

## POLYTECHNIC OF MEÐIMURJE IN ČAKOVEC

MMAIN						c				
	-			IRSE SYLL						
		CADEMIC	YE.	AR: 2020	/20	21				
<b>1. GENERAL COURSE INFO</b>	RMA	TION								
1.1 Course name	M	echanics of I	Mat	erials						
1.2 Study program/s										
1.3 Course status (O,E)	0			1.0	5 Mo	de of	Lec	tures	30	
1.4 Course code	41	00				truction	Exe	rcises	30	
1.5 Course abbreviation	M	оМ			•	umber of	Sen	ninars		
1.6 Semester	III				ho	urs)		arning		
1.7 ECTS	5			1.7	7 Pla	ce and		ilities of Pc	-	
					-	ne of	Me	djimurje in	čako	vec
					ins	truction				
2. TEACHING STAFF										
2.1 Course leader/s-title	Do	oc.dr.sc. Tanj	ja To		ntac			a.tomic@i		
					ntac	-	003	85 91 601	6541	
2.2 Assistant/s- title					ntac	-				
					ntac					
2.3 Instruction held by-				со	ntac	t				
title										
3. COURSE DESCRIPTION	I	1 1 1				1.:				
3.1 Course goals		-		eneral conc	•					
				erials, stress					-	
			•	blems regard				-	aded	beams.
3.2 Prerequisites				successfully p	asse	d the cours	e in	Viechanics		
3.3 Course outcomes		e students v			<b>c</b> .					
	11			sic terms in th						
				of loading, c			tena	li strengtn,	stati	C
	12			lifferential ec			rog	arded to th		hed
	12			construction			-			lueu
	13			he principles				-	ade ir	h
				static determ						
		more supp					e un	ucternina		
	14			components	of sti	ess loading	and	movemen	t in c	n axial,
				r and torsion		-				ŗ
	15	-		he main stre			e pla	in stress lo	ad ai	nd main
				n the plain d						
		assemblin	g be	eam construc	tions	5.		-		
	16	– Dimensior	ning	the simple co	onstr	uction elem	nent	s that are s	imple	e loades
		with admi	ssib	le loading fo	rces	for the give	n ma	iterial.	<u>.</u>	
3.4 Course content				ided into tw	•		•	-		
	-	-		ecture where		-	-			-
		-		audio exerci	-	art in which	n the	numerica	solu	tion for the
	giv	en problem	s wi	Il be studied.	<b></b>		1			
3.5 Types of coursework		Lectures	x	Exercises	x	Blended e-	x	Individual	x	Laboratory
						learning		activities		-

		Seminars and		Distant	-		Field		Multim and	edia	Mentorship
		workshops		learnin	б		classes		networ	k	
2.6 Language of		Other									
3.6 Language of instruction											
3.7 Monitoring students'	2.0	Class att	andan		0.5	6.0	minore			Facely	
work (enter the	2,0	Class att	endan	ice	0,5	Sei	minars			Essay	
number of ECTS		Class act	ivity			Pro	oject			Report/	paper
credits for each	1,5	Midterm	exam	ıs		Pra	actical task			Continu knowled	ous Jge check
activity so that the total number of	(1,5 )	Written	exam			Exp	perimental wo	ork			
ECTS credits is equal to the total ECTS	1,0	Oral exa	n			Re	search				
value of the course,		1								1	
1 ECTS = 30 hours)											
3.8 Assessment and											
evaluation of		A	ctivit	y specific			Percent 9		Ро	oints	-
students' work		Attend	ance	ŀ	Assessme	ent d	uring instruct 5%	lon		5	-
during classes and at		Class a		/			5%			5	-
the final exam				oject/ es	say		20%			20	-
		Midter Midter					35% 35%			35 35	
					nt for th	e stu	idents who fai	iled to f			-
							ents during the semester			-	
	Written exam				70%		70				
										-	
		Total:					100%			.00	]
										-	]
3.9 Assessment criteria –						ingl	100%			-	]
analysis per learning		Total:		Ways of				omes Mid-1	1	-	
		Total:			evaluat Activit		100% earning outco		1 :erm	00	Total
analysis per learning		Total:		Ways of			100% earning outco Mid-term exam 1 5	Mid-t exai	1 :erm m 2	00 Practical	Total 10
analysis per learning	Ou	tcome 1 tcome 2		Ways of			100% earning outco Mid-term exam 1 5 5	Mid-t	1 :erm m 2	00 Practical work 5	Total           10           15
analysis per learning	Ou Ou	Total:		Ways of			100% earning outco Mid-term exam 1 5	Mid-t exai	1 :erm m 2	00 Practical work	Total 10
analysis per learning	Ou Ou Ou Ou	Total: tcome 1 tcome 2 tcome 3 tcome 4 tcome 5		Ways of			100% earning outco Mid-term exam 1 5 5 10	Mid-t exai	1 :erm m 2	00 Practical work 5	Total           10           15           15
analysis per learning	Ou Ou Ou Ou	tcome 1 tcome 2 tcome 3 tcome 4 tcome 5 tcome 6		Ways of			100% earning outco Mid-term exam 1 5 5 10	Mid-1 exai	1 :erm m 2 )	00 Practical work 5 5	Total           10           15           15           15           15
analysis per learning	Ou Ou Ou Ou Ou	Total: tcome 1 tcome 2 tcome 3 tcome 4 tcome 5 tcome 6 tcome		Ways of			100% earning outco Mid-term exam 1 5 5 10	Mid-1 exai	1 :erm m 2 )	00 Practical work 5 5 5	Total           10           15           15           15           15           15           15
analysis per learning	Ou Ou Ou Ou Ou	Total: tcome 1 tcome 2 tcome 3 tcome 4 tcome 5 tcome 6 tcome tcome tcome	Atten	Ways of			100% earning outco Mid-term exam 1 5 5 10	Mid-1 exai	1 :erm n 2 ) ) 5	00 Practical work 5 5 5	Total           10           15           15           15           15           15           15
analysis per learning	Ou Ou Ou Ou Ou Tot Gra	tcome 1 tcome 2 tcome 3 tcome 4 tcome 5 tcome 6 tcome tcome tcome 6 tcome tcome 6	Atten	Ways of dance	Activit	ty o pa	100% earning outco Mid-term exam 1 5 5 10 15 15 35 ass the mid-	Mid-t exar 10 10 11 11 13 39 -term	1 eerm m 2 0 1 0 1 5 1 5 1 5 1 6 2 5 1 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2	00 Practical work 5 5 5 5 5 20 20	Total           10           15           15           15           20           100
analysis per learning	Ou Ou Ou Ou Ou Ou Gra mus	tcome 1 tcome 2 tcome 3 tcome 4 tcome 5 tcome 6 tcome tcome tcome 6 tcome tcome 6 tcome tcome 1 tcome 3 tcome 1 tcome 3 tcome 4 tcome 5 tcome 6 tcome 6 tcome 3 tcome 6 tcome 6 tcome 6 tcome 5 tcome 6 tcome 7 tcome	Atten 	Ways of dance	Activit	ty o pa	100% earning outco Mid-term exam 1 5 5 10 15 15 35	Mid-t exar 10 10 11 11 13 39 -term	1 eerm m 2 0 1 0 1 5 1 5 1 5 1 6 2 5 1 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2	00 Practical work 5 5 5 5 5 20 20	Total           10           15           15           15           20           100
analysis per learning	Ou Ou Ou Ou Ou Ou Ou Gra Mus	tcome 1 tcome 2 tcome 3 tcome 4 tcome 5 tcome 6 tcome related c-related tal ding of ou st achieve nts Gr	Atten	Ways of dance 5 nes (in o ast 50%	Activit	ty o pa	100% earning outco Mid-term exam 1 5 5 10 15 15 35 ass the mid-	Mid-t exar 10 10 11 11 13 39 -term	1 eerm m 2 0 1 0 1 5 1 5 1 5 1 6 2 5 1 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2	00 Practical work 5 5 5 5 5 20 20	Total           10           15           15           15           20           100
analysis per learning	Ou Ou Ou Ou Ou noi Gra mus Poir 89 -	Total: Total: tcome 1 tcome 2 tcome 3 tcome 4 tcome 5 tcome 6 tcome 6 tcome 6 tcome 6 tcome 7 tcome	Atten Atten tcon at le ade celle	Ways of dance	Activit	ty o pa	100% earning outco Mid-term exam 1 5 5 10 15 15 35 ass the mid-	Mid-t exar 10 10 11 11 13 39 -term	1 eerm m 2 0 1 0 1 5 1 5 1 5 1 6 2 5 1 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2	00 Practical work 5 5 5 5 5 20 20	Total           10           15           15           15           20           100
analysis per learning	Ou Ou Ou Ou Ou Ou Ou Gra mus Poir 89 - 76 -	Total: tcome 1 tcome 2 tcome 3 tcome 4 tcome 5 tcome 6 tcome tcome 6 tcome tcome 6 tcome 7 tcome 7 tcome 7 tcome 7 tcome 8 tcome 7 tcome 7	Atten Atten tcon at le ade celle	Ways of dance 5 nes (in o ast 50% nt (5) od (4)	Activit	ty o pa	100% earning outco Mid-term exam 1 5 5 10 15 15 35 ass the mid-	Mid-t exar 10 10 11 11 13 39 -term	1 eerm m 2 0 1 0 1 5 1 5 1 5 1 6 2 5 1 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2	00 Practical work 5 5 5 5 5 20 20	Total           10           15           15           15           20           100
analysis per learning	Ou Ou Ou Ou Ou Ou Ou Ou Ou Ou Ou Ou Ou O	Total: tcome 1 tcome 2 tcome 3 tcome 4 tcome 5 tcome 6 tcome -related tal ding of ou st achieve nts Gr - 100 exe - 88 ver - 75 go	Atten	Ways of dance 5 nes (in o ast 50% nt (5) od (4)	Activit	ty o pa	100% earning outco Mid-term exam 1 5 5 10 15 15 35 ass the mid-	Mid-t exar 10 10 11 11 13 39 -term	1 eerm m 2 0 1 0 1 5 1 5 1 5 1 6 2 5 1 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2	00 Practical work 5 5 5 5 5 20 20	Total           10           15           15           15           20           100
analysis per learning	Ou Ou Ou Ou Ou Ou Ou Ou Ou Ou Ou Ou Ou O	Total: tcome 1 tcome 2 tcome 3 tcome 4 tcome 5 tcome 6 tcome 6 tcome 6 tcome 7 tcome 7 tcome 7 tcome 7 tcome 8 tcome 4 tcome 7 tcome 7 tcom	Atten Atten tcon at le ade celler y go od (3 ss (2)	Ways of dance 5 nes (in o ast 50% nt (5) od (4)	Activit	ty o pa	100% earning outco Mid-term exam 1 5 5 10 15 15 35 ass the mid-	Mid-t exar 10 10 11 11 13 39 -term	1 eerm m 2 0 1 0 1 5 1 5 1 5 1 6 2 5 1 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2	00 Practical work 5 5 5 5 5 20 20	Total           10           15           15           15           20           100
analysis per learning outcomes	Ou Ou Ou Ou Ou Ou Ou Ou Ou Gra mus Foir 89 - 76 - 63 - 50 - 0 -	tcome 1 tcome 2 tcome 3 tcome 4 tcome 5 tcome 6 tcome tcome 6 tcome tcome 6 tcome tcome 6 tcome 6 tcome 6 tcome 7 tcome 7 tcome 6 tcome 7 tcome 7 tcom	Atten Atten tcon at le ade celler y go od (3 ss (2) (1)	Ways of dance 5 nes (in o ast 50% nt (5) od (4)	Activit 5 order tr 6 point:	ty o pa	100% earning outco Mid-term exam 1 5 5 10 15 35 ass the mid- r each learn	Mid-t exan	1 erm n 2 0 5 5 exam/ utcom	00 Practical work 5 5 5 5 20 'exam th e)	Total         10         15         15         15         20         100         e student
analysis per learning outcomes 3.10 Specific features	Ou Ou Ou Ou Ou Ou Ou Ou Ou Gra mus Poir 89 - 76 - 63 - 50 - 0 - In c	Total: tcome 1 tcome 2 tcome 3 tcome 4 tcome 5 tcome 6 tcome -related tal ding of ou st achieve nts Gr - 100 exe - 88 ver - 75 gov - 62 pa: - 49 fail ase the st	Atten Atten tcom at le ade cellei Y go od (3 ss (2) (1) udei	Ways of dance dance 5 nes (in o ast 50% nt (5) od (4) 3) nt accu	Activit 5 order to 6 point: mulate	o pa s fo	100% earning outco Mid-term exam 1 5 5 10 15 35 ass the mid- r each learn nore than 5	Mid-t exan 10 10 11 11 11 11 11 11 11 11 11 11 11	the p	00 Practical work 5 5 5 20 'exam th e)	Total 10 15 15 15 20 100 e student e/she is can
analysis per learning outcomes 3.10 Specific features related with taking	Ou Ou Ou Ou Ou Ou Ou Ou Ou Ou Gra Mus Foir 89 - 76 - 63 - 50 - 50 - 0 - In c dire	Total: tcome 1 tcome 2 tcome 3 tcome 4 tcome 5 tcome 6 tcome tcome 6 tcome tcome 6 tcome 100 exe 100 exe 1	Atten Atten tcon at le ade celler y go od (3 ss (2) (1) cuder bach	Ways of dance dance 5 nes (in o ast 50% nt (5) od (4) 3) nt accu the ora	Activit 5 order to 6 point: mulate al exam	o pa s fo	100% earning outco Mid-term exam 1 5 5 10 15 35 ass the mid- r each learn nore than 5 case the st	Mid-t exan 10 10 11 11 11 11 12 12 10 10 10 10 10 10 10 10 10 10 10 10 10	the p t does	00 Practical work 5 5 5 20 (exam th e) oints, he not acco	Total 10 15 15 15 20 100 e student e/she is can omplish the
analysis per learning outcomes 3.10 Specific features	Ou           Tot           63 -           50 -           0 -           In c           dire           pro	Total: tcome 1 tcome 2 tcome 3 tcome 4 tcome 5 tcome 6 tcome 6 tcome 6 tcome 7 tcome 7 tcome 7 tcome 7 tcome 7 tcome 8 tcome 8 tcome 7 tcome 7 tcom	Atten Atten tcon at le ade celler y go od (3 ss (2) (1) uder bach nt of	Ways of dance	Activit 5 order tr 6 point: mulate al exam on the f	o pa s fo	100% earning outco Mid-term exam 1 5 5 10 15 35 ass the mid- r each learn r each learn nore than 5 case the si case the si	Mid-t exan	the p t does	00 Practical work 5 5 5 20 (exam th e) oints, he not acco	Total 10 15 15 15 20 100 e student e/she is can
analysis per learning outcomes 3.10 Specific features related with taking	Ou Ou Ou Ou Ou Ou Ou Ou Ou Ou Gra mus Poir 89 - 76 - 63 - 50 - 50 - 0 - In c dire pro a pa	Total: tcome 1 tcome 2 tcome 3 tcome 4 tcome 5 tcome 6 tcome tcome 6 tcome tcome 6 tcome tcome 6 tcome 7 tcome 7 t	Atten Atten tcon at le ade celled y go od (3 ss (2) (1) cuden bach nt of follo	Ways of dance dance 5 nes (in o east 50% nt (5) od (4) c) nt accu the ora points o wing m	Activit 5 order to 6 point: mulate al exam on the f	o pa s fo	100% earning outco Mid-term exam 1 5 5 10 15 35 ass the mid- r each learn r each learn r each learn case the si case the si midterm (1 d Midterm)	Mid-t exan 10 10 11 10 11 10 11 10 10 11 10 10 11 10 10	the p t does term)	00 Practical work 5 5 5 20 'exam th e) oints, he	Total 10 15 15 15 20 100 e student e/she is can omplish the

3.12 Written       The points for homework assignments are calculated regarding the quality of the written assignment.         3.13 Students obligations       Full-time student cancer and paraded. The homework assignment must be held in 3 days before the written exam.         3.11 Students obligations       Full-time students are required to attend at least 70% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. Part-time students are required to attend at least 30% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. Part-time students are required to attend at least 30% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. Part-time students are required to attend at least 30% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. Part-time student as of fulfiled all the obligations set by the course, he is obliged to attend the lectures again and meet the condition for taking the exam. Attendance can be offset by online tuition, organised webinars and added assignments given by teachers. One lesson lasts 45 minutes, and several hours form a teaching unit. Absence from one teaching unit. Sounted as one absence. Delays and apologies are recorded separately. In that case, if the student missed more than 50% of classes, and has a justifiable reason/apology, the request should be submitted to the Department Council, which then decides on the justification of student absences with the obligatory opinion of the course leader.         3.12 Written       The homework assignment must be thyped out on a PC and must have maximum 12 text cards (Times New Roman, Not 12) including the introduction. The homework assignment must be divided in chapters, and include the literature refer							
The points gained on the assignments and class activity are valid through the whole academic year unless the student decides to better their grades. The student cannot approach the written exam unless the signed homework assignment is done and graded. The homework assignment must be held in 3 days before the written exam. The final grade is given on the oral exam.         3.11 Students obligations       Full-time students are required to attend at least 70% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. The final grade is given on the oral exam.         3.11 Students obligations       Full-time students are required to attend at least 70% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. If the student has not fulfilled all the obligations set by the course, he is obliged to attend the lectures again and meet the conditions for taking the exam. Attendance can be offset by online tuition, organised webinars and added assignments given by teachers. One lesson lasts 45 minutes, and several hours form a teaching unit. Absence from one teaching unit is counted as one absence. Delays and apologies are recorded separately. In that case, if the student missed more than 50% of classes, and has a justifiable reason/apology, the request should be submitted to the Department Council, which then decides on the justification of student absences with the obligator option of the course leader.         3.12 Written assignment must be typed out on a PC and must have maxingments is and include the literature references, and list of picture and list of table content. The chapter with the conclusion must be divided in chapters, and include the literature references, and list of picture and list of table content. The chapter with the conclusion must bave 250 words. The student guaranties the authent							
whole academic year unless the student decides to better their grades. The student cannot approach the written exam unless the signed homework assignment is done and graded. The homework assignment must be held in 3 days before the written exam.           3.11 Students obligations         Full-time students are required to attend at least 70% of the total number of hours of lectures and exercises in order to exercise the right to take the exam.           9.11 time students are required to attend at least 30% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. If the student has not fulfilled all the obligations set by the course, he is obliged to attend the lectures again and meet the conditions for taking the exam.           Attendance can be offset by online tuition, organised webinars and aded assignments given by teachers. One lesson lasts 45 minutes, and several hours form a teaching unit. Absence from one teaching unit is counted as one absence. Delays and apologies are recorded separately. In that case, if the student missed more than 50% of classes, and has a justifiable reason/apology, the request should be submitted to the Department Council, which then decides on the justification of student absences with the obligatory opinion of the course leader.           3.12 Written assignments         1.         Alfrevic. I: Nauka o čvstoći I, Tehnička knjiga, Zagreb, 1995.           3.13 Required reading         1.         Alfrevic. I: Nauka o čvstoći I, Tehnička knjiga, Zagreb, 1995.           3.13 Required reading         1.         Alfrevic. I: Nauka o čvstoći I, Tehnička knjiga, Zagreb, 1995.           3.14 Additional reading <th1.< th="">         Alfrevic. I: Nauka o čvstoći I</th1.<>		5					
3.11 Students obligations       The student cannot approach the written exam unless the signed homework assignment is done and graded. The homework assignment must be held in 3 days before the written exam.         3.11 Students obligations       Full-time students are required to attend at least 70% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. Part-time students are required to attend at least 30% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. If the student has not fulfilled all the obligations set by the course, he is obliged to attend the lectures again and meet the conditions for taking the exam. Attendance can be offset by online tuition, organised webinars and added assignments given by teachers. One lesson lasts 45 minutes, and several hours or absence. Delays and apologies are recorded separately. In that case, if the student missed more than 50% of classes, and has a justifiable reason/apology, the request should be submitted to the Department Council, which then decides on the justification of student absences with the obligatory opinion of the course leader.         3.12 Written assignments       The homework assignment must be typed out on a PC and must have maximum 12 text cards (Times New Roman, font 12) including the introduction and the pictured, attachments and tables, etc. The homework assignments must have an according front page, content with page numeration, introduction. The homework asignment must be divided in chapters, and include the filterature references, and list of picture and list of table content. The chapter with the conclusion must have 250 words. The student guaranties the authentic work as its own.         3.13 Required reading       1       Alffervic, 1: Nauka o Svistoci, 1, Shuka o Zvistoci, Sveučilište u Sp							
assignment is done and graded. The homework assignment must be held in 3 days before the written exam.         3.11 Students obligations       Full-time students are required to attend at least 70% of the total number of hours of lectures and exercises in order to exercise the right to take the exam.         7.11 Students obligations       Full-time students are required to attend at least 30% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. If the student has not fulfilled all the obligations set by the course, he is obliged to attend the lectures again and meet the conditions for taking the exam. Attendance can be offset by online tuition, organised webinars and added assignments given by teachers. One lesson lasts 45 minutes, and several hours form a teaching unit. Absence from one teaching unit is counted as one absence. Delays and apologies are recorded separately. In that case, if the student missed more than 50% of classes, and has a justifiable reason/apology, the request should be submitted to the Department Council, which then decides on the justification of student absences with the obligatory opinion of the course leader.         3.12 Written assignments       The homework assignment must be typed out on a PC and must have maximum 12 text cards (Times New Roman, font 12) including the introduction and the pictured, attachments and tables, etc. The homework assignment must be divided in chapters, and include the literature references, and list of picture and list of table content. The chapter with the conclusion must be divided in chapters, and include the literature references, and list of picture and list of table content. The chapter with the conclusion must be averation.         3.13 Required reading       1. Alfirevic, I:: Nauka o čvstoci I, Tehnička knjiga, Zagreb, 1995. </th <th></th> <th></th>							
days before the written exam. The final grade is given on the oral exam.           3.11 Students obligations         Full-time students are required to attend at least 70% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. Part-time students are required to attend at least 30% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. If the student has not fulfilled all the obligations set by the course, he is obliged to attend the lectures again and meet the conditions for taking the exam. Attendance can be offset by online tuition, organised webinars and adde assignments given by teachers. One lesson lasts 45 minutes, and several hours form a teaching unit. Absence from non teaching unit is counted as one absence. Delays and apologies are recorded separately. In that case, if the student has of0% of classes, and has a justifiable reason/apology, the request should be submitted to the Department Council, which then decides on the justification of student absences with the obligatory opinion of the course leader.           3.12 Written assignments         The homework assignment must be typed out on a PC and must have maximum 12 text cards (Times New Roman, fon 12) including the introduction and the pictured, attachments and tables, etc. The homework assignments must have an according front page, content with page numeration, introduction. The homework assignment must be 250 words. The student guaranties the authentic work as its own.           3.13 Required reading         1         Affrevic, I: Nauka o čvrstoći, Sveučilište u Splitu, Sveučilišni odjel za stručne studie, Skripta, 2019           3.14 Additional reading         1         Matejiček, F; Semenski, Z; Vnučec, Z:: Uvod u statistiku sa zbirkom zadataka, Slavonski Brod, Fakulte		The student cannot approach the written exam unless the signed homework					
The final grade is given on the oral exam.           3.11 Students obligations         Full-time students are required to attend at least 70% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. Part-time students are required to attend at least 30% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. If the student has not fulfilled all the obligations set by the course, he is obliged to attend the lectures again and meet the conditions for taking the exam. Attendance can be offset by online tuition, organised webinars and added assignments given by teachers. One lesson lasts 45 minutes, and several hours form a teaching unit. Absence from one teaching unit is counted as one absence. Delays and apolegies are recorded separately. In that case, if the student missed more than 50% of classes, and has a justifiable reason/apology, the request should be submitted to the Department Council, which then decides on the justification of student absences with the obligatory opinion of the course leader.           3.12 Written assignments must be typed out on a PC and must have maximum 21 text cards (Times New Roman, font 12) including the introduction and the pictured, attachments and tables, etc. The homework assignment must be divided in chapters, and include the literature references, and list of picture and list of table content. The chapter with the conclusion must have 250 words. The student guaranties the authentic work as its own.           3.13 Required reading         1. Alfirevic, 1: Nauka o čvstoci I, Tehnička knjiga, Zagreb, 1995.           9 Plazibat, B; Matokovic, A; Vetma, V: Nauka o čvstoci, Sveučilište u Splitu, Sveučilišni odjel za stručne studies divide, skripta, 2019           1. Alfirevic, I:: Nauka o čvstoci I, Tehnička knjiga, Za		assignment is done and graded. The homework assignment must be held in 3					
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	4.2 Contact the teacher						
during working hours by coming in person or by landline. It is also possible to							
ask questions by e-mail, which will be answered in 48 hours at the latest. It is		ask questions by e-mail, which will be answered in 48 hours at the latest. It is					

		desirable for stud	lents to come as often as p	ossible for any possible	questions		
		during the teache					
4.3 Info	rmation about	It is the obligation	n of each student to be reg	ularly informed about t	he course.		
the	course	All notifications a	about the classes or possible postponement of classes will be				
		posted on the bu	lletin board and on the we	bsite of the Polytechnic	at least 24		
		hours in advance.	•				
4.4 Cou	rse contribution	Personal knowled	-				
to t	he study	- Introduci	ng information, ideas, prol	plems and solution to th	e		
pro	gram	competer	nt and general public and o	communities			
		- Adaptabi	lity to new technologies, te	echniques and recent sy	stems as a		
		part of th	e whole life education.				
		- The capa	city to apply the gained kn	owledge in the field of t	echnical		
		expertise	on concrete engineering a	assignments,			
			city to identify, algorithm a	-			
		-	ing problems in the field of	-			
		Special expert kn	owledge and skills gained i	n completing the course	as in		
			ent Sustainable developme				
			art in research and develop				
		institutions					
	<ul> <li>Working in the project, consulting and executing development ar</li> </ul>						
		-					
			ectors within the field of Sustainable development.				
5. ANAL of the co			of hours is equal to the n				
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			of hours is equal to the n LECTURES Method				
			• of hours is equal to the n LECTURES Method • Direct teaching (lecture, instruction, pp presentation)				
of the c	ourse)	OPICS (the number	• of hours is equal to the n LECTURES Method • Direct teaching (lecture, instruction, pp presentation) • Discovery learning	umber of lectures and e	exercises		
	ourse)		• of hours is equal to the n LECTURES Method • Direct teaching (lecture, instruction, pp presentation) • Discovery learning (individual, lead,				
of the c	ourse)	OPICS (the number	• of hours is equal to the n LECTURES Method • Direct teaching (lecture, instruction, pp presentation) • Discovery learning (individual, lead, discussion)	umber of lectures and e	exercises		
of the c	ourse)	OPICS (the number	• of hours is equal to the n LECTURES Method • Direct teaching (lecture, instruction, pp presentation) • Discovery learning (individual, lead, discussion) • Group learning	umber of lectures and e	exercises		
of the c	ourse)	OPICS (the number	• of hours is equal to the n LECTURES Method • Direct teaching (lecture, instruction, pp presentation) • Discovery learning (individual, lead, discussion) • Group learning • Case study	umber of lectures and e	exercises		
of the c	ourse)	OPICS (the number	• of hours is equal to the n LECTURES Method • Direct teaching (lecture, instruction, pp presentation) • Discovery learning (individual, lead, discussion) • Group learning	umber of lectures and e	exercises		
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			principles, Mohr's circle	
4.	Linear and angular deformation. Deformation tensor and transformation of deformation tensor components. Major deformations and Mohr's circle deformations.	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> </ul>	Defining the general terms of linear and angular transformation, describing the principle of Mohr's circle.	11
5.	Mechanical properties of materials. Hook's law. Shear stress.	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> </ul>	Defining the terms on mechanical properties, showing the Hooks law diagram	11, 12, 13
6.	The correlation to the stress loading and deformation. Plain state of deformation	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> </ul>	Defining the terms regarding the tensors.	1,  2,  3
7.	Deformation and movement in the axial loaded beams. Axial stiffness	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> </ul>	Calculating the compoments of tensor stress and deformation in the arbitrarily rotated coordinate system	13, 14
8.	Tensor transformation of plain stress loading and deformation. Main stress and deformation.	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> </ul>	Calculating the components of the stress and movement in the loaded beams	14
9.	Assembling and thermal stress loading of the beam 1 <sup>st</sup> Midterm test	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> </ul>	Calculating the thermal and assembling stress loading in the beam constructions	`15
10.	Torsion of plain round beams. Stress and deformation components.	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> </ul>	Calculating the components and the movement in the torsion loaded beams	14, 15
11.	Static undeterminated examples on bending. Dimensioning the beams at bending forces.	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> </ul>	Dimensioning the simple construction elements on loaded constructions	16
12.	Presuming and limitations on the analysis of bending of plain prism beams.	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> </ul>	Calculating the components of stress and deformations	14
13.	Stress at bending the beams, moments and forces.	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> </ul>	Calculating the components of the stress and movement, analyse the main stress fir the plain state of	14, 15

			stress loading and main deformations	
14.	Shear force on the beam. Components of stress and deformation at shear stress. Dimensioning the beams loaded on bending.	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> </ul>	Calculating the components of the stress and movement	
15.	2 <sup>nd</sup> Midterm test	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> </ul>		
	EXE	RCISES/ SEMINARS		
Hours	Topic and description	Method • Direct teaching (lecture, instruction, pp presentation) • Discovery learning (individual, lead, discussion) • Group learning • Case study • Field classes	Learning outcomes	Course outcome
1.	Review of the basic and main terms of static. Calculating the components of the stress vector and tensor.	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> <li>Discovery learning (individual, lead, discussion)</li> </ul>	Defining the basic terms of the mechanics of materials; stress loading; types of stress; deformation of materials, static un-determination of the structure and main deformation	11
2.	Calculating the components of the stress and deformations	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> <li>Discovery learning (individual, lead, discussion)</li> </ul>	Calculating the components of the stress and deformation on the given examples	11
3.	Connecting the components of deformation with the components of stress loading.	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> <li>Discovery learning (individual, lead, discussion)</li> </ul>	Calculating the components of stress loading and components on deformation on given examples	11
4.	Analyse of deformation and Mohrs circle.	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> <li>Discovery learning (individual, lead, discussion)</li> </ul>	Determination of components on linear and angular deformations in the directions of the coordinate system, main directions and	12, 13, 14

		<ul> <li>Direct teaching (lecture,</li> </ul>	main deformations including the angular deformation of the Mohrs' circle.	
5.	Calculating the elastic constant material	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> <li>Discovery learning (individual, lead, discussion)</li> </ul>	Calculating the elastic constant E, and the Poisson's' ratio	11, 12, 13
6.	The connection between the stress loading and deformation. Calculating the components of stress loading on plain state of stress loading.	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> <li>Discovery learning (individual, lead, discussion)</li> </ul>	Determination the main deformation and the directions of main deformations	11, 12, 13
7.	Movement. Dimensioning the beams.	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> <li>Discovery learning (individual, lead, discussion)</li> </ul>	Based on the force value calculating the stress load in the beams and determinate the point movement in the plan.	13, 14
8.	Calculating the main stress loading and deformation	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> <li>Discovery learning (individual, lead, discussion)</li> </ul>	Determinate the main stress directions on given components of stress tensor	15
9.	Static un-determinated beam structures. Bending. 1 <sup>st</sup> Midterm test	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> <li>Discovery learning (individual, lead, discussion)</li> </ul>	Calculating the relations, plain beam, drawing the transversally diagram	14 15
10.	Calculating the stress in the plain round beam loaded on bending.	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> <li>Discovery learning (individual, lead, discussion)</li> </ul>	Calculating the strength and stiffness	15 <i>,</i> 16
11.	Calculating the stress loading in the static un-determinated beam loaded on bending.	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> <li>Discovery learning (individual, lead, discussion)</li> </ul>	Calculating the approved loading	14, 15

12.	Calculating the bending moment in the beam	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> <li>Discovery learning (individual, lead, discussion)</li> </ul>	Calculating the value of the approved loading.	
13.	Calculating the normal stress in the beam loaded on bending force.	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> <li>Discovery learning (individual, lead, discussion)</li> </ul>	Dimensioning the cross section	14, 15
14.	Calculating the shear stress in the loaded beam. Dimensioning the beam.	<ul> <li>Direct teaching (lecture, instruction, pp presentation)</li> <li>Discovery learning (individual, lead, discussion)</li> </ul>	Dimensioning the cross section, drawing the diagram, moment of bending and elastic line	14, 15, 16
15.	2 <sup>nd</sup> Midterm test			