

CE 511
Structural Analysis II
M, W and F 9:00-9:50 am
211 Carrier Hall

Instructor: Dr. Ahmed Al-Ostaz
202 Carrier Hall
Tel: 915-5364
e-mail alostaz@olemiss.edu

● **Objectives:** To learn basic principles of analysis of structures subjected to loads for which time-dependent nature need to be considered

● **Scope:** Modeling of Structures for dynamic analysis, structures with a single degree of freedom, and general multiple degrees of freedom, analysis of structures subjected to earth quakes. Elastic Stability. Fracture Mechanics

● **Compute Use:** Matalab and SAP2000

● **Text:** -Dynamics of Structures by Clough and Penzien;
supplementary notes
- Supplementary Notes by A. Al-Ostaz

● **Final Grade:**

Homework	20%
2 Midterm Exams	30%
Final Exam	30%
Projects	20%

● Graduate Students will be given different HWs and Exams from undergraduate students

<u>Date</u>	<u>Class Period</u>	<u>Topic</u>	
1/15	1	Equation of Motion	
1/20	2	Free Vibration	
1/22	3	General Dynamic Loading	
1/27	4	Harmonic Loading	
1/29	5	Periodic Loading	
2/3	6	Impulsive Loads	
2/5	7	Numerical Methods	
2/10	8	Numerical Methods	
2/12	9	Review	
2/17	10	Exam #1	
2/19	11	MDOF Systems	
2/24	12	Natural Frequencies	
3/26	13	Mode Shapes	
3/3	14	Mode Superposition Theory	
3/5	15	Mode Superposition Theory	
3/10	16	Numerical Methods	
3/12	17	Continuous Systems	
3/17	18	Continuous Systems	
3/19	19	Applications	
3/31	20	Review	
4/2	21	Exam #2	
4/7	22	Elastic Stability	
4/9	23	General Equations of stability	
4/14	24	Effective Length	
4/16	25	Effect of Eccentricity	

4/21	26	Effect of Initial Curvature	
4/23	27	Effect of Local Plasticity	
5/8	30	FINAL EXAM 8:00 – 11:00 am	

Part1- Structural Dynamics

Supplementary Problems	1-15
Supplementary Notes	16-58
Problems for SDF structures	1-6
Problems for Numerical Integration	7-9
Problems for 2 DOF structures	10-13
Problems for Use of computer	14-15
Notes on 2 DOF structures	16-22
Notes on General Plane Frames	23-25
Notes on Numerical Integration	26-41
Notes on Stress Analysis (Modal Analysis)	42-47
Design Response Spectra	48-49
Notes on Structure Soil Interaction	50-58