04.	Newtonian mechanics of rigid bodies – <i>CS</i>	20.04.	Newtonian mechanics of rigid bodies – <i>CS</i>
9.	25.04.	Structural materials – <i>VD</i>	27.04.	Stresses, deformations, strength – <i>VD</i>
10.	02.05.	Forces, loads, effects – <i>VD</i>	04.05.	Structural model of load-bearing structures – <i>VD</i>
11.	09.05.	Work, energy, power, collisions, friction – <i>CS</i>	11.05.	Construction site visit – <i>CS, VD</i>
12.	16.05.	Equilibrium of rigid bodies, simple load-bearing structures (examples) – <i>VD</i>	18.05.	Work, energy, power, collisions, friction – <i>CS</i>
13.	23.05.	Consultation for Test 2 – <i>VD</i>	25.05.	<b>Test 2</b>
14.	30.05.	<i>Draughting week (no lessons)</i>	01.06.	<i>Draughting week (no lessons)</i>
15.	06.06.	<b>Repetition of Test 1</b>	08.06.	<b>Repetition of Test 2</b>

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## REQUIREMENTS

<b>Conditions of inscription:</b>	Registration of the subject 'Fundamentals of Structures' in Neptun system.										
<b>Character of the lessons:</b>	All lessons are organized in presence. Types of lessons: <b>Lectures:</b> classes held at the blackboard, sometimes with the help of presentation slides. Practical (calculation) problems are also being solved during lectures. <b>Visits:</b> organized visits as illustration of the knowledge. <b>Tests:</b> where students prove their knowledge. Individual work, no aids can be used, only the calculator.										
<b>Prescriptions for presence:</b>	Presence on lessons is <b>obligatory</b> .										
<b>Mid-semester controls (dates as given in topics schedule):</b>	Two 90 minutes tests, max. 120 points each, 0 point in case of absence. Each test may be repeated once in the repetition week, the points achieved on repetition will <b>always</b> replace the regular one. <b>There is no other possibility to improve the test results.</b> Tests contain both theory and practical (calculation) problems.										
<b>Conditions of signature:</b>	1. Presence on at least 70% of the lessons (max 6 absences). 2. Min. 60 points on <b>each</b> test.										
<b>Mid-semester mark:</b>	Min. 50% of the total of 240 points (2 tests) must be achieved. Final mark: <table style="margin-left: 100px; border: none;"> <tr> <td style="padding-right: 20px;">0-119 points</td> <td>fail (1)</td> </tr> <tr> <td>120-144 points</td> <td>pass (2)</td> </tr> <tr> <td>145-169 points</td> <td>satisfactory (3)</td> </tr> <tr> <td>170-194 points</td> <td>good (4)</td> </tr> <tr> <td>195-240 points</td> <td>excellent (5)</td> </tr> </table>	0-119 points	fail (1)	120-144 points	pass (2)	145-169 points	satisfactory (3)	170-194 points	good (4)	195-240 points	excellent (5)
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170-194 points	good (4)										
195-240 points	excellent (5)										

Recommended literature:

A.J. Francis: Introducing structures pp. 1-28., pp. 221-259., pp. 278-285.

Daniel L. Schodeck: Structures pp. 3-120., pp. 472-534.

H.S. Howard: Structure, an architects' approach (McGraw Hill Co., 1966) pp. 3-43., pp. 204-233., pp. 275-286.

Information available in Moodle system (edu.epitesz.bme.hu):

- Topics schedule and requirements of the subject
- Lecture notes
- Solution of some selected problems
- Actual messages, results