

ME 323 - MECHANICS OF MATERIALS

Schedule for Spring 2024

PER	DATE	TOPIC	READING*	HWK DUE
1 M	08-Jan	Introduction; Static equilibrium	Chap. 1	
2 W	10-Jan	Normal stress and strain; Mechanical properties	Chap. 2	
3 F	12-Jan	Shear stress and strain – direct shear	Chap. 3	
M	15-Jan	MLK Birthday: no class		
4 W	17-Jan	Stress – introduction to design of deformable bodies	Chap. 4	
5 F	19-Jan	Stress and strain – general definitions	Chap. 5	HW. 1
6 M	22-Jan	Axial members – determinate structures	Chap. 6	
7 W	24-Jan	Axial members – indeterminate structures	Chap. 6	
8 F	26-Jan	Axial members – planar trusses	Chap. 6	HW. 2
9 M	29-Jan	Axial members – thermal effects	Chap. 7	
10 W	31-Jan	Torsion members – stresses in circular bars	Chap. 8	
11 F	2-Feb	Torsion members – statically determinate structures	Chap. 8	HW. 3
12 M	5-Feb	Torsion members – statically indeterminate structures	Chap. 8	
13 W	7-Feb	Beam stresses – equilibrium and flexural stresses	Chap. 10	
14 F	9-Feb	Beam stresses – flexural and shear stresses	Chap. 10	HW. 4
15 M	12-Feb	Beam stresses – shear stresses	Chap. 10	
16 W	14-Feb	Shear force/bending moment diagrams – determinate structures	Chap. 9	
17 F	16-Feb	Beams deflections– statically determinate structures	Chap. 11	HW 5
18 M	19-Feb	Beam deflections - indeterminate structures	Chap. 11	
19 W	21-Feb	Beam deflections – superposition methods	Chap. 11	
20 F	23-Feb	Energy methods – Castigliano’s theorems	Chap. 16	HW. 6
21 M	26-Feb	Review		
W	28-Feb	Examination 1, 8-10pm: no lecture on Wednesday		
22 F	1-Mar	Energy methods – Castigliano’s theorems	Chap. 16	
23 M	4-Mar	Energy methods – Castigliano’s theorems	Chap. 16	
24 W	6-Mar	Energy methods – Castigliano’s theorems	Chap. 16	
25 F	8-Mar	Shear force/bending moment diagrams – indeterminate structures	Chap. 9	HW 7
		Spring Break, March 11-15: no class		
26 M	18-Mar	Shear force/bending moment diagrams – indeterminate structures	Chap. 9	
27 W	20-Mar	Energy methods – introduction to finite element methods	Chap. 17	
28 F	22-Mar	Energy methods – introduction to finite element methods	Chap. 17	HW 8
29 M	25-Mar	Thin-walled pressure vessels – axial and hoop stresses	Chap. 12	
30 W	27-Mar	Stress transformation – principal /maximum shear stresses	Chap. 13	
32 F	29-Mar	Stress transformation – Mohr’s circle	Chap. 13	HW 9
33 M	1-Apr	Review		
W	3-Apr	Examination 2, 8-10pm: no lecture on Wednesday		
33 F	5-Apr	Stress transformation – absolute maximum shear stress	Chap. 13	
34 M	8-Apr	Stresses – combined loading	Chap. 14	
35 W	10-Apr	Stresses – combined loading	Chap. 14	
36 F	12-Apr	Stresses – combined loading	Chap. 14	HW 10
37 M	15-Apr	Failure analysis – stress theories	Chap. 15	
38 W	17-Apr	Failure analysis – stress theories	Chap. 15	
39 F	19-Apr	Failure analysis – buckling of columns	Chap. 18	HW 11
40 M	22-Apr	Practice with combined loadings and failure analysis		
41 W	24-Apr	Practice with combined loadings and failure analysis		
42 F	26-Apr	Review		
	TBA	Final Examination		

* Reading assignments from lecture book