

# Syllabus

## Introduction to Energy Systems

Course Name	Course type (credit/hours)		전필(3/3)		Course code	
	Target students Division/major/grade		/		Opening semester	
	Class time and classroom		수1(전109) 수2(전109) 수3(전109)(전109)			
Reference to this course	Related basic courses					
	Recommended concurrent courses					
	Related advanced courses					
Instructor	Name (title/division)		김형택 (교수/ 대 학원에너지시스템 학부)			
	Office Room Number		Office phone Number	2321	e-mail	htkim@ajou.ac.kr
	Office hours		Homepage address			
Teaching Assistant	Name (title/division)					
	Office Room Number		Office phone Number		e-mail	

### 1. Introduction

#### Course Overview

- 1) This course is designed to convey the ideas of basic elements of the system and define and establish the concepts of simple energy system. The concept is expanded to advanced ideas of complex energy system.
- 2) Objective function and boundary conditions for the designing the several energy systems are identified to develop the analytical capabilities of typical energy systems.
- 3) Such concept and analytical methodologies are exercised in the explanation of elements and characteristics of energy system in the fields of energy engineering, energy science, energy economy and energy policy.

### 2. Course Objectives

### 3. Class types and activities

#### 4. Teaching Method

Basic principles & application principles on each chapter are introduced by Lecturer and encourage the student's participation on the discussion

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

#### 6. Method of Evaluation

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

가. 중간고사 : 45% 나. 기말고사 : 45% 다. 출석 : 10% 라. 보고서 : 마. Quiz : 바. 세미나 :  
사. 기타(프로젝트 등):

Evaluation

Mid-terms: 45%. Final exams: 45%. Attendance: 10%.

## 7. Textbooks

Main/Sub	Title	Writer	Publisher	Publication year
주교재	강사진들이 배부하는 강의노트 Textbooks& Lecture notes			
부교재	Energy Systems Engineering : Evaluation and Implementation	Vanek, Albright and Angenent	McGraw-Hill Co.	2012
참고자료	Design and Optimization of Thermal Systems	Yogesh Jaluria	McGraw-Hill Co.	1998

## 8. Lecture Schedule

Week	Lecture contents	Lesson type	Remark
1	Introduction, Engineering Design		
2	Energy System : definition		
3	Energy System : design, consideration		
4	Energy System : modelling		
5	Fossil Fuel Resources		
6	Fossil Energy Systems		
7	Stationary Combustion Systems		
8	Mid-term Exam		
9	Renewable Energy Resources		
10	Solar Energy Technologies		
11	Hydrogen and Fuel Cell Systems		
12	Transportation Energy Technologies		
13	Economic Perspectives of Energy Systems		
14	Energy Demand-Supply Systems		
15	Energy Pricing Systems		
16	Final-Exam		

9. Others

1학기 이상학생 수강
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