



Sharif University of Technology
School of Civil Engineering

Dynamics of Structures

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<http://sharif.edu/~dolatshahi/DynamicsStructures.html>

Schedule: Lectures: Saturday, Monday; 7:30-9:00
Office Hours: Saturday; 12:30-13:00

Grading: Homework 15%
Mid-term exam 35%
Final exam 50%

Exam dates: Mid-term: 1393/09/3 - 15:00-18:00
Final: 1393/10/24 - 9:00-12:00

Lecture Topics:

- Overview of Structural Dynamics
- Single Degree Of Freedom (SDOF) Systems
 - Equation of Motion
 - Free Vibration Analysis
 - Response to Harmonic Excitations
 - Response to Pulse and Arbitrary Excitations
 - Numerical Evaluation of Dynamic Response
 - Response of Linear Systems to Earthquake Excitations
 - Response of Non-linear Systems to Earthquake Excitations
- Generalized SDOF Systems
- Multi Degree Of Freedom (MDOF) Systems
 - Equations of Motion
 - Evaluation of Structural-Property Matrices
 - Free Vibration Analysis
 - Forced Vibration Analysis Using Mode Superposition Method
 - Damping Models
 - Earthquake Analysis of Linear Systems

Texts:

1-Dynamics of Structures, Theory and Application to Earthquake Engineering, Anil K. Chopra, Prentice Hall, 4th Edition, 2006

2-Dynamics of Structures, R.W. Clough and J. Penzien, McGraw Hill, 2nd Edition, 1993, McGraw Hill, 2nd Edition, 1993

3-Dynamics of Structures, J.L. Humar, Prentice Hall, 1990

Class Policies:

- Homework will be due one week after being assigned. A penalty of 20% will be applied to the homework submitted until the next session. Late assignments, submitted after three sessions, will not be accepted.
- Attendance policy -- Students are expected to attend all lectures.
- Academic Integrity -- The student conduct is governed by the rules of the University and students are expected to know and abide by the University policies on academic honesty and integrity. It is the responsibility of the student to refrain from infractions of academic integrity which include cheating, fabrication and plagiarism. Any homework, exam, and project handed in by an individual must represent their own original work. Violation of the University rules will result in a failing grade in the course, suspension, and dismissal.