Course outline
JEE644 Power Plant Engineering, 3 (3-0-6), Semester 2/2019
Friday 13.30 – 16.30 hr, Class Room: 3204
Instructor: Dr. Boonrod Sajjakulnukit, Dr. Nakorn, Dr. Athikom Bangwiwat

Objective of the course is to provide students an overview of various types of power plants and their components. Basic concepts for fuels and combustion processes, Analysis of steam cycles and combined cycle power generation, Steam generation and turbines, Condenser, feed water and circulating water systems, Gas turbine power plants, emission control and flue gas treatment. Economics of power generation.

Wk	Date	Details	Instructor
1	17/01	Introduction to power plant generation • Electricity generation in the world and Thailand • Types of power plant categorized by fuels • Fuel reserve for electricity generation	Dr. Boonrod
2	24/01	Basic concepts for fuels and combustion processes I • Fuel analyses and properties • Concept of combustion • Combustion products	Dr. Nakorn
3	31/01	Basic concepts for fuels and combustion processes II • Combustion stoichiometry	Dr. Nakorn
4	7/02	Analysis of steam cycles	Dr. Boonrod
5	14/02	Power plant components: Steam power plants • Steam generation and turbines • Condenser • Feed water and circulating water systems	Dr. Boonrod
6	21/02	Power plant components (Continue)	Dr. Boonrod
7	28/02	Power plant components (Continue)	Dr. Boonrod
8	6/03	Power plant components: (Continue)	Dr. Boonrod
9	13/03	Midterm Exam	Dr. Boonrod/ Dr. Nakorn
10	20/03	Coal-fired power plant technologies	Dr. Boonrod
11	27/03	Gas turbine power plants/Geothermal power plant	Dr. Boonrod
13	3/04	Combined Cycle Power Plant	Dr. Athikom
14	10/04	Economics of power generation	Dr. Athikom
15	17/04	Environmental impact & Emission control and flue gas treatment systems	Dr. Nakorn
16	24/04	Student Presentation (Tentative)	Dr. Athikom/ Dr. Nakorn/ Dr. Boonrod

Grading

Report & Presentation	25	% (Group Work)
Midterm Examination	35	% (open book exam)
Final Examination	40	% (open book exam)