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

Instructor: Dr. Ahmed Al-Ostaz
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- **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:** Mtalab 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

Date	Class Period	Topic	
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