

北海道大学シラバス

■■ 科目名 Overview of Energy Technology and Policy(エネルギー技術・政策E)					
■■ 講義題目 (Blank)					
■■ 責任教員(所属) 近久 武美(大学院工学研究院)					
■■ 担当教員(所属) 近久 武美(大学院工学研究院) 田部 豊(大学院工学研究院) 森 治嗣(大学院工学研究院) 村井 祐一(大学院工学研究院)					
■■ 科目種別				■■ 他学部履修等の可否	可
■■ 開講年度	2015	■■ 期間	1学期(夏ターム)	■■ 時間割番号	092573
■■ 授業形態	講義	■■ 単位数	1	■■ 対象年次	~
■■ 対象学科・クラス				■■ 補足事項	
■■ ナンバリングコード	ENG 6672				
■■ 大分類コード	■■ 大分類名称				
ENG	工学部(工学部専門科目※情報エレクトロニクス学科専門科目を除く), 工学院(工学院授業科目)				
■■ レベルコード	■■ レベル				
6	大学院(修士・専門職)専門科目(発展的な内容の科目、研究指導科目)				
■■ 中分類コード	■■ 中分類名称				
6	エネルギー環境システム専攻				
■■ 小分類コード	■■ 小分類名称				
7	エネルギー環境システム専攻				
■■ 言語コード	■■ 言語				
2	日本語及び英語のバイリンガル授業、受講者決定後に使用言語(日本語又は英語)を決定する授業				

■■ キーワード

Energy, Renewable Energy, Nuclear Energy, Environment, Economy, Policy

■■ 授業の目標

One of the critical issues for human beings is global warming, and development of advanced energy technology is strongly required. This course introduces a variety of energy technologies as well as social issues relating to energy problems. Students will obtain general knowledge of the energy technologies and will see the difficulties in this field due to the unique characteristics of the energy issues. The lectures are given by four instructors who major in nuclear engineering, fluid dynamics, fuel cell, distributed energy system, and energy policy analysis. Students will be able to hear details in these research fields. It should be noted, however, that the course provides a general overview, thus it is not suited for the students who are expecting specific subject organized with scientific structures. Important requirements for students in this course are attendance and active participation in discussion.

■■ 到達目標

Understanding energy and environmental issues, and having attitude to have ideas to solve these problems.

## ■ ■ 授業計画

1. Environment and energy issues and their relationships
2. Advanced power plants and nuclear engineering for higher efficiency
3. Renewable energy technology
4. Energy saving technology for ocean vessels
5. Cogeneration system for distributed energy
6. Fuel cell technology and their potential
7. CCS (Carbon dioxide Capture and Storage) for zero CO2 emissions

## ■ ■ 準備学習(予習・復習)等の内容と分量

Active participation into the class discussion is very important.

## ■ ■ 成績評価の基準と方法

50%: Class participation  
10%: Involvement in discussion  
40%: Reports

## ■ ■ テキスト・教科書

There is no textbook for this course. Instructors will use Power Point figures in the lecture, and they will be provided to students in printed form as reference.

## ■ ■ 講義指定図書

There is no textbook for this course. Instructors will use Power Point figures in the lecture, and they will be provided to students in printed form as reference.

## ■ ■ 参照ホームページ

## ■ ■ 研究室のホームページ



















































## ■ ■ 備考

基本的に英語による授業を想定していますが、全員が日本人学生の場合には日本語による講義といたします。

## ■ ■ 更新日時

2015/02/09 10:15:08

## Hokkaido University Syllabus

  Course Title					
Overview of Energy Technology and Policy					
  Subtitle					
  Instructor (Institution)					
Takemi CHIKAHISA(Faculty of Engineering)					
  Other Instructors (Institution)					
Takemi CHIKAHISA(Faculty of Engineering) Yutaka TABE(Faculty of Engineering) Michitsugu MORI(Faculty of Engineering) Yuichi MURAI(Faculty of Engineering)					
  Course Type				  Open To Other Faculties / Schools	OK
  Year	2015	  Semester	1st Semester (Summer Term)	  Course Number	092573
  Type of Class	Lecture	  Number of Credits	1	  Year of Eligible Students	~
  Eligible Department / Class				  Other Information	
  Numbering Code	ENG 6672				
  Major Category Code	  Major Category Title				
ENG	Engineering, Graduate School of Engineering				
  Level Code	  Level				
6	Specialized Subjects (advanced) in graduate level (Master's Course and Professional Course)				
  Middle Category Code	  Middle Category Title				
6					
  Small Category Code	  Small Category Title				
7					
  Language Code	  Language Type				
2	Classes are in Japanese and English (bilingual, or language is decided once the student composition has been finalized.				

  Key Words

Energy, Renewable Energy, Nuclear Energy, Environment, Economy, Policy

  Course Objectives

One of the critical issues for human beings is global warming, and development of advanced energy technology is strongly required. This course introduces a variety of energy technologies as well as social issues relating to energy problems. Students will obtain general knowledge of the energy technologies and will see the difficulties in this field due to the unique characteristics of the energy issues. The lectures are given by four instructors who major in nuclear engineering, fluid dynamics, fuel cell, distributed energy system, and energy policy analysis. Students will be able to hear details in these research fields. It should be noted, however, that the course provides a general overview, thus it is not suited for the students who are expecting specific subject organized with scientific structures.

## ■ ■ Course Goals

Understanding energy and environmental issues, and having attitude to have ideas to solve these problems.

## ■ ■ Course Schedule

1. Environment and energy issues and their relationships
2. Advanced power plants and nuclear engineering for higher efficiency
3. Renewable energy technology
4. Energy saving technology for ocean vessels
5. Cogeneration system for distributed energy
6. Fuel cell technology and their potential
7. CCS (Carbon dioxide Capture and Storage) for zero CO<sub>2</sub> emissions

## ■ ■ Homework

Active participation into the class discussion is very important.

## ■ ■ Grading System

50%: Class participation  
10%: Involvement in discussion  
40%: Reports

## ■ ■ Textbooks

There is no textbook for this course. Instructors will use Power Point figures in the lecture, and they will be provided to students in printed form as reference.

## ■ ■ Reading List

There is no textbook for this course. Instructors will use Power Point figures in the lecture, and they will be provided to students in printed form as reference.

## ■ ■ Websites

## ■ ■ Website of Laboratory

## ■ ■ Additional Information

## ■ ■ Update

2015/02/09 10:15:10