ME7112 有限元素法　Finite Element Method

Instructors:

- Prof. Jia-Yang Juang (莊嘉揚), 工綜 713, 02-33669406, jiayang@ntu.edu.tw
- Teaching Assistant (TA), 曾于虔, 工綜 410, r08522508@ntu.edu.tw

Class Meetings:

- Lecture, Thursdays 789, 綜 301
- Office Hours, 莊嘉揚(工綜 713): Mondays 11:00-12:00
  曾于虔(工綜 410)：Wednesdays 10:00-11:00, Thursdays 10:00-11:00

Course Website: http://homepage.ntu.edu.tw/~jiayang/me7112/2020f/syllabus.htm

Text Books:

- (Required) J. N. Reddy, "An Introduction to the Finite Element Method," Third edition 東華書局代理, flwu@tunghua.com.tw, 0937950267
- (Reference) S. Moaveni, "Finite Element Analysis, Theory and Application with ANSYS," Third edition 高立圖書代理, gauli@ms37.hinet.net, 0921456015
- (Reference) D. L. Logan, "A First Course in the Finite Element Method," Fifth edition 歐亞書局代理, michelle.yang@eurasia.com.tw, 0939660513

- (Reference) Huei-Huang Lee, "Finite Element Simulations with ANSYS Workbench 15," SDC Publications, August 7, 2014.

- (Reference) ANSYS Help (APDL)/User Manuals

Grading:

- 15% Homework assignments

- 25% One midterm exam, closed book (open one A4 sheet), no make-up

- 35% Term project:
  - 3~4 students per group,
  - 10-minute oral presentation + 3-minute Q&A (助教評分 35% × 25%, 學生互評 35% × 25%)
  - term paper (35% × 50%)

- 25% Final exam: Given in class in the final week of semester, closed book (open one A4 sheet), no make-up

Tentative Schedule:

Week	Dates	Topics	Chapters
1	9/17	- Course outline - Introduction	1
2	9/24	- Introduction - The mathematical approaches	1 2
3	10/1	No class	
4	10/8	- The mathematical approaches	2
5	10/15	- One-dimensional finite element analysis	3
6	10/22	- One-dimensional finite element analysis	3
7	10/29	- One-dimensional finite element analysis	3, 4
8	11/5	- Bending of beams	5
9	11/12	- Midterm (Chap. 1~4)	
10	11/19	- Term project progress report due - Bending of beams	 5
11	11/26	- Eigenvalue and Time-dependent problems	6
12	12/3	- Two-dimensional finite element analysis	8
13	12/10	- Two-dimensional finite element analysis	8
14	12/17	- Numerical integration	7 & 9
15	12/24	- Numerical integration	7 & 9
16	12/31	- Numerical integration	7 & 9
17	1/7	- Term project due and oral presentation	
18	1/14	Final Exam (Chap. 5~9)	

Software training sessions will be held by the TA if more than 50 students enrolled in this course.