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# Outline of KUINEP English Classes

## **1. Kyoto University International Education Program (KUINEP)**

Kyoto University International Education Program (KUINEP) is designed for undergraduate students whose institutions have a student exchange agreement with Kyoto University. KUINEP is NOT a Japanese language study program, and it is aimed to deepen students' knowledge and understanding of Japan and its culture in English.

## **2. KUINEP academic calendar**

KUINEP is essentially a one-year program, consisted of two semesters as follows:

Fall semester: October 1 to March 31 in the following year

Spring semester: April 1 to September 30

For further details, see "KUINEP Academic Calendar."

## **3. KUINEP classes**

KUINEP provides undergraduate level lectures in English to exchange students along with Kyoto University students. KUINEP classes cover diverse subjects such as life science, environmental studies, agriculture, statistics, physics, economics, politics, and social studies.

KUINEP students are in principle required to take six KUINEP classes per semester. Each class comprises two hours of lecture per week and runs fifteen weeks. Students earn two university credits for each class when they complete it.

## **4. Grading and credits**

Final grades are based on attendance, research papers, etc. as mentioned in the syllabus. Details are announced in the first lecture of each class.

Official transcript, including a list of class titles, grades, and credits, is reported both to the students and to their home institutions at the end of each semester\*. Since credit transfer from KUINEP classes is arranged solely by their home universities, exchange students must carefully consult this matter with the staff concerned at their home institutions.

\* Fall semester: official transcripts are issued in the end of March.

Spring semester: official transcripts are issued in the end of September.

## **5. Japanese language classes**

KUINEP students are allowed to take Japanese language classes. Students earn one university credit for each class when they complete it.

**KUINEP Academic Calendar**  
(Spring semester 2014, Fall semester 2014,)

**Spring Semester, 2014 (April 2014-September 2014)**

Students arrive at Kyoto	April 1, 2, 3, 2014
Orientation for KUINEP	April 4 and 7, 2014
Classes start	April 8, 2014
Classes end	July 22, 2014
Japanese Language Classes end	Beginning of August 2014
Summer Vacation	August and September 2014

**Fall Semester, 2014 (October 2014-March 2015)**

Classes start	October 8, 2014
Winter Vacation	December 27, 2014 - January 4, 2015
KUINEP English Classes end	January 27, 2015
Japanese Language Classes end	Beginning of February 2015

\*No classes on the following days:

**National Holidays**

Day of Showa	April 29, 2014
Children's Day	May 5, 2014
(Substitute Public Holiday) Constitution Memorial Day	May 6, 2014
Marine Day	July 21, 2014
Health-Sports Day	October 13, 2014
Respect for the Aged Day	September 15, 2014
Autumnal Equinox Day	September 23, 2014
Culture Day	November 3, 2013
(Substitute Public Holiday) Labor Thanksgiving Day	November 24, 2013
Emperor's Birthday	December 23, 2013
Coming of Age Day	January 12, 2014
National Foundation Day	February 11, 2014
Vernal Equinox Day	March 21, 2014

**Others**

University Festival Day	November 21-25, 2014
University Foundation Day	June 18, 2014

# **Spring Semester 2014**

**Timetable of KUINEP English Classes**  
**for Spring Semester 2014**

Day Time	Mon.	Tue.	Wed.	Thr.	Fri.
I 8:45   10:15		Excercise and Medical Science for Prevention of Lifestyle-related Disease	Japanese Religious Traditions II	Universities and University Students in Today's Japan	
II 10:30   12:00	Development Economics II	Social Science Research Methods in Education II	Global Business Strategy ----- Southeast Asian Comparative Politics ----- Fundamentals of Informatics		Life Science II
III 13:00   14:30	Modern Physics		Introduction to Japanese History I		Energy and Resources II ----- Modern Japanese Society I
IV 14:45   16:15				Japanese Culture I	
V 16:30   18:00	Japanese Economic History	Entrepreneurship		Building a Sustainable Future : Principles and Challenges	

# 1. DEVELOPMENT ECONOMICS B

## ---- International Trade and Financial Market

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**THEME** International trade and financial markets, their role in the economic development

**LECTURER** **Junichi MORI**  
(Professor, The Organization for the Promotion of International Relations)

### **COURSE OVERVIEW**

International trade and financial markets play a significant role as developing countries try to develop their economies and catch up with the industrialized countries. This course will deal with the role international trade and financial markets play in the economic development of developing countries.

- 1) It is often the case that there is a considerable benefit for countries participating in trade on an international scale. Why is this the case? We will learn about the comparative advantage theory which is the supporting idea of the free trade.
- 2) From the 1960s to the 70s, the Latin American countries pursued an import substitute policy, which resulted in the inefficient protection of domestic industries. As a result, more liberalized policies were adopted in the 90s. In comparison, East Asian countries succeeded by pursuing export-led economic development through aggressively courting direct investment. Such an experience seems to indicate that an export-led industrial policy leads to successful economic development. But what are the factors that are indispensable to success?
- 3) The world seems to be moving, on the one hand, towards multilateral arrangements for trade liberalization led by the WTO, and on the other, towards bilateral or regional arrangements such as the creation of free trade areas (FTA). What benefits and problems do these arrangements bring to developing countries?
- 4) As the real economy internationalizes and economies develop, developing countries need funds from the domestic and international financial markets. For example, East Asian economies enjoy high savings rates, which was the key to their rapid growth in the 90s. In this process, informal finance has played an important role. We will look at informal and formal finance systems of the Asian countries.
- 5) At the end of the course we will study the case of Vietnam from the viewpoints of rural development, trade and finance based on the recent data.

The course will be interactive. Reports of the World Bank and other materials for the following class will be introduced or distributed during each class. Attendants must study the material before each class and will be expected to participate in active discussions. Two papers will be required during the course.

Evaluation will be made based on participation in the discussions during class and the written paper.

## **TOPICS**

1. International trade and economic development
2. Theory of comparative advantage
3. Industry policy for development
4. WTO and FTA
5. Development and finance
6. Case study: Vietnam

## **REFERENCE BOOKS**

Bhagwati, Jagdish *Free Trade Today*, Princeton paperbacks, 2002  
Krugman, Paul and Maurice Obstfeld, *International Economics*, Addison Wesley, 2003  
Ray, Debraj, *Development Economics*, Princeton, 1998  
Yujiro Hayami, *Development Economics*, Oxford, 2005

## **INSTRUCTOR'S PROFILE**

**Junichi MORI** Vice President for International Relations

(Professor & Director General, Organization for Promotion of International Relations, Kyoto University)

Professor Mori is Vice President for International Relations since April 2009 and Director General of the Organization for Promotion of International Relations (“OPIR”) of Kyoto University since April 2009. Before he joined IC of Kyoto University in April 2004, he worked at the Bank of Tokyo-Mitsubishi and Institute for International Monetary Affairs and was engaged in the financial business and research. Professor Mori has worked for various development assistance projects for Asian countries. He currently lectures in Development Economics at the International Center of Kyoto University. He is very active in promoting international student exchange and was a member of the University International Strategy Council of the JSPS (Japan Society for the Promotion of Science). His recent paper is “G30 and its implication for Japan” (Ronko, The International Center Research Bulletin vol.1, 2011)

Publications in English:

“Development of Capital Markets and Surveillance in East Asia with Particular Reference to Bond Markets” (Feb. 2002, published in the IIMA’s report “Strengthening Financial Cooperation and Surveillance” for the Kobe Research Project commissioned by Ministry of Finance Japan)

Policy Suggestions in "Executive Summary of Research Papers and Suggestions of Kobe Research Project" (May 2002, published in the IIMA’s report “Executive Summary of Research Papers and Policy Recommendations” for the Kobe Research Project )

“China’s WTO accession and its impact on China’s financial system” (Feb. 2003, presented at the international symposium on China’s economic development and structural change in East Asia in commemoration of the foundation of Shanghai Center for Economic Research, Kyoto university)

## **2. MODERN PHYSICS**

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**THEME**        The purpose of this course is to introduce engineering and science students to the foundations and principles of modern physics, specifically quantum mechanics and its applications.

**LECTURER**    **Masayasu AOTANI<sup>†</sup>**  
(Associate Professor, The Organization for the Promotion of International Relations)

### **COURSE OVERVIEW**

We will study the main concepts of quantum mechanics developed since the turn of the 20th century. The overall learning objective is to acquire the contextualized knowledge and analytic skills necessary to construct an understanding of phenomena in the domain of quantum mechanics. To this end, we will cover the following topics.

### **TOPICS**

1. Crises in Classical Physics
2. Planck and Blackbody Radiation
3. Einstein and Photoelectric Effect
4. Compton and Rutherford Scattering
5. Bohr Model
6. DeBroglie's Matter Waves
7. Birth of Quantum Mechanics
8. Schroedinger Equation
9. Square Well Potential
10. Scattering in One dimension
11. Simple Harmonic Oscillator
12. Electron Spin
13. Spectroscopy
14. Other Applications

### **GRADING POLICY**

There will be a final examination. Many questions will be based on the homework assignments.

### **PREREQUISITE**

This course is not suitable for upper division students.

## **SUGGESTED REFERENCE**

“Quantum Physics: Of Atoms, Molecules, Solids, Nuclei, and Particles” by Robert Martin Eisberg and Robert Resnick

John Wiley & Sons; ISBN: 047187373X; 2nd edition (January 1985)

## **REFERENCE**

To be announced in the class

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## **INSTRUCTOR'S PROFILE**

**Masayasu AOTANI** Ph.D. Ed.D.: Personal Profile

(Associate Professor, The Organization for the Promotion of International Relations)

I was born in 1954 in Osaka, Japan, where I spent the first 18 years of my life. I graduated from Kyoto University in 1978 with a BS in Chemistry and entered the graduate program in Chemistry at Kyoto University. However, midway through the first year of my graduate study, I decided to move to the United States. I spent 10 years on the East Coast and another 10 on the West Coast.

While in the States, I attended 5 graduate schools and worked both in academia and industry. Among the graduate schools I attended were the University of Maryland (Chemistry), Princeton University (Chemistry and Physics), the City College of New York (Physics and Mathematics), and the University of California at Berkeley (Mathematics). I have a Ph.D. in Mathematics from the University of California at Berkeley. My industry experience ranged from public relations to a stint as a software trainer in Silicon Valley.

I came back to my alma mater about 10 years ago and have been dividing my time between math/sciences and SLAS (Second Language Acquisition Studies) since then. As my second doctorate is an Ed.D. in TESOL (Teaching English to Speakers of Other Languages) from Temple University, you should not have any trouble understanding my English, needless to say.

On a lighter note, at the age of 58, I may be the oldest skateboarder you see on campus. I am also a big fan of insects. NINL! (No insects, no life!)

## **4. JAPANESE ECONOMIC HISTORY**

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**LECTURER**    **Pierre-Yves DONZE**

(Associate Professor, Hakubi Center)

### **OBJECTIVES**

This course is an introduction to the economic history of modern Japan. It offers an overview of the development of Japanese economy from industrialization to the 1980s, emphasizing the relation with the global economic system (foreign trade, technology transfer, foreign companies in Japan) and the role of the State (economic policy). The objective is to understand how Japan became the second industrial nation of the world in the 1960s.

### **TOPICS**

1. Introduction
2. The Japanese economy during the Edo period
3. The Western impact I : the opening of Japan to the world economy
4. The Western impact II: introduction of foreign technologies
5. The Western impact III: the example of the cotton industry
6. Imperialism and industrialization I: integration into the global economy
7. Imperialism and industrialization II: foreign multinationals in Japan
8. Imperialism and industrialization III: the zaibatsu
9. Imperialism and industrialization IV: the economical integration of colonies
10. The afterwar reforms
11. High-growth years I: towards the second industrial nation
12. High-growth years II: the Japan Business System
13. High-growth years III: Japan and globalization
14. High-growth years IV: the bubble economy
15. General conclusion and discussion

### **ASSESSMENT**

Assessment will be determined by the following criteria:

- (1) Class attendance and participation 20%
- (2) Report 40%
- (3) Presentation 40%

Students will make an oral presentation and write a report (minimum 2000 words, printed on A4 sheets) on an aspect of Japanese economic history covered in class.

### **REFERENCE BOOKS**

Takafusa Nakamura, Konosuke Odaka (eds), 『The economic history of Japan: 1600-1990』 (Oxford University Press, 3 vol. 2003-2004.) , Hiroyuki Odagiri and Akira Goto 『Technology and Industrial Development in Japan』 (Oxford University Press, 1996) ,

### **3. Exercise and Medical Science for Prevention of Lifestyle-related Disease**

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**THEME** Exploring the Current Knowledge Concerning the Etiology of Lifestyle-related Disease and Its Prevention

**LECTURER** **Toshio MORITANI**  
(Professor, Graduate School of Human and Environmental Studies)

#### **COURSE OVERVIEW**

This course is designed to describe the current knowledge concerning the etiology of lifestyle-related disease. Exercise and dietary countermeasures will be discussed.

Japanese daily energy intake per person reached a peak value of 2,226 Kcal in 1975 and has since dramatically dropped to 1,902 Kcal in 2004 which is nearly identical to the values immediate post World War II. However, obesity has sharply increased despite this dramatic decline in energy intake. This may be, in part, the result of a “relative energy surplus” caused by a *decline in energy expenditure* far exceeding *the decreased energy intake* due to modern industrialization. Bray has proposed the “MONA LISA” hypothesis, an acronym for *Most Obesities kNown Are Low In Sympathetic Activity* indicating that obesity is associated with a relative or absolute reduction in the activity of the thermogenic component of the sympathetic nervous system. It is now well recognized that “middle age obesity” is strongly associated with a depressed autonomic nervous system (ANS) activity and aging, particularly the sympathetic thermogenic responses to a high-fat diet and irregular food intake pattern.

Our series of studies have suggested a potential reversibility in ANS activity regulating fat metabolism and appetite control by regular exercise training in middle aged individuals and obese children with depressed ANS activity.

In other words habitual exercise plays a vital role in enhancing not only fat and glucose metabolism, but also ANS activities in the prevention of obesity and appetite control. Recent studies have clearly indicated that exercising obese individuals have a much lower mortality rate and incidence of diseases than lean individuals with little or no exercise. A possible explanation could be due to the effects of exercise on immune functions and myocytokines in preventing and improving of lifestyle-related diseases.

#### **TOPICS**

Our discussion will cover, among others, the following topics:

1. Modern Lifestyle and Hypokinetic Disease
2. A Lesson from NASA Astronaut Experiments
3. Why Do We Get Fat? Etiology of Human Obesity
4. Obesity, Hypertension, Diabetes and Hyperlipidemia: The “Deadly Quartette”
5. Stress and Lifestyle-related Disease
6. Why is the President of the USA jogging?
7. Why Exercise Can Prevent Heart Attack, Diabetes, Cancer and Other Disease
8. Nutrition, Exercise and Aging
9. Exercise and Mental Health

## **GRADING**

Grades will be based on: (i) attendance, (ii) class activities, and (iii) a term paper.

## **PREREQUISITE**

A minimum knowledge of Human Biology and Physiology is required.

## **COMMENTS**

In the class, PowerPoint presentations will be used. Students are required to read the assigned papers and articles, and are encouraged to make their own research using the Internet and other resources available.

## **REFERENCES**

Reading materials and assigned articles will be posted in the form of PDF files on Website <http://morichan.jinkan.kyoto-u.ac.jp/>

## **INSTRUCTOR'S PROFILE**

### **Toshio MORITANI**

(Professor, Graduate School of Human and Environmental Studies)

Toshio Moritani was born in Japan in 1950. He received his Ph.D. degree in Sports Medicine from the University of Southern California in 1980. He is currently Professor of Applied Physiology at the Graduate School of Human and Environmental Studies at Kyoto University. Dr. Moritani is the Editor of the *Journal of Electromyography and Kinesiology* and *European Journal of Applied Physiology*. He has published 36 books, book chapters and more than 240 research papers in the peer reviewed international and Japanese scientific journals.

## **4. SOCIAL SCIENCE RESEARCH METHODS IN EDUCATION II**

**THEME** Investigating Japanese Education through Conducting Social Scientific Research

**LECTURER** Junko KAWAI  
(Associate Professor, The Organization for the Promotion of International Relations)

### **COURSE OVERVIEW**

Education is a complex subject partly because everyone, having been educated, has a personal view about what education should be and should not be. However, generalizing from one's own experience can be dangerous. This is one of the reasons why sociological perspectives become important in the field of education. Moving between the particular and the general, the personal and the social, the concrete and the abstract is one of the capacities we will try to develop in this class.

Students will learn the nature, purposes and methods of social science research in the field of education and each student will experience a small-scale research project. Students will be asked to go out and take a close look at what is happening and what has happened in Japanese education.

Class time is used for instructor's lecture, discussion, and students' presentation.

### **TOPICS**

1. Overview of the development of social science research
2. The nature and purposes of social research in the field of education
3. Learning from previous studies – Investigation on Japanese education
  - 3-1: Condition of language education in Japan
  - 3-2: Transition from schools to work
  - 3-3: Futoko (Truancy, Non-attendance) problem
  - 3-4: Life of adolescences - Roles of Japanese school clubs, functions and culture of cram schools and families.
4. Research Planning: What are your research questions?
5. Introduction to Research Methods
  - 5-1: Modes of Inquiry- Quantitative Modes of Inquiry and Qualitative Modes of Inquiry
  - 5-2: Sampling Techniques
  - 5-3: Data Collection Techniques
    - (1) Questionnaire (2) Observation (3) Interview
  - 5-4: Interpretations of Data
6. Ethical issue in social research
7. Conducting your group project

### **ASSESSMENT**

Assessment for this class will consist of three parts, weighted equally.

1. A couple of short reports exploring practical aspects of the concepts discussed in class.
  - a) Report 1: Your education in broader contexts: educational autobiography
  - b) Report 2: Literature Review
2. A project paper

Each student will write a final paper drawing on the findings from your group work. Throughout the semester, the student will have opportunities to discuss portions of his/her project with the

instructor.

### 3. Class participation

Participations to the class and to your group work are very important part of this class. This includes planning your research, developing research instruments, conducting the research and giving a presentation.

## **REFERENCE BOOKS**

Readings for each week will be handed out in class. The following books will be our basic guides throughout the course.

McMillan, James H. and Schumacher, Sally. *Research in Education – A Conceptual Introduction*, 5th edition, Addison Wesley Longman, Inc., 2001

Light, Richard J. et al. *By Design: Planning Research on Higher Education*. Cambridge, Mass: Harvard University Press, 1990.

Weiss, Robert S. *Learning from Strangers: The Art and Method of Qualitative Interview Studies*. New York: The Free Press, 1994.

Mathews, Gordon and White, Bruce (eds.) *Japan's Changing Generations: Are Young People Creating a New Society?*, London and New York: Routledge Curzo, 2004

Rohlen, Thomas and Bjork, Chris (eds.) *Education and Training in Japan*, Vol. III, Routledge, 1998

## **INSTRUCTOR'S PROFILE**

### **Junko KAWAI**

(Associate Professor, The Organization for the Promotion of International Relations)

Ph.D. (Education, University of California, Berkeley)

M.Ed.(Kyoto University)

B.A. (Social Science, University of Tsukuba)

Research Topics:

Study on International Relations in Education, Sociology of Education, Comparative Education, Educational Research Methods

Selected Publications:

Kawai, J. *et al*, "Attitudes towards Study Abroad and their Social Background: A Comparative Study between Japanese and Chinese University Students", *Ronko The International Center Research Bulletin*, pp.1-20, 2011 (in Japanese)

Kawai, J. "Internationalization and Education", in Inagaki (ed.) *Child, School and Society*, Sekai Shishosha, 2006 (in Japanese)

Kawai, J. *Academic Markets and Policy Arrangements, the International Students in Japanese Higher Education*, Ph.D. Dissertation, University of California, 2005

## **7. Entrepreneurship**

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### **LECTURER**

**Tetsuo KITANI**

(Professor, Office of Society-Academy Collaboration for Innovation)

### **OBJECTIVES**

We are now living in the entrepreneurial age. Knowledge about entrepreneurial process is critical, not only for students who are interested in entrepreneurial career, but also for students who seek to work in large organizations, because the need for all companies to maintain an entrepreneurial perspective is increasingly important.

This course will examine the venture creation and growth process at the various stages of generating ideas, recognizing and pursuing opportunities, raising capital, building infrastructure, and eventually harvesting the venture. This course addresses the issues faced by entrepreneurs who wish to turn opportunity into viable start-up companies that create value, and empowers students to develop their own approaches, guidelines, and skills for being entrepreneurs. During this course, students can practice the entrepreneurial process, and can become more adept at the decision making and skills of OPPORTUNITY RECOGNITION and RESOURCE ACQUISITION.

### **COURSE ORGANIZATION**

In this course, we will rely upon lectures, case studies, and course projects to expose students to a wide array of ideas and material on entrepreneurship. Therefore, significant preparation and participation is expected from students. Our emphasis will be on engaging in lively and productive class discussions. Students will be expected to come to class fully prepared to discuss the reading and case material, by considering key issues or questions that are raised as a result of preparation for that week.

### **TOPICS**

- 1) What is Entrepreneurship?
- 2) Venture Idea Generation
- 3) Identifying Valuable Opportunities, Assessing Criteria of Opportunities
- 4) Individual Idea Presentations and Group Formation
- 5) Business Models
- 6) How to Write a Viable Business Plan – Structure and Required Content
- 7) Interim Business Plan Presentations and Feedbacks
- 8) Managing Uncertainty and Growth
- 9) Start-up Experiences (Guest Speaker)
- 10) Venture Capital
- 11) Silicon Valley Ecosystems
- 12) Creating and Harvesting Values for Stakeholders, Exit Strategies
- 13) Final Business Plan Presentations

## **GRADING**

Group Project

Mini-Business Plan Document 30%

Mini-Business Plan Presentation 20%

Individual Work

Venture Idea 20%

Class Participation (Case discussions, Feedback to others, Questions) 30%

Total 100%

**Group Project:** Students are required to work in teams with hypothetical entrepreneurial venture and each team will be required to complete a shortened version of business plan to screen your team's venture. The primary purpose of this exercise is to determine whether the business idea can be shaped into an opportunity that is worth pursuing. Thus, you need to develop a clear understanding of your product or service offering, the market, and the business model. The exercise teaches students how to approach business as something evolving, not completely under control. The exercise is structured around teams (as in real world).

The written report should not exceed 20 pages in length, including supporting materials. The dates for the interim and final presentations are announced during the class. Typically, each team will be given 5-15 minutes to present followed by 10-15 minutes of Q&A / feedback sessions.

## **REFERENCE**

Bygrave, William D. and Zacharakis, Andrew 『The Portable MBA in Entrepreneurship Third Edition』 (J. Wiley & Sons, Inc.) ISBN:978-0-471-27154-3

## **INSTRUCTOR'S PROFILE**

### **Tetsuo KITANI**

(Professor, Office of Society-Academy Collaboration for Innovation)

Tetsuo Kitani leads Kyoto University's education and research in entrepreneurship management and supports multiple university spin-offs. His work includes articles around innovation strategy and entrepreneurship, including a textbook 'Case Studies: Starting and Running Your own Venture' (Nikkei Publishing, 2010), and 'Successful Concept Development' (Diamond Publishing 2012). Before joining Kyoto University, Mr. Kitani has intensive working experience in the areas of management consulting and corporate finance at McKinsey & Co, and both domestic / international financial institutions.

He holds Bachelor of laws, Tokyo University, MA, Political Science, University of Chicago and MBA, the Wharton School, University of Pennsylvania

## 11. JAPANESE RELIGIOUS TRADITIONS II

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### **LECTURER** Steven TRENSON

(Associate Professor, Hakubi Center, Graduate School of Human and Environmental Studies)

### **OBJECTIVES**

One of the major principles of premodern Japanese religions is the so-called “kami-buddha combinatory paradigm”, or *shinbutsu shūgō* in Japanese. The intricate relationships between native deities of Japan (kami) and Buddhist divinities that took solid shape from approximately the tenth century indeed formed the underlying current of Japanese religions until the end of the Edo period (1603-1868). This course intends to trace the development of Buddhism and Shinto and explore various aspects of their interaction from the late twelfth century until the end of the sixteenth century. In so doing, the course aims to contribute to a better understanding of Japanese culture as a whole.

### **TOPICS**

1. Short introduction to Japanese Buddhism and Shinto
2. Relic and dragon worship in medieval Japan
3. Buddha mothers, jewel women, and sacred kingship
4. Esoteric kami worship
5. Pure Land Buddhism
6. Zen Buddhism
7. Devotion to the *Lotus Sutra*
8. Buddhism and the arts

### **EVALUATION**

Assessment will be determined by the following criteria:

- (1) Class attendance 20%
- (2) Two reports 40%
- (3) End-term paper 40%

Students will have to submit two reports, one during mid-term and one at the end of the course. Details on the requirements for these reports will be given in class.

In addition, at the end of term students are expected to submit a paper (minimum 2000 words, printed on A4 sheets) which discusses an aspect of Japanese religious traditions relevant for the period covered in class. The source of the information (books, articles, etc.) must be cited appropriately.

### **INSTRUCTOR'S PROFILE**

#### **Steven TRENSON**

(Associate Professor, Hakubi Center, Graduate School of Human and Environmental Studies)

Dr. Trensou received a master's degree from Ghent University (1998) and Kyoto University (2002), and a Ph.D. from Kyoto University (2007). His past research involved esoteric Buddhist rituals and dragon cults of medieval Japan. His most recent publications include “The Establishment of Prayers for Rain at Daigoji and the Dragon Princess Seiryō” (in Japanese), in *The Power of Ritual: The World of Religious Practice in Medieval Japan*, ed. Lucia Dolce and Matsumoto Ikuyo, 2010, and “Shingon Divination

Board Rituals and Rainmaking”, *Cahiers d’Extrême-Asie*, 2013 (forthcoming). He is currently working on a book on the medieval dragon cult of Shingon tradition.

## **8. GLOBAL BUSINESS STRATEGY**

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### **LECTURER Hiroaki NAGAYAMA**

(Professor, The Organization for the Promotion of International Relations)

### **OBJECTIVES**

This course is a continuation of the “Essentials of Business Strategy I” series. The course covers basic knowledge of management which is not covered in “Essentials of Business Strategy I(Global marketing)”. We will also use several case studies of Harvard Business School, IMD, and Keio Business School to help us understand theoretical frameworks of global business strategy. We will then explore the linkages between concepts and practices.

During this course, students are expected to acquire an ability to create strategies and make decisions according to various situations which may be faced in real business.

### **LECTURE FORMAT**

Classes are intended to be structured in the following sequence: 1)Group discussion and preparation of presentation, 2)Class discussion and short lecture, 3)Explanation of the case to be analyzed at the next session.

### **EVALUATION**

Grades are determined based on the following:

- (a)Individual Test
- (b)Group homework: case studies for each class
- (c)Group case analysis reports and presentations for two cases during the term

### **MAJOR REQUIREMENTS**

It is highly recommended to take “Global Marketing(Essentials of Business Strategy I)” in Fall Semester before taking this course. Prior knowledge of management is necessary to take this course. Power Point (PPT) presentation will also be required.

### **REFERENCE**

If you want to study further -- deepen your understanding of a case discussion and lecture, or comprehend an overview of analysis -- reviewing the following textbooks is recommended;

Kotler, and Keller (2006). Marketing Management, 12e, Pearson International Edition

Michael E. Porter (1980). Competitive Strategy. The Free Press.

Michael E. Porter (1985). Competitive Advantage. The Free Press.

### **INSTRUCTOR’S PROFILE**

#### **Hiroaki NAGAYAMA**

Dr Nagayama has gained over 20 years of working experience as a management consultant and energy economist at Mitsubishi Research Institute, Inc.

Dr Nagayama holds a B.A. in Economics from Keio University, an MBA from Yale University, and a Ph.D.(Energy Science) from Kyoto University.

His academic publications include :

"Japanese Electricity Industry: Recommendations for Restructuring," Vol 24, Issue 10. 2011, The Electricity Journal "

"Electric Power Sector Reform Liberalization Models and Electric Power Prices in Developing Countries, An Empirical Analysis Using International Panel Data" vol.31, pp. 463-472, 2009, Energy Economics.

'Political Economics of the Unbundling of Electricity Generation and Transmission', Toyokeizaishinposya, 2012. (in Japanese)

## **9. SOUTHEAST ASIAN COMPARATIVE POLITICAL-ECONOMY**

### **LECTURER**    **Kosuke MIZUNO**

(Professor, Center for Southeast Asian Studies)

### **Masaaki OKAMOTO**

(Associate Professor, Center for Southeast Asian Studies)

### **Pavin CHACHAVALPONGPUN**

(Associate Professor, Center for Southeast Asian Studies)

### **MIENO Fumiharu**

(Associate Professor, Center for Southeast Asian Studies)

### **OBJECTIVES**

Asia is on the rise politically and economically. The academic and business worlds are excited with the rise of China and India, and their attentions are not paid much on Southeast Asian countries. But Southeast Asian countries are playing a hub role to construct a creative and future-oriented network among conflicting major powers, Japan, China, Korea and India.

This introductory class on Southeast Asia aims to give the analytical framework to understand the politics and economy on Southeast Asian countries and also the region-making process in Southeast and East Asia. The class is roughly divided into two sessions; the politics and the economy on Southeast Asia. Major countries covered in the class are Thailand, Indonesia, the Philippines, Malaysia and Myanmar. After giving the historical development of Southeast Asia in general and the important issues regarding Southeast Asian countries, the first half of the class is devoted to the politics in Southeast Asia, starting from the historical development of political regimes such as authoritarian, socialistic and democratic regimes to the key concepts such as colonialism, nationalism and separatism.

The latter half of the class is on the economy in Southeast Asia and deals with the rapid transformation of macro and micro economy of each country and shows several important analytical frameworks and policy issues such as dual society, agricultural involution, corporate finance and microfinance. It will also discuss implications of Asian Economic Crisis in 1997 and the Lehman Shock in 2008 for Southeast Asian countries.

The class will also give lectures on the process of region-making in Southeast and East Asia, focusing on the role of overseas Chinese and also on ASEAN as a regional organization.

### **CONTENTS**

- Birth and Development of Southeast Asia as a “region”
- Politics in Southeast Asia: Authoritarianism, Democratization, Decentralization
- Economy in Southeast Asia: Developmentalism, Neo-liberalism, Economic Crisis
- Beyond Southeast Asia: Overseas Chinese in Southeast Asia

- Region-making: ASEAN and East Asian Community
- Future of Southeast Asia

## **EVALUATION**

Students' grades will be based on (1) attendance in class and (2) one final examination. Attendance will be checked and students who absent themselves beyond what the regulations allow will be dropped from the roll and given a failing grade.

## **MAJOR REQUIREMENTS**

Students will be expected to do a lot of reading and to participate in the discussions. A set of reading materials will be available upon the opening of classes.

## **REFERENCES**

If you want to study further -- deepen your understanding of a case discussion and lecture, or comprehend an overview of analysis -- reviewing the following textbooks is recommended;

Donald Emmerson, "'Southeast Asia: What's in a Name?'" *Journal of Southeast Asian Studies* (March 1984)

Erik Martinez Kuhonta, Dan Slater, and Tuong Vu eds., *Southeast Asia in Political Science: Theory, Region, and Qualitative Analysis*. Stanford: Stanford University Press (2008)

Garry Rodan, Kevin Hewison and Richard Robison eds., *Political Economy of South-East Asia: Markets, Power and Contestation*. Oxford: Oxford University Press (2006)

Amitav Acharya, *The Making of Southeast Asia: International Relations of a Region*. Ithaca: Cornell University Press (2013)

## **INSTRUCTORS' PROFILE**

### **MIZUNO Kosuke**

(Professor, Center for Southeast Asian Studies)

His PhD is from the Faculty of Economics, Kyoto University. His main research field is Indonesia and his research interest covers the labor issues and rural industry in Indonesia. The current research agenda is the sustainable interrelationship between the human and nature in the peat-swamp area in Riau, Indonesia.

The recent publications:

Mizuno, Kosuke, 2011, "The Third Initiative: "The Value of Sustainable Humansphere in Tropical Biomass Production", Global COE Program in Search of Sustainable Humansphere in Asia and

Africa, February 2011, CSEAS, Kyoto University, pp.6-7

Mizuno, Kosuke, Haris Gunawan, "Conservation of peat bog and agroforestry in Indonesia", Takamitsu Sawa et.al. ed., *Achieving the Global Sustainability :Policy Recommendation*, UN University Press, pp.162-174 (Forthcoming)

Kosuke Misuno, Pasuk Phongpaichit ed. 2009. "Populism in Asia". Kyoto CSEAS Series on Asian Studies 2, Center for Southeast Asian Studies, Kyoto University. NUS press Singapore with association with Kyoto University Press.

### **Pavin CHACHAVALPONPUN**

(Associate Professor, Center for Southeast Asian Studies)

Dr Pavin obtained his PhD from the School of Oriental and African Studies (SOAS), University of London. His research interests include Thai Politics, Foreign Policy and International Relations, Comparative Politics, Politics of Myanmar and Indochinese States, Nationalism, National Security, Asian International Relations, ASEAN Integration, Policy Studies, Public and Social Policy.

The recent publications:

Pavin CHACHAVALPONPUN, 2010. *Reinventing Thailand: Thaksin Shinawatra and His Foreign Policy*. Singapore: Institute of Southeast Asian Studies

Pavin CHACHAVALPONPUN and Moe Thuzar, 2009. *Myanmar: Life after Nargis.*, Singapore: Institute of Southeast Asian Studies.

Pavin CHACHAVALPONPUN ed. *Good Coup Gone Bad: Thailand's Political Developments since Thaksin's Downfall*. Singapore: Institute of Southeast Asian Studies.

Pavin CHACHAVALPONPUN "The Vexing Strategic Tug-of-War over Naypyidaw: ASEAN's View of the Sino-Burmese Ties", *Journal of Current Southeast Asian Affairs*, Vol. 31, No. 1 (2012), pp. 97-114.

### **OKAMOTO, Masaaki**

(Associate Professor, Center for Southeast Asian Studies)

Dr. Okamoto is an associate professor at Center for Southeast Asian Studies, Kyoto University. His research interest is on the decentralization in Southeast Asia, especially Indonesia and also on the local politics at the periphery and urban areas. He worked for JICA (Japan International Cooperation Agency) as an expert on the facilitation of decentralization scheme in Indonesia in early 2000s.

The recent publications:

Ota Atsushi, Okamoto Masaaki and Ahmad Suaedy eds. 2010. *Islam in Contention: The Rethinking of Islam and State in Indonesia*. Jakarta: CSEAS, CAPAS and Wahid Institute. x+468p

Okamoto Masaaki, 2009, Populism under Decentralization in post-Suharto Indonesia. In Mizuno Kosuke and Pasuk Pongpaichit (eds.), *Populism in Asia*, pp. 144-164.

Okamoto Masaaki, Rise of "Realistic" Islamist Party, PKS in Indonesia. Ota Atsushi, Okamoto Masaaki and Ahmad Suaedy eds. 2010. *Islam in Contention: The Rethinking of Islam and State in Indonesia*. Jakarta: CSEAS, CAPAS and Wahid Institute. pp.214-248.

Okamoto Masaaki, 2012, Indonesia in the Reverse Corse: The Strengthened Governing by the Central Government. IN Funatsu Kazuyo and Nagai Fumio eds. *South East Asia: Local Administration and Politics in Transformation*. Tokyo: Jetro-IDE. pp. 27-65.

## **MIENO, Fumiharu**

(Associate Professor, Center for Southeast Asian Studies)

He received his PhD from the Faculty of Economics, Hitotsubashi University. His research interests in the economic system in growth process in Southeast Asia especially in Thailand and Myanmar, and Finance & Development. His work is mainly on the financial transformation of Southeast Asian countries.

Mieno, Fumiharu 2013. "Toward Myanmar's New Stage of Development: Transition from Military Rule to the Market ", *Asian Economic Policy Review*, Vol.8, No.1, June, 2013

Mieno, Fumiharu, Hisako Kai. 2012. "Do Subsidies Enhance or Erode the Cost-Efficiency of Microfinance?", Center for Economic Institutions, Working Paper Series, IER, Hitotsubashi University., Vol 14, p.1-25.

Mieno, Fumiharu. 2011. "Comment on 'Change in Development Finance in Asia: Trends, Challenges, and Policy Implications'", *Asian Economic Policy Review* 6, p.p.247-248.

Mieno, Fumiharu. 2010. "Foreign Ownership, Listed Status and Financial System in East Asia: Evidence from Thailand and Malaysia". Discussion Paper No. 64, Discussion Paper Series, APEC Study Center, Columbia University

Mieno, Fumiharu 2006, "Fund Mobilization and Investment Behavior in Thai Manufacturing Firms in the Early 1990s." *Asian Economic Journal* Vol.20 No.1 pp.95-122, March 2006

## 10. FUNDAMENTALS OF INFORMATICS

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**LECTURER**    David AVIS

(Professor, Graduate School of Informatics)

### **OBJECTIVES**

This is a general non-technical course for all undergraduate students. There is no specific mathematical background required apart from the ability to think logically and abstractly.

No matter what department you are studying in, you surely use computers. Did you ever wonder how they work? Everything a computer does is based on some algorithm or another, but most people do not know what an algorithm is.

Here are some examples.

Suppose you want to get from Kyoto University to Ikebukuro by 4pm. When is the latest you could leave and what route should you take? There are excellent computer programs to do this, and they probably use Dijkstra's shortest path algorithm. Or, suppose you want to get in touch with someone but forgot their name. If you know a few things about them, you could type those words into a search engine such as Google, and can usually quickly find their home-page. There are literally billions of web pages, so how is this done so quickly? The answer is by using the PageRank algorithm. When you shop on-line how do you identify yourself? How do you know you are communicating with who you think you are communicating with and not with a fake site? Well, probably the two computers are using a public key distribution algorithm. Why are computers so good at playing chess?

We'll look at all these algorithms, and many more, in the course. Along the way we will consider a broad variety of algorithms which have had a major impact on computing, including some of the celebrated "Top 10 algorithms of the 20th century", chosen by the editors of Computers in Science and Engineering.

### **TOPICS**

One week or two weeks will be spent on each topic.

1. The early history of algorithms
2. Graphs and networks as models
3. Shortest paths
4. The internet and search engines
5. The PageRank algorithm
6. Cryptography and data security
7. Public key distribution algorithms
8. Modeling and optimization

9. Visualization and graph drawing
10. The Monte Carlo method
11. Can computers learn?
12. Can computers think?

### **ASSESSMENT**

Assessment will be based on three mini-reports to be completed during the semester, which will be collected every 3-4 weeks.

Mini-reports consist of exercises, some of which will require use of on-line software to solve problems using algorithms studied in class.

### **REQUIREMENTS**

This is a non-technical course intended for a wide audience. Availability of a PC and basic skills in using software is assumed.

### **TEXT BOOKS**

All documents will be available on-line from course web pages.

### **REFERENCE**

<http://www.i.kyoto-u.ac.jp/~avis/>,

# **11. INTRODUCTION TO JAPANESE HISTORY I**

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**LECTURER** Steven TRENSON

(Associate Professor, Hakubi Center)

## **OBJECTIVES**

In order to understand Japan as it is today, one has to know its past. Japan has a rich and unique history which, while retaining a certain degree of continuity, developed in different directions in terms of political, social and religious policy and organization. This course intends to introduce the fundamental aspects of that history with ample illustrative material and with occasional reference to major developments in the rest of Asia. Spring semester classes will cover the ancient and early medieval periods.

## **TOPICS**

1. Introduction
2. Jomon, Yayoi and Kofun periods (7500 BCE-538 CE)
3. Asuka period (538-710)
4. Nara period (710-794)
5. Early Heian period (794-969)
6. Fujiwara hegemony (969-1068)
7. Late Heian period (1068-1185)
8. General Discussion I
9. Genpei wars (1156-1185)
10. Kamakura government (1185-1333)
11. Mongol invasions (1274-1281)
12. Emperor Godaigo and the Kenmu Restoration (1333-1336)
13. Nanbokucho period (1336-1392)
14. General Discussion II
15. Course review

## **ASSESSMENT**

Assessment will be determined by the following criteria:

(1) Class attendance and participation 20%

(2) End-term paper 50%

Students are expected to submit a paper (c. 1600-2000 words, printed on A4 sheets) on an aspect of Japanese history covered in class. The source of the information (books, articles, etc.) must be cited appropriately. Plagiarism (copy and paste) will result in an automatic zero for this assignment.

(3) Short tests 30%

## **REFERENCE BOOKS**

Hall, John W. et al., eds. *The Cambridge History of Japan*. 6 vols. Cambridge: Cambridge University Press, 1988-1999. De Bary, Theodore et al., eds. *Sources of Japanese Tradition*. 2nd ed. 2 vols. New York: Columbia University Press, 2001-2005.

## 12. UNIVERSITIES AND UNIVERSITY STUDENTS IN TODAY'S JAPAN

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### **LECTURER**    **Shinichi MIZOKAMI**

(Associate Professor, Center for the Promotion of Excellence in Higher Education)

### **COURSE OVERVIEW**

What is university or higher education like in Japan? Why do young Japanese people study at university? How is the relationship between school (or university) and work changing recently? Is university life still like a vacation between the hard studies of high school and the struggles of the working world for many students? This course answers these questions.

Although this course provides knowledge on Japanese universities and Japanese university students, I expect participants to actively engage with the course material by making comparisons with students and educational situations in their own countries. Also I expect international students to interact with Japanese participants in order to exchange knowledge and experience. I hope that the participants can enjoy the classes while learning, discussing and interacting with other participants.

No specialized knowledge is necessary because this is a general education course. Students of any major are welcome.

### **TOPICS**

1. Introduction: Demography and Unity in Education
2. Two Paths of Schooling: Academic and Vocational
3. The Ideology of Educational Credentialism
4. School-Business Interactions
5. University Life as Moratorium
6. Gender Issues in Higher Education
7. Student Learning and Development

### **ASSESSMENT**

Assessment for this course will consist of three parts:

1. Active participation in the class (no late attendance, submitted worksheet, answering clicker questions, and group discussion) (50%)
2. Presentation PPT slides by peer ratings & selected speeches (20%)
3. Submission of the essay (30%)

### **REFERENCE BOOKS**

Reference books and articles will be announced in the class according to each topic.

### **INSTRUCTOR'S PROFILE**

#### **Shinichi MIZOKAMI**

(Associate Professor, the Center for the Promotion of Excellence in Higher Education/Graduate School of Education)

Ph.D. (Kyoto University, 2003);

Dr Mizokami is conducting research on self/identity formation in adolescence as a psychologist and student learning and development as a higher education researcher.

His academic publications include:

“*Psychology of Self Formation: Creating the Self Going Through Others*, ” Kyoto: Sekaishisoshia, 2008 (in Japanese) “*Psychology of Contemporary Adolescence: The Age of Adjustment to Self Formation*, ”

Tokyo: Yuhikaku Publishing, 2010. (in Japanese)

*“The influence of learning and life on job performance and result: For a school-to-work transition study”*

Journal of the Liberal and General Education Society of Japan, 34 (2), 139-148. (In Japanese)

## **13. JAPANESE CULTURE I**

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**LECTURER** Chul-Woo KIM

(Professor, Graduate school of Engineering)

### **OBJECTIVES**

In this course, various topics related to Japanese culture will be discussed to provide students with the essential knowledge and understanding of Japanese culture. The focus will be on achievements and characteristics of Japanese individuals who gained worldwide recognition in the past century. In particular, we will trace the traditional roots of these characteristics as well as highlight early exchanges with foreign cultures. In addition, through debates in class we will discuss the reasons of the worldwide popularity of Japanese culture today.

### **TOPICS**

#### 1. Orientation Class

History of Japanese Literature

2. Pre-Meiji Literature/ A brief look at Heian and Muromachi literature; Edo bourgeois literature

3. The Birth of National Literature in the Meiji Period/ The I-novel, romanticism, and naturalism

4. Post-War Literature and the First Japanese Literature Nobel Prize/ Tanizaki and Mishima

5. Contemporary Literature and Its Influence/ From Kenzaburo Oe to Murakami Haruki

Short History of Manga

6. Meiji and Before/ Hokusai manga and Meiji satirical cartoons

7. Post-War Manga and Globalization/ From Tezuka Osamu to “Cool Japan”

8. Midterm Exam

Japanese Spiritual Practices (Martial Arts, Tea Ceremony)

9. Before Meiji/ “Bunbu ryōdō”, the aristocratic culture of the samurai

10. Meiji Reinterpretation/ Nitobe Inazuma’s “Bushido” and Okakura Tenshin’s “Book of Tea”

11. Early Globalization/ Kanō Jigorō and other important martial artists

12. Spiritual Practices as Cultural Phenomena/ The globalization of Japanese traditional values

An Introduction to Japanese Gastronomy

13. Traditional Cuisine/ The esthetics and values of washoku

14. Food Globalization: In and Out of Japan/ Five hundred years of culinary exchanges

15. Final Exam

### **ASSESSMENT**

Evaluation:

Based on class attendance and performance (30%), mid-term exam (35%) and final exam (35%)

# 14. “BUILDING A SUSTAINABLE FUTURE: PRINCIPLES AND CHALLENGES”

## COURSE OBJECTIVES

Sustainability – living within our means without compromising future needs – is the core environmental principle explored in this course. Students will first examine key challenges to sustainability facing communities worldwide. Later, after conducting fieldwork in specific communities, student groups will present ideas on addressing these challenges to the class.

## COORDINATORS

**Tracey GANNON** (Associate Professor, Graduate School of Global Environmental Studies)

**Ben MCLELLAN** (Associate Professor, Graduate School of Energy Science)

**Jane SINGER** (Associate Professor, Graduate School of Global Environmental Studies)

## LECTURERS (in alphabetical order)

**1. Katsue FUKAMACHI** (Associate Professor, Graduate School of Global Environmental Studies)

**2. Tracey GANNON** (Associate Professor, Graduate School of Global Environmental Studies)

**3. Hirohide KOBAYASHI** (Associate Professor, Graduate School of Global Environmental Studies)

**4. Ben MCLELLAN** (Associate Professor, Graduate School of Energy Science)

**5. Rajib SHAW** (Associate Professor, Graduate School of Global Environmental Studies)

**6. Jane SINGER** (Associate Professor, Graduate School of Global Environmental Studies)

Course structure	Topic/activity unit
<b>Module 1:</b> “Core concepts and elements of sustainability”	(Week 1 [April 10]) Orientation: introducing the key course concepts (McLellan/Gannon/Singer)
	(Week 2 [April 17]) Population, ethics and development (Singer)
	(Week 3 [April 24]) Global and local issues: the sustainability of food and water systems (McLellan)
	(Week 4 [May 1]) Global and local Issues: the sustainability of energy supplies (McLellan)
	Week 5 [May 8]) Education for Sustainable Development and Disaster Risk Reduction Linkages (Shaw)
<b>Module 2:</b> “Campus sustainability”	(Week 6 [May 15]) Greening campuses worldwide/greening Kyoto University (Singer/Asari)
	(Week 7 [May 22]) <b>Guided student fieldworks around Kyoto University campus</b> This fieldwork will take place in the usual classroom period (TAs)
	(Week 8 [May 29]) Student group reports and discussion based on field observations (Singer/Asari)
<b>Module 3:</b> “Making cities sustainable”	(Week 9 [June 5]) Making cities sustainable: global issues and local issues (Gannon/Asari)
	(Week 10 [June 12]) <b>Guided student fieldworks around Kyoto city</b> A number of group fieldworks held 9-13 June will replace the usual class. All students must attend at least one of the fieldworks (Singer/Fukamachi/TAs)
	(Week 11 [June 19]) Student group reports and discussion based on field observations (Gannon/Asari)
<b>Module 4:</b> “Rural sustainability”	(Week 12 [June 26]) Rural sustainability: national and local issues (Singer/Fukamachi)
	(Week 12 continued.[June 28]) <b>Saturday fieldtrip to rural community close to Kyoto city, in addition to usual class</b> (Singer/Fukamachi/TAs)
<b>Module 5:</b> Group presentations	(Week 13 [July 3]) Preparation class: Campus/city sustainability “Project X” Proposals (Instructors/TAs)
	(Week 14 [July 10]) Campus/city sustainability “Project X” Proposals: Final Presentations (Instructors, TAs, and selected guests from university administration and the student community in attendance)

\* Student fieldwork will be guided by teaching assistants for this course.

## **GRADING/ASSESSMENT CRITERIA**

Students will be graded on the basis of

1. Participation throughout the course (80%)
2. (Students will be graded for attendance and punctuality (20%), full engagement in **all** compulsory fieldwork and active participation in class discussion and feedback sessions (60%), and active participation in the class on-line social networking site) (20%)
3. Performance in final group presentations (20%)

**Note:** Travel costs for all field trips will be paid by the course organizers where necessary.

## **INSTRUCTORS' PROFILES** (in alphabetical order)

**Katsue FUKAMACHI** is an associate professor at the Graduate School of Global Environmental Studies, Kyoto University, working on of landscape ecology and planning. She holds a PhD in agriculture. Her research topics include determining key factors and changes in the relationship between people and nature in *satoyama* landscapes, and proposing projects for the conservation and productive use of characteristic rural landscapes within the frame of landscape ecology. Her particular focus is on environmental design that aims at the integration of ecological and cultural values.

**Kobayashi HIROHIDE** is an associate professor at the Graduate School of Global Environmental Studies, Kyoto University. He received an MEng in architecture from Kyoto University and worked as a qualified architect before returning to Kyoto University in 2004. He received a PhD in global environmental studies from Kyoto University in 2007. His research interests include natural disasters and human settlement, and he is currently conducting field surveys in mountainous and lagoon villages in flood-prone areas of central Vietnam.

**Tracey GANNON** is an associate professor at the Graduate School of Global Environmental Studies, Kyoto University, where she teaches environmental communication studies. She holds a PhD in Japanese literature from the University of Cambridge, UK. She joined Kyoto University in November 2003 to develop *Sansai: an Environmental Journal for the Global Community* – an international intellectual forum for Japanese and overseas environmental specialists from any discipline and any sector. Since then, she has also developed a bi-annual *Sansai* Newsletter, which focuses on the activities of faculty and students at the Graduate School of Global Environmental Studies. Her research interests include eco-criticism, environmental film, eco-literacy and education for sustainability. She currently leads the Tertiary Education for Sustainable Development Initiative – a project that aims to develop a comprehensive, widely replicable approach for tertiary-level sustainability education.

**Ben MCLELLAN** is an associate professor in the Graduate School of Energy Science at Kyoto University. He has worked in the area of sustainability of energy and industrial processing systems over the past nine years, mainly at the University of Queensland. His particular fields of interest are integration of sustainability into industrial design, sustainability indicators, technology, energy systems and sustainable development.

**Rajib SHAW** is an associate professor at the Graduate School of Global Environmental Studies, where he heads the International Environmental and Disaster Management laboratory. He brings over 15 years of experiences of disaster risk reduction, especially in the developing countries of Asia. He holds a D.Sc. from Osaka City University. He works closely with local communities, NGOs, governments and international organizations, including United Nations, especially in Asian countries. He is currently the Chair of the United Nations Asia Regional Task Force for Urban Risk Reduction. His research interests

are community based disaster risk management, climate change adaptation, urban risk management, and disaster and environmental education. He has published several books in the field of disaster and environmental management. He is also the Chief Editor of Asian Journal of Environment and Disaster Management.

**Jane SINGER** is associate professor of resource governance and participatory development at the Graduate School of Global Environmental Studies, Kyoto University. A professional writer and editor who has resided in Japan for nearly three decades, she frequently writes on environmental and cultural issues for English-language newspapers and magazines. Her areas of academic interest include development-induced displacement, migration and population issues, and education for sustainability. She is currently coordinating research on dam-displaced ethnic minority communities in central Vietnam.

## 10. LIFE SCIENCE II

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**THEME** To understand what is life at the molecular and cellular level.

### **COURSE OVERVIEW**

Special emphases will be on the biologists' way of thinking as well as the basic concepts on the gene structure and function.

1. Logic and basic concepts in biology: How does biologist do and what does biologist know?
2. Methods in biology: What kind of technique does biologist employ?
3. Specific topics deal with the cell structure and function, the nucleus and central dogma
4. Basics of recombinant DNA technology will be covered

This will be a lecture/discussion course that will be also a distance-learning course between Kyoto University and the National Taiwan University. The number of students in the class is limited to 30-40.

The students will be given 2-3 scientific papers read.

Reference books will be suggested in the class

### **TOPICS**

1. Finding of genetic materials
2. Structure of DNA
3. Replication of DNA
4. Recombinant DNA technology
5. Structure of gene
6. Transcription and translation
7. Protein structure
8. Protein synthesis and transport
9. Genome structure in eukaryotes
10. Genome structure in prokaryotes
11. Examples of experiments in molecular and cell biology
12. Single-molecule techniques in molecular and cell biology
13. Paper discussion and examination

### **GRADING POLICY**

Evaluated by attendance (45%), participation in discussion (45%), and short essays (10%)

### **INSTRUCTOR'S PROFILE**

**Kuniko TAKEYASU**

(Professor, Graduate School of Biostudies)

Prof. Dr. Kunio Takeyasu was trained as zoologist and neuro-pharmacologist in his early career as a graduate student at Hiroshima University and Osaka University. After his post-doctoral research on the molecular and cell biological aspects of the membrane proteins such as acetylcholine receptors and ion-motive ATPases at Cornell University and the Johns Hopkins University, he joined University of Virginia as an assistant professor in 1988, and started to utilize atomic force microscopy (AFM) in biological studies. After 4 years of research and teaching at the Ohio State University, he moved to Kyoto University as a full professor in 1995. Since then, he has been developing the technologies for biological application of AFM. His most recent research has been focusing on single-molecule imaging of membrane proteins and chromatin at sub-second time region with nano-meter space resolution. Dr. Takeyasu has been a member of Biophysical Society and American Society for Cell Biology.

## 12. ENERGY AND RESOURCES II

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### THEMES

1. Energy Conversion Technology and Suppression of Global Warming
2. Materials Technology for Saving of Energy and Resources
3. Fuel Cell Technology and Related Issues

### COORDINATOR

**Masahiro SHIOJI** (Professor, Graduate School of Energy Science)

### LECTURERS

1. **Masahiro SHIOJI** (Professor, Graduate School of Energy Science)
2. **Mamoru MABUCHI** (Professor, Graduate School of Energy Science)
3. **Hiroshi IWAI** (Associate Professor, Graduate School of Engineering)

### COURSE OVERVIEW

Modern society relies on abundant use of energy in order to realize a convenient and pleasant daily life. Fossil fuels are the main energy resources for the current energy conversion technology. Fuel reservoir, however, is very much limited in amount. Therefore, the effective uses of fossil fuels are necessary. This course will introduce the advanced technologies in energy conversion and storage, especially for the supply of power and/or electricity.

### GRADING POLICY

Achievement will be evaluated from the average score of upper two among three classes. The score on each class will be rated synthetically by times of attendance, the accuracy of answer(s) and written paper(s). Professor will assign you a subject for each paper, if any. The paper must have a cover page listing the student's name, title, date of submission, and the Professor's name. Papers should be at least three-pages, typed, double-spaced, written with a 12 point font on an A4 size paper.

### 1.

**Theme** Energy Conversion Technology and Suppression of Global Warming  
**Lecturer** **Masahiro SHIOJI**  
(Professor, Energy Conversion Science, Graduate School of Energy Science)

Efficiency of energy conversion systems will be introduced and discussion will be extended to how the exhaust of carbon-dioxide can be reduced with the advanced energy conversion system. Some overviews will be developed on other types of energy conversion system which will minimize the exhaustion of greenhouse gases in industrial, commercial and transportation sectors.

### Topics

Greenhouse Effect on Global Warming  
Trends in CO<sub>2</sub> and temperature-rise / Integrated framework of climate change

Energy Sources and Uses  
History of Primary Energy Supply, Primary Energy Resources

Available Use of Thermal Energy  
Thermal Efficiency of Power Systems, Improvement in Combustion Systems

Alternative Fuels for Power Systems  
Requirements and Feasibility, Biomass Fuels and Hydrogen Energy

Internal Combustion Engines  
Latest Technologies in I.C. Engines (Stationary, Automobiles)

### Reference Books

Handouts are prepared for classes. Other textbooks will be announced in class, if any.

## 2.

**Theme** Materials Technology for Saving of Energy and Resources  
**Lecturer** Mamoru MABUCHI (Professor, Graduate School of Energy Science)

Simultaneous pursuit of energy and resources saving and sustainable development is one of critical issues. The lectures will cover materials science and engineering for solution of energy and resources saving and sustainable development. In particular, recycling, materials selection and low-weight metals will be focused on.

### Topics

Recycling Issues

Recycling is most important for resources saving. However, there are some problems in current recycling technologies. In this lecture, the cycling problems will be discussed.

Materials Selection

What material has greatest impact from ecological view? Materials selection is very important for sustainable development. In this lecture, materials selection in structural materials will be discussed

Super-Light Metals

One of solutions for energy and resources issues from the viewpoint of materials is light materials. In this lecture, porous metals will be explained as an example of super-light materials.

### Reference Books

To be announced in class.

## 3.

**Theme** Fuel Cell Technology and Related Issues  
**Lecturer** Hiroshi IWAI (Associate Professor, Graduate School of Engineering)

Fuel cell is a device that "directly" converts the chemical energy of a fuel into the electrical energy. With its unique characteristics, it is regarded as one of the prospective power generation systems in our future society. There are several different fuel cell types at various stages of development. This lecture is an introduction to fuel cell technology. Discussions are to be developed on the characteristics of different fuel cell types and their suitability for different applications. Attention is also paid to the fuel preparation as the evaluation of fuel cell systems greatly depends on how the fuel is produced.

## **Topics**

### Energy Flow

Sources of energy, Demand for electricity, Consumption, Storage and transport

### Fuel cell technology

History, Basic principles, Simple experiments, Fuel cell types

### Applications and Challenges

Stationary application, Portable application, Transportation

### Fueling

Fuel preparation, Hydrogen and other fuels

## **Reference Books**

Handouts are prepared for classes. Other textbooks will be announced in class, if any.

## **INSTRUCTOR'S PROFILE**

### **Masahiro SHIOJI**

(Professor, Graduate School of Energy Science)

Dr. Shioji has engaged in research work of combustion problems and related matters in power systems. Main scientific publications are concerned with "Combustion Modeling of Diesel and Spark-Ignition Engines", "Performance and Emissions in I. C. Engines using Alternative Fuels", and "Laser Diagnostics and Image Analysis for Combustion Research".

He is a member of the Experts Committee on Motor Vehicle Exhaust Emissions of the Central Environmental Council in Ministry of the Environment, Japan. Besides, he has served on the council committees related to the automobiles and the environments in a country and municipalities. Also, he has acted as a director and a council of several academic societies (Society of Automotive Engineering, Mechanical Engineers, Combustion Institute, and others).

### **Mamoru MABUCHI**

(Professor, Graduate School of Energy Science)

Dr. Mabuchi has engaged in research work of materials science. His main scientific publications are concerned with "Nanoporous Metals", "Super-Light Magnesium Alloys" and "Atomic and Electronic Analyses by Molecular Dynamics and First-Principle Calculations". He has published about 350 scientific papers.

He is on the board of directors of The Japan Society for Technology of Plasticity, and is also on the board of councilors of The Japan Institute of Metals.

### **Hiroshi IWAI**

(Associate Professor, Graduate School of Engineering)

Dr. Iwai has engaged in research work of thermal engineering problems related to heat and mass transfer phenomena. Main scientific publications are concerned with "Thermal Management of SOFC (Solid Oxide Fuel Cell)", "Optimization of Porous Electrode Microstructure", "SOFC Based Hybrid System Analysis", "High Temperature Heat Exchanger" and "Heat Transfer Enhancement".

## **17. MODERN JAPANESE SOCIETY I**

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**LECTURER** Chul-Woo KIM (Professor, Graduate school of Engineering)

### **COURSE OVERVIEW**

In this course, various topics related to Japanese society will be discussed to provide students with the essential knowledge and understanding of modern-day Japan. In particular, the focus of this course is to trace the historical roots of contemporary issues and dynamics that mark modern Japanese society. Students taking this course are required to reflect on similar or related situations in their home country and by way of a comparative approach present their thoughts in class through oral presentations while in addition defending possible solutions to certain contemporary issues in debates.

### **TOPICS**

History of Japanese Politics

1. The Pre-Meiji Political System  
Relations between the Bakufu and the domains, the casts system, and early rural protests
2. Meiji Reforms  
Meiji Restoration, the Civil Rights Movement, and the Meiji Constitution
3. Post-War Politics  
The GHQ and the new constitution, the rise of the PLD, and the “Four Big Pollution Diseases of Japan”
4. The Contemporary Situation  
People’s disinterest in politics, instability, and the new rise of local activism
5. Oral Presentations & Debate

The Family Structure

6. The Traditional Family  
The Ie system, household relations and succession
7. Meiji Changes  
The 1898 Meiji Civil Code
8. Post-War Families  
Demographic changes and the 1947 reform of the Family Law
9. Contemporary Issues and Dynamics  
The decline of marriage and birth rates, and aging society
10. Oral Presentations & Debate

History of Japanese Scientific Institutions

11. Before the Meiji Period  
Neo-Confucianism and Science, Western Studies, and the Tenmongata
12. New Institutions Developed during the Meiji Period  
The first Japanese students abroad, science policies, and the foundation of the first Universities
13. The Post-War Situation  
The first Nobel Prizes and international scientific cooperation
14. Contemporary Developments  
Recent Nobel Prizes and new challenges
15. Oral Presentations & Debate

### **ASSESSMENT**

Evaluation: Based on class attendance & performance (50%) and oral presentation (50%)

## Japanese Language Classes

- ◇ KUINEP students are allowed to take a maximum of 6 Japanese language classes and one optional Kanji class (for a maximum of 7 classes) each semester in addition to their KUINEP lecture courses offered in English.
- ◇ KUINEP students will be conferred one credit unit by Kyoto University for each Japanese language/Kanji class for which they have successfully fulfilled course completion requirements (a maximum of 7 credit units per semester). Refer to “Evaluation and Course Completion Requirements” at the end of this section.
- ◇ KUINEP students who wish to take Japanese classes at the International Center are required to take a placement test at the beginning of each semester prior to registering for their classes.
- ◇ Further information regarding the placement test, Japanese language class registration and course requirements will be provided at the Orientation for Japanese Language Classes at the beginning of each semester.

### ■ Elementary

#### • Elementary I

The Elementary I is intended for students who have little or no background in Japanese. Achievement goals for Elementary I classes are; to master basic grammar, to engage in daily conversation, to read and write basic sentences. The courses are recommended for students working towards passing Level N5 of the Japanese Language Proficiency Test [JLPT]. In addition to their Japanese language classes, students may enroll in one optional Kanji class.

#### • Elementary II

The Elementary II is intended for students who have completed Elementary I or its equivalent. Achievement goals for Elementary II classes are; to master basic grammar, engage in daily conversation, read and write basic sentences. The courses are recommended for students working towards passing Level N4 of the Japanese Language Proficiency Test [JLPT]. In addition to their Japanese language classes, students may enroll in one optional Kanji class.

### ■ Intermediate

Based on the results of the placement test, students whose current proficiency is deemed sufficient for enrollment in Intermediate I, Intermediate II, Intermediate III, or Advanced Japanese will choose their Japanese classes respectively from the classes in the course catalog (“Course Descriptions of Japanese Classes”).

- **Intermediate I**

Students will work on reinforcing and applying their Japanese skills learned in the previous course. Achievement goals for Intermediate I classes is to listen and engage in conversation with ease; read and write effectively by applying the grammar, vocabulary, and Kanji learned in the Elementary classes. The courses are recommended for students working towards passing Level N3 of the Japanese Language Proficiency Test [JLPT]. Students may take a maximum of 6 Japanese language classes, in addition to one optional Kanji class.

- **Intermediate II**

Achievement goals for Intermediate II classes are to comprehend the main ideas of discussions on general topics. Clearly express opinions on general issues and provide justification for them. Accurately comprehend and write clear, detailed text on general topics. The courses are recommended for students who have passed Level N3 of the Japanese Language Proficiency Test [JLPT] and want to begin studying for N2 of the JLPT. Students may take a maximum of 6 Japanese language classes, in addition to one optional Kanji class.

- **Intermediate III**

Achievement goals for Intermediate III classes are to converse effectively and in a manner suitable to a given situation/purpose. Give presentations and engage in discussion freely and fluently. Read academic articles and produce clearly-organized and convincing text. The courses are recommended for students who have passed or working towards passing Level N2 of the Japanese Language Proficiency Test [JLPT]. Students may take a maximum of 6 Japanese language classes, in addition to one optional Kanji class.

- **Advanced**

Achievement goals for Advanced classes are Japanese language ability sufficient for everyday life, learning and conducting research at a university, understanding academic lectures, reading and writing academic articles, and participating in discussions in Japanese. The courses are recommended for students who have passed or working towards passing Level N1 of the Japanese Language Proficiency Test [JLPT]. Students may take a maximum of 6 Japanese language classes, in addition to one optional Kanji class.

*Note: The proficiency levels indicated above (ex. N1~N5) are merely intended to serve as approximate guidelines and should not be considered as an absolute measure of proficiency or prerequisite for any given course.*

## Evaluation and Course Completion Requirements

- Attendance/Class Participation 40 %  
Assignments, Quizzes/Examinations 60 %
- Grading Scale: A+ 100 - 90 / A 89 - 80 / B 79 - 70 / C 69 - 60 / F below 60
- In order to earn credit for Japanese language/Kanji classes, students must attend classes for the entire semester through the last class period, and take all exams (including midterms) given.
- **Important notice to KUINEP students whose home university classes will resume before the end of the semester:** Students who will be departing Japan before the end of the semester in order to return to classes at their home university are requested to notify the Foreign Student Division and the Coordinator for Japanese Language Classes at the beginning of the semester before enrolling in their Japanese language classes.
- Evaluation and credit units conferred for Japanese language/Kanji classes will be shown on the student's official transcript.