

Lecture Syllabus

spring, 2020

Structural Analysis & Applications

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

Teaching Assistant : Lee Yousang (880-7053, Building 39, Structural system laboratory)

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

- Temporarily will be given by video lecture.
- Every week, two video files will be given by emails.

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.