NTHU ESS 4100, Fall 2022
Nuclear Power System
核能系統 (Senior Level)

Instructor: Prof. Shao-Wen Chen, 陳紹文教授
Office: 李存敏館 607 (LTM-607); **Tel:** 34169; **E-mail:** chensw@mx.nthu.edu.tw
Lecture time: M7,M8, R6; **Classroom:** LTM-203 (實體上課)
◎若因疫情需遠距，將採用 **google meet** 視訊上課**:** **https://meet.google.com/gto-cugw-bid**
(依學校公告與老師 **e-mail** 通知為準。 **)**
Grades:
Homework: 15%, Final Project: 15%
Midterm Exam: 35%, Final Exam: 35%
Note:
1. HW due: **1 week** after assigned.
2. **No plagiarizing! No copy!**

TA: ; **Office: LTM-610**
E-mail: ; **Tel: 34221**

數位學習平台 **NTHU eLearn:** https://elearn.nthu.edu.tw

References:
1. M.M. El-Wakil, "Power Plant Technology", McGraw-Hill Company, 1984
2. J.R. Lamarsh, AJ. Baratta, "Introduction to Nuclear Engineering", 3rd Edition, Prentice Hall, 2001
3. A. J. Rahn, et al., "A guide to Nuclear Power Technology", Krieger Publishing Company, 1992
4. 楊昭義，歐陽敏盛，"核能發電工程學"

Tentative outline: (The following outline and dates are subject to change due to unexpected events or other issues.)
1. Introduction
2. Thermodynamics and Rankine Cycle
3. Basic Reactor Engineering
   - Core Physics
   - Thermal-Hydraulic
   - Nuclear Fuel Cycles
   - Safety Concerns and Design of Nuclear Power Plant
4. Introduction to Boiling Water Reactors

Midterm Exam, 11/7 (Mon.), 3:30pm, LTM-203 (Expected)

5. Introduction to Pressurized Water Reactors
6. Operation of Nuclear Power Plants
   - Three Mile Island Incident
   - Chernobyl Accident
   - Fukushmia Accident
   - Tokaimura nuclear accident
7. Advanced Design of Nuclear Power Reactors
8. Generation IV, AP-1000, ESBWR, SMR……
9. Public issues
10. Final Project Presentations (10-15 minutes; also submit **slides**)

Final Exam, 1/9 (Mon.), 3:30pm, LTM-203 (Expected)