

Syllabus

Mathematical Methods for Energy Problems

Course Name	Course type (credit/hours)		전선(3/3)		Course code	
	Target students Division/major/grade		/		Opening semester	2018년 1학기
	Class time and classroom		월8(전109) 월9(전109) 월10(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

This course designed to teach the advanced application of mathematical theory in energy field. Energy issues are modeled with the methodologies of linear systems, partial differential equation, numerical analysis, probability and statistics. Mathematical knowledge and skills will be taught to identify the energy problems. The faculty of the Energy Studies will teach this course with the concept of co-operating nuclear power systems, energy conversion systems, energy policy systems to deliver the knowledge of economic and practical method when dealing with the real energy problems.

2. Course Objectives

3. Class types and activities

4. Teaching Method

물리적의미중심의요점정리식강의와문제풀이
확률분포,구간추정,가설검정,회귀모형에대한통계적설명

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 : 40 나. 기말고사 : 40 다. 출석 : 라. 보고서 : 20 마. Quiz: 0 바. 세미나 : 0 사.기타(프로젝트등): 0

Mid-term : 40%
Final : 40%
Report : 20%

7. Textbooks

Main/Sub	Title	Writer	Publisher	Publication year
	강사진들이 배부하는 강의노트 Textbooks& Lecture notes			

8. Lecture Schedule

Week	Lecture contents	Lesson type	Remark
1	최적화 및 수리계획 기초 Introduction		
2	선형계획법의 기초이론 Linear Analysis		
3	Simplex법 Simplex Theort		
4	쌍대이론 및 해석		
5	에너지문제의 미분방정식 DE in Energy Problem		
6	열전달 문제의 미분방정식 DE in Heat Transfer		
7	정상상태의 보존방정식 Conservation Equation		
8	중간고사 Mid-term Exam		
9	유한차분법 및 응용 Finite Differential Analysis		
10	유한차분법 및 응용 Finite Differential Analysis		
11	Monte Carlo 기법 Monte Carlo Analysis		
12	신뢰도 모델링 Modelling of Confidence Level		
13	확률 및 분포 Probability & Distribution		
14	통계적 신뢰구간추정 Statistical Estimation of Confidence Level		
15	가설검정 및 GAUSS 프로그램 사용법 회귀분석과 응용 Gauss Program		
16	기말고사 Final Exam		

9. Others

--