Lecture Syllabus

Fall, 2021

Structural Analysis & Applications

Lecturer : Hong-Gun Park (880-7055, Building 39-431 parkhg@snu.ac.kr)

Teaching Assistant : Moon Hanse (880-7053, Building 39, Structural system laboratory)

Lecture time : Mon & Wed.   11:00 – 12:15,   Room 39-427

- On line lecture or Hybrid lecture (according to Covid-19).

Text Book : Matrix Structural Analysis 2nd edition,

William McGuire, Richard H. Gallagher, Ronald D. Ziemian

John Wiley & Sons, Inc.

- You can order a copy of the text through TA. Send an email to TA

Summary of Textbook : handouts from email

Lecture contents : concept of stiffness matrix analysis for line element structures such as trusses and moment frames.

Introduction to Matrix Analysis

Technique for Matrix calculations

Linear analysis of trusses

Linear analysis of moment frames

Variational Principles (Energy method)

Geometric nonlinear analysis of truss and frame

Material Nonlinear analysis

Solution of linear algebraic equations

Solution of nonlinear equilibrium equations

Computer program for truss and frame analysis

Evaluation :

Homework & Projects : 40 %

Mid-term test : 30 %

Final test : 30 %

Deadline for submission of homework : within a week

Projects : computer programming for structural analysis using software matlab

- Submit all homeworks and projects to TA.