Second Semester 2017
CAREN Lecture Series for OUSSEP

ENERGY AND ENVIRONMENT: A MULTIDISCIPLINARY APPROACH TOWARDS WORLD'S ENERGY CRISIS

Course Code: 881216
Friday 2nd period
Room A110, Graduate School of Information Science and Technology (Suita)

Contact: contact@caren.eng.osaka-u.ac.jp

Course Objective:

This is a special relay lecture course, conducted by five graduate schools at the university, namely Graduate School of Engineering, Graduate School of Engineering Science, Graduate School of Information Science and Technology, Graduate School of Science and the Osaka School of International Public Policy, comprising the Center for the Advancement of Research and Education Exchange Network (CAREN).

The objective of the course is to offer students with the diverse academic expertise available at the university in order to explore and identify the challenges of addressing the global demand on energy and its impact on the environment. As such, this course will take a multidisciplinary approach, providing students with both depth and breadth of knowledge about energy issues to understand the nature of the global challenge and to think of ways to meet the challenge.

Learning goals:

—Understand: Cultivate skills to understand the complex nature of the world's energy problems and its impact on the environment by studying it from different levels and realms.
—Analyze: Acquire critical thinking skills and analytical mind.
—Problem solving: engage in creative thinking for problem solving by utilizing the interdisciplinary approach.
—Convey: Learn clear, concise and Effective presentation skills.

Requirement Prerequisite:

There are no prerequisite to this course, but the students are expected to be inquisitive, open-minded as well as eager to engage in critical thinking.

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Course Plan (topics and their order are subject to change):

1	Oct. 6	**Course Guidance** Ryogo YANAGIDA (Sch. Eng.) and Hiroshi KANAZAWA (Sch. Sci.)
2	Oct. 13	**Sustainable energy and environment from a viewpoint of International politics** Haruko SATOH, OUSIP, International politics
3	Oct. 20	**Solar and geo-thermal energy** Kiyoshi FUJITA, Sch. Eng., Geo-chemistry and physics
4	Oct. 27	**Wind and marine current energy** Hiromichi AKIMOTO (Sch. Eng.), Naval architecture and ocean engineering
5	Nov. 10	**Bio-energy** Hiroshi KANAZAWA (Sch. Sci.), Biology
6	Nov. 17	**Biofuel and bio-mass** Sastia Putri (Sch. Eng.), Biotechnology
7	Nov. 24	**Nuclear energy** Takanori KITADA (Sch. Eng.), Sustainable Energy and Environmental Engineering
8	Dec. 1	**Understanding Principle of Spatial Formation in Japanese Cities from the Aspect of Water System** Michihiro KITA (Sch. Eng.), Architectural Engineering
9	Dec. 8	**Climate change (tentative title)** Lecturer announced later
10	Dec. 15	**Human communication and language** Ryogo YANAGIDA (Sch. Eng.), Sociolinguistics
	(Dec. 22	No class (Replaced with Jan. 12)
12	Jan. 5	**Panel discussion or Q&A session**: “What future for a cleaner society?”
13	Jan. 12	**Field trip to renewable energy sites in Awaji Island** Wind power plant, solar panel, Naruto sea swirl (max current at 15:40) No other classes due to the preparation of exam rooms for the National Center Test for University Admission(センター試験) in the weekend
13	Jan. 19	**Group Presentation 1**
14	Jan. 26	**Group Presentation 2**
15	Feb. 2	**Group discussion & wrap up**

Textbooks:

References will be introduced throughout the course.

Grade Policy:

Class participation 60%

Attendance for 14 classes except the first introductory one (5%):

0-5 attendance -> 0 point

6-8 attendance -> 1 points

9-11 attendance -> 3 points

12-14 attendance -> 5 points

Quiz or Homework by each lecture (55%)

Presentation 40%

Evaluations by lectures (20%) and students (20%)

Course Information:

will be either/both on CLE (https://cle.koan.osaka-u.ac.jp/)