

COE 2001 – Statics

Blue room, 14:00-15:25, Mondays and Wednesdays

Text: *Engineering Mechanics: Statics by David McGill and Wilton King*

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Office hours: 10:00-12:00, Mondays and Wednesdays, or by appointment.

Prerequisites: MATH 1502 or MATH 1512 or (MATH 15X2 and MATH 1522) and PHYS 2211

Chapter #	Title	Recommended Problems
1	INTRODUCTION	
2	FORCES AND PARTICLE EQUILIBRIUM	
2.2	Forces	2.26, 2.31
2.3	Equilibrium of a particle	2.48, 2.50, 2.58
2.4	Equilibrium of a system of particles	2.75, 2.90
3	MOMENT OF A FORCE	
3.2	Moment of a force about a point	3.7, 3.14
3.3	Moment of a force about a line	3.19, 3.25, 3.35, 3.36
3.4	Couples	3.47, 3.51, 3.54
3.6	Equipollence of force systems	3.61, 3.63, 3.64
3.7	Force-and-Couple resultant	3.82, 3.86, 3.89
3.8	Simplest resultant of a force system	3.98, 3.104, 3.106, 3.115, 3.117
3.9	Distributed force systems	3.149, 3.155
4	ANALYSIS OF GENERAL EQUILIBRIUM PROBLEMS	
4.3	Fundamental applications of equilibrium equations	4.13, 4.21, 4.34, 4.36, 4.39, 4.44, 4.46, 4.75, 4.95, 4.116, 4.121
4.4	Applications of the equilibrium equations to interacting bodies or parts of structures	4.153, 4.158, 4.175, 4.219, 4.254
5	STRUCTURAL APPLICATIONS	
	I TRUSSES	
5.3	Method of joints	5.7, 5.14
5.4	Shortcuts and rigidity	5.27, 5.28, 5.29
5.5	Method of sections	5.48, 5.49, 5.61, 5.68
5.6	Space trusses	5.79
	II SYSTEMS CONTAINING MULTIFORCE MEMBERS	
5.8	Axial and shear forces and bending moments	5.131, 5.141, 5.144, 5.149
5.9	Beams/Shear and moment distributions	5.155, 5.162, 5.164, 5.177
6	FRICTION	
6.2	Laws, coefficients and basic applications of Coulomb friction	6.6, 6.9, 6.34, 6.41, 6.54

7	CENTROIDS AND MASS CENTERS	
7.1	Centroids: lines, areas and volumes	7.12, 7.23
7.2	Method of composite parts	7.44, 7.51, 7.54
7.3	Center of mass	7.100, 7.104, 7.109

Assessment:

1. Four assignments, based on the problems set above, 5% each of final grade (20%).
2. Mid-term exam (30%).
3. Final exam (50%).