

# Syllabus

## Energy Process Engineering and Management

Course Name	Course type (credit/hours)		전선(3/3)		Course code	
	Target students Division/major/grade		에너지시스템 학과/6학년		Opening semester	2018년 1학기
	Class time and classroom		목1(전109) 목2(전109) 목3(전109)(전109)			
Reference to this course	Related basic courses		Power System , Electromagnetics, Circuit Analysis			
	Recommended concurrent courses		Electric Power System Engineering			
	Related advanced courses					
Instructor	Name (title/division)		정재성 (조교수/에너지시스템 학과)			
	Office Room Number	에너지센터 210호	Office phone Number	2695	e-mail	jjung@ajou.ac.kr
	Office hours			Homepage address		
Teaching Assistant	Name (title/division)					
	Office Room Number		Office phone Number		e-mail	

### 1. Introduction

This class deals with the technical and economic operation of modern power systems. This class addresses the technical issues of transmission control, frequency control, and operations of distribution systems. The economic operation of the power system is also investigated. The class focus on the interdependency of economic and technical aspects of the development and operation of modern power systems. The topics covered include: fault calculation, economic dispatch, contingency analysis, state estimation, and etc.

### 2. Course Objectives

### 3. Class types and activities

lecture and discussion

#### 4. Teaching Method

lecture and discussion
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#### 5. Knowledge and ability required for taking this course

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#### 6. Method of Evaluation

Evaluation Item	The Number of Times	Evaluation Proportion	Remarks
Attendance		20	
midterm exam		30	
final exam		50	
quiz			
presentation			
discussion			
homework			
etc			

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## 7. Textbooks

Main/Sub	Title	Writer	Publisher	Publication year
주교재	Power Systems Analysis	John Grainger	McGraw-Hill Education	2015
부교재	Power Systems Analysis	Arthur R. Bergen	Pearson	1999

## 8. Lecture Schedule

Week	Lecture contents	Lesson type	Remark
1	Introduction of power system engineering		
2	Symmetrical Faults		
3	Symmetrical Faults		
4	Symmetrical Components and Sequence Networks		
5	Symmetrical Components and Sequence Networks		
6	Unsymmetrical Faults		
7	Unsymmetrical Faults		
8	Term Project		
9	Economic Operation of Power Systems		
10	Economic Operation of Power Systems		
11	Contingency Analysis		
12	Contingency Analysis		
13	State Estimation of Power Systems		
14	State Estimation of Power Systems		
15	Power System Stability		
16	Final Exam		

## 9. Others