

Assignment Sheet for ME:5159 Fracture Mechanics (Spring 2020)

Wk.	Mtg. (Lec.)	Date	Topics/Reading ^(a)	HW/CP	Due Date
1	1 (1)	Jan 22, Wed	Introduction (1-12)		
	2 (2)	Jan 24, Fri	Review of Elasticity Theory (88-91)		
2	3 (3)	Jan 27, Mon	Review of Elasticity/Yield Criteria		
	4 (4)	Jan 29, Wed	Stress Concentration	HW1	Feb 10, Mon
	5 (5)	Jan 31, Fri	FEM – 2D Elasticity Problems (554-556)		
3	6 (6)	Feb 03, Mon	CP1 – Stress Concentration (27-28)	CP1	Feb 17, Mon
	7 (7)	Feb 05, Wed	CP1		
	8 (8)	Feb 07, Fri	CP1/HW1		
4	9 (9)	Feb 10, Mon	Stress Analysis of Cracks (42-48, 72-75)		
	10 (10)	Feb 12, Wed	SIFs for Fracture Specimens (48-53)		
	11 (11)	Feb 14, Fri	Singular Finite Elements (587-591)		
5	12 (12)	Feb 17, Mon	Numerical Evaluation of SIFs (558-586)	HW2	Feb 28, Fri
	13 (13)	Feb 19, Wed	SIF as a Failure Criterion (58-61, 69-79)		
	14 (14)	Feb 21, Fri	CP2 – 2D Mode-I Fracture Analysis	CP2	Mar 06, Fri
6	15 (15)	Feb 24, Mon	CP2		
	16 (16)	Feb 26, Wed	CP2/HW2		
	17 (17)	Feb 28, Fri	Principle of Superposition (54-57)		
7	18 (18)	Mar 02, Mon	Applications – Aircraft Industry	HW3	Mar 11, Wed
	19 (19)	Mar 04, Wed	Mixed-mode Fracture (80-85)		
	20 (20)	Mar 06, Fri	CP3 – 2D Mixed-Mode Fracture Analysis	CP3	Mar 25, Wed
8	21 (21)	Mar 09, Mon	CP3/HW3		
	22	Mar 11, Wed	Review		
	23	Mar 13, Fri	Examination 1		
9	Spring Break (Mar 16-20)				
10	24 (22)	Mar 23, Mon	Fracture Process Zone (61-71)		
	25 (23)	Mar 25, Wed	EPFM, J-integral, HRR (103-133)	HW4	Apr 03, Fri
	26 (24)	Mar 27, Fri	Pipe Fracture Evaluation		
11	27 (25)	Mar 30, Mon	Applications – Nuclear Industry (398-401)		
	28 (26)	Apr 01, Wed	Limit-Load Analysis/HW4		
	29 (27)	Apr 03, Fri	CP4 – 3D Pipe Crack Analysis	CP4	Apr 13, Mon
12	30 (28)	Apr 06, Mon	CP4		
	31 (29)	Apr 08, Wed	CP4		
	32 (30)	Apr 10, Fri	CP4/HW5		
13	33 (31)	Apr 13, Mon	Crack-Opening-Area Analysis	HW5	Apr 20, Mon
	34 (32)	Apr 15, Wed	Crack-Opening/NRC LBB		
	35 (33)	Apr 17, Fri	Design Example based NRC LBB		
14	36 (34)	Apr 20, Mon	Fatigue Crack Propagation (451-457)	HW6	Apr 27, Mon
	37 (35)	Apr 22, Wed	Fatigue Life Prediction (451-459)		
	38 (36)	Apr 24, Fri	Crack Closure, etc./HW6 (457-459)		
15	39 (37)	Apr 27, Mon	CP5 – Fatigue Crack Growth Analysis	CP5	May 04, Mon
	40 (38)	Apr 29, Wed	CP5		
	41 (39)	May 01, Fri	CP5		
16	42 (40)	May 04, Mon	Experimental Fracture (Video)		
	43	May 06, Wed	Review		
	44	May 08, Fri	Examination 2		

(a) Parenthetical values are page nos. of the *Anderson* book; HW = homework; CP = computer project