基本情報

時間割コード／Course Code	
開講区分(開講学期)／Semester	Fall and Winter Term
曜日・時間／Day and Period	Fri5
開講科目名／Course Name (Japanese)	環境・エネルギー問題に対する工学的アプローチ
開講科目名(英)／Course Name	Engineering Approaches to Energy and Environmental Issues
教室／Room	#CALC!
定員／Capacity	
ナンバリング／Course Numbering Code	#CALC!
必修･選択／Required/Optional	
授業形態／Type of Class	講義科目
単位数／Credits	2
年次／Student Year	
分野／Field	
担当教員／Instructor	MACHIMURA Takashi
メディア授業科目／Course of Media Class	

詳細情報

授業サブタイトル／Course Subtitle	
開講言語／Language of the Course	English
学習方法／Learning Method	聴講・視聴
授業の目的と概要／Course Objective	In this century, we are facing serious energy and environmental problems such as energy source depletion, climate change, etc. Many kinds of innovative technologies to solve these problems are studied and developed. In the present course, these problems and countermeasures will be presented and discussed from various points of view.
履修条件・受講条件／Requirement / Prerequisite	
出欠席及び受講に関するルール／Attendance and Student Conduct Policy	
教科書・指定教材／Textbooks	There is no assigned textbook. Materials will be distributed in the classroom.
参考図書・参考教材／Reference	
成績評価に関する補足情報／Additional Information on Grading	
合理的配慮／Reasonable Accommodation	#REF!
特記事項／Special Note	
オフィスアワー／Office Hour	
実務経験のある教員による授業科目／Course conducted by instructors with practical experience	

成績評価詳細情報

学習目標(1)／Learning Goal(1)	To be able to explane and discuss the causes, current states, and countermeasures of energy and environmental problems.
学習目標(2)／Learning Goal(2)	
学習目標(3)／Learning Goal(3)	
学習目標(4)／Learning Goal(4)	
学習目標(5)／Learning Goal(5)	

	評価方法				
学習目標／Learning Goal	レポート・論文				
学習目標(1)／Learning Goal(1)	○				
学習目標(2)／Learning Goal(2)					
学習目標(3)／Learning Goal(3)					
学習目標(4)／Learning Goal(4)					
学習目標(5)／Learning Goal(5)					
評価割合(%)／Grade Breakdown	100%	%	%	%	%

授業計画

回／Time	題目／Title	内容／Content	授業時間外学習／Independent Study Outside of Class
第1回	Human-friendly Radiation Therapy; BNCT (Isao Murata, Prof.)	Cell selective particle therapy for cancers, boron neutron capture therapy (BNCT)	To review related information and to prepare a report.
第2回	Safety and Advancement of nuclear power plant (Takanori Kitada, Prof.)	How to ensure, evaluate and improve the safety of NPP	To review related information and to prepare a report.
第3回	Next Generation Nuclear Energy System (Eiji Hoashi, Assoc. Prof.)		To review related information and to prepare a report.
第4回	Magnetic force control technology for environmental preservation and resource recovery (Yoko Akiyama, Assoc. Prof.)	Magnetic force control technology for environmental preservation and resource recovery	To review related information and to prepare a report.
第5回	Isotope effects in chemical reactions (Chizu Kato, Assist. Prof.)	Understand the chemical reactions of isotope in nature	To review related information and to prepare a report.
第6回	Biomass as Future Resource (Michihiko Ike, Prof.)	Potential of biomass as the future resource will be discussed, especially focusing on aquatic plant biomass.	To review related information and to prepare a report.
第7回	New materials for future energy (Yuji Ohishi, Assoc. Prof.)		To review related information and to prepare a report.
第8回	Climate change and energy management (Yohei Yamaguchi, Assoc. Prof.)	Background on climate change will be provided based on the IPCC's Sixth Synthesis Report, followed by a discussion of how energy management can contribute to climate change mitigation.	To review related information and to prepare a report.
第9回	Environmental Pollution in the Atmosphere (Hikari Shimadera, Assoc. Prof.)	Overview of Atmosphere, Air Pollution, and Air quality modeling	To review related information and to prepare a report.
第10回	Opportunities and Challenges for Power-to-X Technologies (Yu Katayama, Assoc. Prof.)		To review related information and to prepare a report.
第11回	Civil and Environmental Engineering Informatics (Nobuyoshi Yabuki, Prof.)		To review related information and to prepare a report.

第12回	Waste management toward circular economy (Toyohiko Nakakubo, Assoc. Prof.)	Waste management initiatives, development of indicators for circular economy	To review related information and to prepare a report.
第13回	Detection of urban structure from satelite image (Masanobu Kii, Prof.)		To review related information and to prepare a report.
第14回	Ecosystem services and human-wildlife conflicts (Takashi Machimura, Assoc. Prof.)	Following the review of ecosystem services as the fundamentals of human society, actual cases of human-wildlife conflicts will be presented and discussed.	To review related information and to prepare a report.
第15回	Various Applications of UV Imaging (Nobuhiko Sarukura, Prof.)	Applications include the evaluation of new laser, optical materials, minerals and ceramics.	To review related information and to prepare a report.

授業担当教員

教員氏名／Instructor Name	ふりがな／Name (hiragana)	所属・職名・講座名／Affiliation, Title, Course	居室／Office	内線／Extension	e-mail／E-mail
MACHIMURA Takashi	まちむら　たかし	Graduate School of Engineering			