ASSIGNMENT SHEET **ME 437 STRUCTURAL ANALYSIS**

TEXT: Advanced Strength and Applied Elasticity
A.C. Ugural and S.K. Fenster, Prentice Hall, 4rd Ed.

REFERENCE: Advanced Strength of Materials
J.P. Den Hartog, McGraw-Hill

Weeks	**Topics**	**Sections**	**Problems**
1	Review of Mechanics of Materials; Axial, Torsion, Bending and Combined Stresses	Notes Pgs. 1-13	----------
2-3	Classical Beam Theory; Bending of Beams; Deflection of Beams	Arts. 5.1-5.2 Arts 5.4-5.7	Assigned Problems I, II
4	Beam-Column; Deflection Equation; General Case for Structures	Chap.2, Vol.II, (Timoshenko)	Prob. #1
5	Elastic Stability; Buckling of Columns; Indeterminate Structures	Arts. 11.1-11.5; 11.7	Probs. #2,3 Probs. A, B
6	**Exam #1** Introduction to Energy Methods	Arts. 2.11-2.14	Probs. #4,5
7-8	Conservation of Energy	Arts. 10.1-10.3 Arts. 36, 38 (Den Hartog)	Probs. #6,7,8
9-10	Principle of Minimum Potential Energy; Rayleigh – Ritz Method	Arts. 10.8 – 10.11 Art. 11.9	Probs. #9,10,11
11	Principle of Minimum Complementary Energy; Castigliano's Theorem	Arts. 10.4- 10.7	Probs. #12,13,14
12	**Exam #2** Introduction to Beams on Elastic Foundation	Arts. 9.1 – 9.6	--------
13-14	Applications of Beams on Elastic Foundation; Cylindrical Shells	Arts. 21-25 (Den Hartog)	Probs. #9.1, 9.2, 9.5, 9.6, 9.10
15	**FINAL EXAM**		

May 27, 2004