

BME Department of Mechanics, Materials and Structures				
STRENGTH OF MATERIALS II.			CODE: BME EPST A401	
FULFILLMENT	CREDIT	SESSION	SEMESTER	YEAR
PRACTICAL MARK	6	2021/2022	SPRING	II.
LECTURER: Dr. Sajtos, István		PRACTICAL TEACHER: Dr. Gáspár, Orsolya, Michel Sébastien Jean		

TOPICS SCHEDULE

Week Calendar	Date	LECTURES		Date	PRACTICALS	
		Monday: 10:15-12:00 Room: K.3.92	Wednesday: 10:15-12:00 Room: K.3.92		Friday: 10:15-12:00 Room: K.3.92	
1.	14. 02.	Static analysis of structures: static determinacy, indeterminacy, over determinacy		18. 02.	P.1. Static analysis of structures: internal forces, static determinacy, indeterminacy, over determinacy	
7.	16. 02.	Elastic energy. External and internal spontaneous work. Imposed (virtual) work method			P.2. Work methods: spontaneous work and imposed (virtual) work, displacement calculation	
2.	21. 02.	Virtual work method, displacement calculation		25. 02.	P.3. Displacement calculation by virtual work method	
8.	23. 02.	Virtual work method, displacement calculation			P.4. Force method: one degree statically indeterminate structures	
3.	28. 02.	Force method: one degree statically indeterminate structures		04. 03.	P.5. Force method: more than one degree statically indeterminate structures, kinematic loads	
9.	02. 03.	Force method: more than one degree statically indeterminate structures			P.6. Plastic theory of beams	
4.	07. 03.	TEST 1: Virtual work method, static determinacy, indeterminacy, over determinacy		11. 03.	P.7. Cross method: no-sway frames with one internal joint	
10.	09. 03.	DEAN's BREAK			P.8. Cross method: no-sway frames with two or more internal joints, support settlement	
5.	14. 03.	HOLIDAY		18. 03.	P.9. Finite Element Method	
11.	16. 03.	Force method: kinematic loads, stiffness of beams			P.10. Bracing systems	
6.	21. 03.	TEST 1: RETAKE		25. 03.	P.11. Cross method: thermal effects, symmetry-antisymmetry. Buckling.	
12.	23. 03.	Plastic theory of beams			DRAUGHTING WEEK	
	26. 03.	Plastic theory of beams and frames (Saturday!!)		DRAUGHTING WEEK		
7.	28. 03.	PRELIMINARY DESIGN WEEK		01. 04.	DRAUGHTING WEEK	
13.	30. 03.	PRELIMINARY DESIGN WEEK			Retake Test 2. Retake Test 3.	
8.	04. 04.	TEST 2: Force method, plastic theory of beams.		08. 04.	DRAUGHTING WEEK	
14.	06. 04.	Stiffness of beams. Displacement method. Cross method: frames with one internal joint			DRAUGHTING WEEK	
9.	11. 04.	Cross method: no-sway frames and multi-supported beams		15. 04.	DRAUGHTING WEEK	
15.	13. 04.	Cross method: kinematic loads (support settlement, thermal effects)			DRAUGHTING WEEK	
10.	18. 04.	EASTER MONDAY		22. 04.	DRAUGHTING WEEK	
16.	20. 04.	SPRING HOLIDAY			DRAUGHTING WEEK	
11.	25. 04.	Finite Element Method of plane frames		29. 04.	DRAUGHTING WEEK	
17.	27. 04.	Finite Element Method of plane frames			DRAUGHTING WEEK	
12.	02. 05.	Bracing system of buildings.		06. 05.	DRAUGHTING WEEK	
18.	04. 05.	Buckling of columns			DRAUGHTING WEEK	
13.	09. 05.	TEST 3: Cross method, bracing systems		13. 05.	DRAUGHTING WEEK	
19.	11. 05.	Preparation for Global Exam			DRAUGHTING WEEK	
14.	16. 05.	DRAUGHTING WEEK		20. 05.	DRAUGHTING WEEK	
20.	18. 05.	DRAUGHTING WEEK			DRAUGHTING WEEK	
15.		Retake Test 2. Retake Test 3.		DRAUGHTING WEEK		
21.		Retake Test 2. Retake Test 3.		DRAUGHTING WEEK		

CONDITIONS OF FULFILMENT FOR SUBJECT STRENGTH 2.

CONDITIONS OF SIGNING FOR THE SUBJECT	<p>1. To get the credit points of subject Mathematics 2. and Strength of Materials 1.</p> <p>2. To register for the subject in the NEPTUN system.</p>
TYPE OF CLASSES	<p>- lectures</p> <p>- practicals</p> <p>- tests: are prepared alone, without any help and without notes, and must be submitted at the end of the lesson</p> <p>Students should make notes during the lectures and practicals.</p>
TASKS	<p>- 3 tests: tests score between 0 and 120 points, in case of absence 0 points. The date of the tests are announced in the schedule.</p> <p>If any of the tests does not reach 60 points, then it has to be repeated. Repetition (retake) test score overwrites the former test score. We give the opportunity to revise and repeat the test according to the schedule. Further chance is not given for repetition.</p> <p>- Homework exercises for altogether 40 points (HW exercises): HW exercises are uploaded weekly in the Moodle, connected to the Practicals. They help the preparation to the Tests. Submission of homework is optional. The points for the homework increases the semester points if the minimum test points are achieved.</p>
CONDITIONS OF FULFILMENT	<p>1. Attending at least 70 % of the practical lessons, and at least 70 % of the lecture lessons (attendance will be checked).</p> <p>2. To pass each test (to achieve at least 60 points out of 120 points in the test or in the repetition test).</p> <p>If the above detailed conditions are not fulfilled, the student gets a 1 (fail) mark, and must repeat the semester. This mark cannot be revised.</p>
MARK	<p>The semester will be closed by a practical mark, based on the semester work (3 tests and homework exercises); this mark will be the base of the credit points. The total points are calculated as the sum of the three test points and the homework points.</p> <p>Calculation of the mark:</p> <p>The semester points: $\text{Test1} + \text{Test2} + \text{Test3} + \text{Homework}$</p> <p style="margin-left: 40px;">0 - 179 total points: 1 (fail)</p> <p style="margin-left: 40px;">180 - 239 total points: 2 (pass)</p> <p style="margin-left: 40px;">240 - 279 total points: 3 (satisfactory)</p> <p style="margin-left: 40px;">280 - 339 total points: 4 (good)</p> <p style="margin-left: 40px;">340 - 400 total points: 5 (excellent)</p>
Recommended notes	<p>- Irving H. Shames: Introduction to Solid Mechanics, Prentice Hall, 1989 *</p> <p>- R.C.Hibbeler: Structural Analysis, 7th edition on SI Units. Prentice Hall, 2006 *</p> <p>- R.C.Hibbeler: Mechanics of Materials, Prentice Hall, 2008 or 2011.*</p> <p>- Strength of materials II. (Collection of examples)**</p> <p>- Strength of materials II. (Lecture notes by Ms. M. Gimesy)**</p> <p>- Domokos: Strength of Materials 2 **</p> <p>* it can be borrowed from BME Library.</p> <p>** it will be available in Moodle</p>

BME Department of Mechanics, Materials and Structures				
GLOBAL OF STRENGTH OF MATERIALS			CODE: BME EPST A499	
FULFILMENT	CREDIT	SESSION	SEMESTER	YEAR
GLOBAL EXAM	-	2021/2022	SPRING	II.
LECTURER: Dr. Sajtos, István		PRACTICAL TEACHER: Dr. Baranyai, Tamás		

CONDITIONS OF SIGNING FOR THE SUBJECT	1. Obtaining the credit points of subject Strength 1 and to register for subject Strength 2. 2. Signing for the subject in the NEPTUN system.
CONDITIONS OF TAKING THE GLOBAL EXAM	Obtaining the mark of subject Strength of Materials 2. Register on the exam date via NEPTUN system successfully. In case of absence of the exam a procedure fee is to be paid. Interrupted exams mean fail mark.
EXAM DATES	According to the NEPTUN system.
ABOUT THE EXAM	There will be a written exam and an oral exam (on the following day at 9.00 o'clock). - written part: The written exam consists of two parts of 90 minutes for each part. The problems will be from the topic of Statics, Strength 1. and Strength 2. Bring with you the fixed-end moment table. - oral part: we will inform you via Neptun message where to go to the oral part; it takes about 20-30 minutes (which contains a short preparing period as well); you will get 2 questions: one question from Statics or Strength 1 topic, and one question from Strength 2 topic; there will be no calculation problem. In case of online exam after the exam we will call each participant for a short talk to make sure that the submitted exam is their own product.
GLOBAL MARK	Written exam: max. 240 points (minimum 120 points must be achieved): 1 st part: max 120 p. 2 nd part: max 120 p. Only students who pass the written part may sit for the oral part. Oral exam: max. 120 points (minimum 60 points has to be achieved). Total exam points = written part score + oral part score 0 - 179 points: 1 (fail) 180 - 219 points: 2 (pass) 220 - 259 points: 3 (satisfactory) 260 - 299 points: 4 (good) 300 - 360 points: 5 (excellent)
REPETITION OF THE GLOBAL EXAM	In case of failure the global exam may be revised in the exam period as a "Repetition exam" fulfilling the conditions of the subject. Repeating a successful global exam can be performed according to the prescriptions of the "Code of Studies and Exams".
Recommended notes	The notes listed for Statics, Strength of Materials 1 and Strength of Materials 2.