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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
(Fall semester 2013, Spring semester 2014)

Fall Semester, 2013 (October 2013-March 2014)

<table>
<thead>
<tr>
<th>Event</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students arrive at Kyoto</td>
<td>October 1 or 2, 2013</td>
</tr>
<tr>
<td>Orientation for KUINEP</td>
<td>October 3-4, 2013</td>
</tr>
<tr>
<td>Classes start</td>
<td>October 7, 2013</td>
</tr>
<tr>
<td>Note: Courses marked with underline</td>
<td>on timetable (p.4) will start</td>
</tr>
<tr>
<td></td>
<td>on first week of October.</td>
</tr>
<tr>
<td>Winter Vacation</td>
<td>December 28, 2013 - January 5, 2014</td>
</tr>
<tr>
<td>KUINEP English Classes end</td>
<td>January 29, 2014</td>
</tr>
<tr>
<td>Japanese Language Classes end</td>
<td>Middle of February 2014</td>
</tr>
</tbody>
</table>

Spring Semester, 2014 (April 2014-September 2014)

<table>
<thead>
<tr>
<th>Event</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classes start</td>
<td>April 7, 2014 (unfixed yet)</td>
</tr>
<tr>
<td>Classes end</td>
<td>Around July 26, 2014 (unfixed yet)</td>
</tr>
<tr>
<td>Japanese Language Classes end</td>
<td>Around the End of July 2014</td>
</tr>
<tr>
<td>Summer Vacation</td>
<td>August and September 2014</td>
</tr>
</tbody>
</table>

*No classes on the following days:

National Holidays

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health-Sports Day</td>
<td>October 14, 2013</td>
</tr>
<tr>
<td>(Substitute Public Holiday) Culture Day</td>
<td>November 4, 2013</td>
</tr>
<tr>
<td>Emperor’s Birthday</td>
<td>December 23, 2013</td>
</tr>
<tr>
<td>Coming of Age Day</td>
<td>January 13, 2014</td>
</tr>
<tr>
<td>National Foundation Day</td>
<td>February 11, 2014</td>
</tr>
<tr>
<td>Vernal Equinox Day</td>
<td>March 21, 2014</td>
</tr>
<tr>
<td>Day of Showa</td>
<td>April 29, 2014</td>
</tr>
<tr>
<td>Children’s Day</td>
<td>May 5, 2014</td>
</tr>
<tr>
<td>(Substitute Public Holiday) Constitution Memorial Day</td>
<td>May 6, 2014</td>
</tr>
<tr>
<td>Marine Day</td>
<td>July 15, 2014</td>
</tr>
</tbody>
</table>

Others

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Festival Day</td>
<td>November 21-25, 2013</td>
</tr>
<tr>
<td>University Foundation Day</td>
<td>June 18, 2014</td>
</tr>
</tbody>
</table>
# Timetable of KUINEP English Classes

## for Fall Semester 2013

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Mon.</th>
<th>Tue.</th>
<th>Wed.</th>
<th>Thu.</th>
<th>Fri.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>8:45</td>
<td></td>
<td></td>
<td>Life Science I / Japanese Religious Traditions I</td>
<td>Self-Formation in Adolescence</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10:15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>10:30</td>
<td>Development Economics I</td>
<td>Global Marketing / Understanding Education, Human Lives and Cultures from Philosophical and Sociological Perspectives</td>
<td>Introduction to Classical Japanese Literature / The World Open Education</td>
<td>Energy and Resources I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12:00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>13:00</td>
<td>Applied Statistics</td>
<td>Innovation and Industry</td>
<td>Introduction to Japanese History II*</td>
<td>Social Research Methods in Education I/ Modern Japanese Society II*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>14:30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>14:45</td>
<td>Agriculture and Foods in Japan / Current Economy of Japan</td>
<td></td>
<td></td>
<td>Japanese Culture II*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>16:15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>16:30</td>
<td></td>
<td></td>
<td></td>
<td>Art, Culture and Technology*</td>
<td>Greek Drama on the Japanese Stage</td>
</tr>
<tr>
<td></td>
<td>18:00</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

*Courses marked with underline will start on first week of October.*
1. DEVELOPMENT ECONOMICS A

----- Inequality, Poverty and Growth

THEME
Developing Countries and the Role of Labor, Capital and Technology

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

COURSE OVERVIEW
The world’s population is expanding at a dramatic speed. At the same time, the gap between the rich and the poor is widening, and a large number of people are forced to live below the poverty line. Unfortunately, there is a downward spiral where poverty invites more poverty, creating a tragic situation.

1) Economics development is a major factor in solving poverty. But what exactly is economic development?

2) The term “a developing country” implies that the country is underdeveloped. Underdevelopment is measured in various ways: lowness of income, unequal distribution of wealth, starvation, high infant mortality rate. Underdevelopment will be analyzed from various statistics.

3) Visitors to developing countries are often surprised by how hard the people are working. Why can those who work so hard achieve only one hundredth of the income of those in a developed country? Economic theory will point to slowness in the accumulation of capital. What role does capital play in economic development? Accumulation of capital does not only imply money but also technical progress and increase in human capital, both of which contribute to economic development. Let us study these factors in the light of economic theory.

4) What kind of an environment does a country need to accumulate capital? What effect does mal-distribution of wealth, which is seen in many developing countries, have on accumulation of capital? What kind of a financial system does a developing economy need to circulate necessary capital?

5) Applying these theoretical viewpoints, we will reflect on the successes and failures of economic development in the past, using Latin America, Asia and Japan as examples.

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. What is development?
2. Faces of underdevelopment
3. Growth theory
4. Economic inequality and poverty
5. Capital accumulation and financial market
6. Technological development
7. Education as human capital investment
8. States and development

REFERENCE BOOKS
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:
“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. APPLIED STATISTICS

**THEME**
To Learn What Probability and Statistics are and How to Use Them

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

**COURSE OVERVIEW**
This class is a survey of basic concepts in statistics and probability. We will focus on applied probability and statistics rather than purely mathematical ones. As such, we will spend most of our time using probability and statistics to analyze real-life situations. The course is mainly intended for the students in humanities and social sciences.

**TOPICS**
1. Basic Probability Theory
2. Elements of Statistics
3. Describing Sets of Data
4. The Normal Distribution
5. Estimation
6. Test of Hypothesis
7. Regression Analysis
8. Time Series
9. Analysis of Variance
10. Decision Analysis

**GRADING POLICY**
There will be one final examination based on the homework assignments.

**PREREQUISITE**
A thorough knowledge of algebra along with basic maturity; mathematical and otherwise

**SUGGESTED REFERENCE**

† aotani@aotani.net
http://aotani.net/
† Tel: +81-75-753-2568
Fax:+81-75-753-2562
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!)
3. AGRICULTURE AND FOODS IN JAPAN

COURSE OVERVIEW
Rice is the symbol of Japan, its culture, food and environment. Besides rice, Japanese has utilized soybean and wheat as a starting material for as a seasoning Miso and Shoyu, and a Japanese noodle, Udon. The production of these important crops takes place under changing environment in terms not only of climate but also of social circumstances. In this class, three agricultural scientists will give lectures on rice, soybean and wheat as crop plants and of Japanese agriculture. Particular attention will be paid to a modern processing of these grains, technological development of rice production, sociological aspects of agricultural industry.

COORDINATOR Tatsuhiko SHIRAIWA (Professor, Graduate School of Agriculture)

1. Lecturer Yasuo MATSUMURA (Professor, Graduate School of Agriculture)

What are Japanese Foods?
Let’s talk about the image of Japanese Foods.

1. Brief history of Japanese Foods in the modern age
Japanese Foods are affected by foreign culture and imported foodstuffs especially for these 140 years. I would like to talk how the present style of Japanese Foods has been established.

2. Traditional or typical Japanese Foods (How do we make and eat them?)
(Classification according to food materials)
Rice (Sushi), Wheat (Noodles such as Udon, Sohmen. Cakes such as Manju), Soybean (Tofu), Fishes (Kamaboko), and Fermented Foods

3. New Food Products in Japan
New Food Products with high qualities from the viewpoints of nutrition, acceptability (delicious?) and biological functions

2. Lecturer Tatsuhiko SHIRAIWA (Professor, Graduate School of Agriculture)

Rice plant: origin and classification, morphology and plant growth
Beginning of rice cultivation in Japan

1. Production in the past; constraints and technology development
   Fertilizer: How does nutrient supply limit production?
   Temperature stress: Famines in the history and mechanisms
   'Northing' of rice-culture front and high temperature damage
   Insect damage
2. Current production and challenges
   - Production cost to enhance competitiveness
   - Roles of the small farmers in community
   - Technologies for high eating quality
   - Soybean production as an alternative summer crop

3. Some concerns for future production
   - Challenges for ‘Super high-yielding’ production
   - Uncertainty related to climate change

3. Lecturer Masaru KAGATSUME (Professor, Graduate School of Agriculture)

Biofuels and food market, Agricultural trade and economic development, Agricultural Foreign Direct Investment and Environmental Impacts, Asia Pacific Community Concept and Agriculture

1. Biofuels and food market, Agriculture as clean energy materials crop
   - Renewable vs exhaustible Resources,
   - Carbon Neutral Activity, Carbon offset activity,
   - 1st generation and 2nd generation bio ethanol

2. Agricultural trade, economic development and environment
   - Global liberalization vs regional liberalization, WTO/FTA/EPA, FDI,
   - APEC, TPP, Trade liberalization and Environment,

3. Asia Pacific Community Concept and Agriculture
   - East Asia community concept, ASEAN +3, ASEAN + 6,
   - Global Environment & Development

INSTRUCTOR’S PROFILE

Tatsuhiko SHIRAIWA
(Professor, Graduate School of Agriculture)
Dr Shiraiwa had worked for Shiga Prefectural Junior College and for Kyoto University in total for 30 years in the field of agronomy. He holds a B.A. and a Ph.D. in Agriculture from Kyoto University. He has been working on crop physiological mechanisms of yield variation of soybean and rice. The recent publication includes, “The response of soybean seed growth characteristics to increased temperature under near-field conditions in a temperature gradient chamber”, Field Crops Research 131, 26-31 (2012), “Field studies on factors causing the widening gaps in soybean yield between Japan and USA. - Field and crop management in USA –”, Journal of Crop Research 56, 93-98 (2011) (in Japanese), and “Estimation of crop radiation use efficiency”, Japanese Journal of Crop Science 80, 360-364 (2011) (in Japanese).

Yasuki MATSUMURA
(Professor, Graduate School of Agriculture)
Ph.D. (Agricultural Science, Kyoto University, 1985)
He has been working for Kyoto University since 1985 except staying at Leeds University in UK from 1989 to 1990 as a research fellow.
He has been doing research to estimate the quality of foods and food materials using various techniques from multiple viewpoints.
His recent publications are as follows:


**Masaru KAGATSUME**

(Professor, Graduate School of Agriculture)

Dr Kagatsume was awarded the Academic Prize of Agricultural Economics Society of Japan in 1994 and got a PhD (Agricultural Economics) from Kyoto University in 1988. He is the President of The Association for Regional Agricultural and Forestry Economics. Also, he is the President of Economics Society of Oceania.

He had worked as a visiting research fellow at Queensland University, University of New South Wales (Australia) and Canterbury University (New Zealand).

And he had been a senior researcher at National Research Institute of Agricultural Economics, MAFF, Tokyo from 1977 to 1990. Since then, he has been teaching and conducting the research at Kyoto University.

His recent academic publications are:


Masaru KAGATSUME, "Bioenergy Promotion and Food Resource Market in Japan", The 11th International Conference of Russian Society of Ecological Economy, Kemerovo State University, June 28, 2011
4. CURRENT ECONOMY OF JAPAN

LECTURER Pierre-Yves DONZE
(Associate Professor, Hakubi Center)

OBJECTIVES
The objective of this course is to provide introductory knowledge of Japanese economy. It will give an overview of the major issues faced by Japanese business system and institutions since the crash of bubble economy at the beginning of the 1990s. Students will especially learn how the economic policy were adapted to a changing environment (liberalization, economic integration in East-Asia), the mutations of the Japanese Business System and some general social issues to have a better and broader understanding of current Japanese economy.

TOPICS
1. The collapse of the bubble and its impact
2. Public finances and debt
3. The liberalization of the economy
4. The globalization of production
5. Foreign multinational enterprises in Japan
6. Evolution of the labour market
7. The Lehman Shock

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 economy covered in class.

REFERENCE BOOKS
Toshihiko Hayashi, 『Political economy of Japan: growth, challenges and prospects for a well-being nation,』 (Society for the Promotion of the Open University of Japan, 2010)
5. INNOVATION AND INDUSTRY

THEMES
1. Management of Innovation
2. Innovation on IT and Service Industries
3. Automobile Industry

COORDINATOR
Hiromi SHIOJI (Professor, Graduate School of Economics)

LECTURERS
1. Akira TAKEISHI (Professor, Graduate School of Economics)
2. Yoshinori HARA (Professor, Graduate School of Management)
3. Hiromi SHIOJI (Professor, Graduate School of Economics)

GRADING POLICY
Achievement will be evaluated as follows. The score for each class will be synthetically rated by
text

1. Theme
   Management of Innovation
   Lecturer
   Akira TAKEISHI
   (Professor, Graduate School of Economics)

   This part is about the management of innovation. It introduces some basic concepts, frameworks and
   perspectives useful to understand nature of innovation, innovation’s impact on business and competition, and
   strategies to manage innovation. This part uses a combination of lectures and case discussions.

   Topics and Key Words
   Nature of innovation
   Innovation’s impact on business and competition
   Strategies to manage innovation

   Reference Books
   Handouts will be prepared for classes.

2. Theme
   Innovation on IT and Service Industries
   Lecturer
   Yoshinori HARA
   (Professor, Graduate School of Management)

   This part of the class curriculum is about the practical aspects of the management of innovation for the IT
   and service industries. It introduces key governance rules such as power laws, small world networks, and

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service dominant logic, illustrating them with the examples of Facebook, Google, Amazon, eBay, etc. It also explains the recent business models along with the nature of the IT and service industries.

**Topics and Key Words**

Service science, Service innovation, Governance rules, Business models, Service value creation

**Reference Books**

Some handouts will be prepared for classes.

3.

**Theme**

Automobile Industry

**Lecturer**

Hiromi SHIOJI

(Professor, Current Japanese Economy, Graduate School of Economics)

Automobile industry has many research fields such as product development, production, parts purchasing, marketing and scraping. In this class we discuss about five topics. (1) Marketing strategies in developing countries such as China and India. (2) International Competitiveness of Japanese, Korean and Chinese Automobile Industries. (3) Chinese Electric Vehicles in Rural Areas. (4) Used Vehicle Distribution in China. (5) Automobile Distribution through Internet.

**Reference Books**

Slides will be prepared.

**INSTRUCTOR'S PROFILE**

Akira TAKEISHI

(Professor, Graduate School of Economics)

**Education**

1998  Ph.D. (Management), Sloan School of Management, Massachusetts Institute of Technology
1990  M.S. (Management), Sloan School of Management, Massachusetts Institute of Technology
1982  B.A. (International Relations), The University of Tokyo

**Professional Positions**

2008- Professor, Graduate School of Economics, Kyoto University
2003-2008  Professor, Institute of Innovation Research, Hitotsubashi University
1998-2003  Associate Professor, Institute of Innovation Research, Hitotsubashi University
1982-1994  Mitsubishi Research Institute, Inc.

**Major Publications in English**


Takeishi, Akira, “Knowledge Partitioning in the Inter-Firm Division of Labor: The Case of Automotive
Yoshinori HARA
(Professor, Graduate School of Management)

Education
1981 B.E. (Electronic Engineering), University of Tokyo
1983 M.E. (Electrical Engineering), University of Tokyo
2005 Doctor of Informatics, Kyoto University

Professional Positions
1983-1995 Research Staff Member and Manager, NEC Corporation
1995-2004 Department Head, NEC USA, Inc. and NEC Laboratories America, Inc.
2004-2006 Chief Manager (Head of Kansai Labs), NEC Corporation
2006-present Professor, Graduate School of Management, Kyoto University
2008-2010 Head of Center for Research in Business Administration, Graduate School of Management, Kyoto University
2012-present Managing Director, Kyoto Business Research Center

Major Publications in English

Hiromi SHIOJI
(Professor, Graduate School of Economics, Kyoto University : KUINEP coordinator)

Doctor of Economics (Kyoto University)

Research Interests:
- Business History
- Marketing and Distribution
- Automobile Industry
6. LIFE SCIENCE I

THEMES
1. Introduction to Molecular Biology
2. DNA Biology
3. Propagation of Genetic Materials
4. Molecular View of Development

COORDINATOR  
Kunio TAKEYASU (Professor, Graduate School of Biostudies)

LECTURERS
1. Kunio TAKEYASU (Professor, Graduate School of Biostudies)
2. Shigehiro YOSHIMURA (Associate Professor, Graduate School of Biostudies)
3. Tomohiro MATSUMOTO (Professor, Graduate School of Biostudies)
4. Tadashi UEMURA (Professor, Graduate School of Biostudies)

COURSE OVERVIEW
Life science, the overall study of life, has been based on natural history, and now involves diverse fields of basic and applied sciences such as molecular and cell biology, genetics, biochemistry, physiology, medicine and agriculture. Life science today is particularly important and exciting for several reasons. First, the molecular and chemical bases of many cellular processes in living organisms have been elucidated. Second, it is now evident that the common genetic and molecular principles underlie the diverse expression of life. Third, progress in life science, especially biochemistry and molecular biology, is profoundly influencing medicine and agriculture, i.e., diagnosis and therapy of diseases and production of genetically modified foods. Fourth, the powerful modern techniques in life science have been rapidly developing as biotechnology and contributing the reformation of the traditional study fields.

In this course, the fundamentals and recent progress in molecular and cell biology will be reviewed with special emphasis on genome science, signal transduction and development.
Overview of gene structure and function will be given using bacteria, Eschericia coli, as a model system, then, the principles will be expanded to eukaryotic genes.

Topics

1. Basic Concepts in Biology
   Chemicals make a cell. Cells make an individual organism. Individuals make an ecosystem.

2. Discovery of Gene
   Mendel’s experiment; One gene: One enzyme Theory; Avery’s experiment; Hershey-Chase experiment; Model by Watson and Crick; Central Dogma

3. Structure of Gene
   Size of a gene; Size of a genome; Bacterial gene: Operon theory; Genes of eukaryotic cells: exons and introns; Multiplicity of gene

4. Gene Duplication
   Semi-conservative replication; Replication origin, Replication fork; DNA polymerase and its 3 fundamental functions

5. Gene Function
   Promoter; Enhancer; Transcription factors; Transcription machinery

6. Ribosome and Translation
   Component of ribosome; Structure of mRNA; Amino-acyl t RNA

7. Basics of Recombinant DNA Technology
   Genes can be isolated (cloned), cut off (digested) and joined with others (ligated). Genes can be amplified in vivo and in vitro. Genes can be specifically mutated. Cloned genes can be introduced into cells, animals and plants.

8. Protein Structure and Function

This lecture will provide the basics understanding of the DNA strand, a key player of life and inheritance. The chemical and physical properties of DNA strand as well as the fundamental characteristics of the chromatin fiber, the basic structural unit of chromosome, will be described. In addition, the recent progress of successful applications of the nano-technology to the genome science will be summarized.
Topics

Fundamental Characteristics of DNA and Chromatin

The chemical and the physical characteristics of DNA will be illustrated. Especially, the importance of the superhelical structure of the DNA double strand will be focused. The effect of DNA-binding protein, as well as the relationship between superhelical strain of the DNA and the formation of chromatin fiber will also be discussed.

Nano-scale Analyses of DNA

The successful application of nano-technology to the characterization of DNA and chromosome will be summarized. The nano-scale imaging of DNA, chromatin and chromosome as well as the single-molecule measurement of various enzymatic reactions on DNA will be described.

3.

Theme Propagation of Genetic Materials

Lecturer Tomohiro MATSUMOTO
(Professor, Integrated Life Science, Graduate School of Biostudies)

The cell cycle is a series of biochemical reactions required for faithful duplication of cells. Most of these reactions are initiated in a step-wise manner and have to be completed once and only once in the cell cycle. We will focus on some of these reactions that are required for propagation of genetic materials.

Topics

Duplication of Genetic Materials in S phase 2 Classes

S phase is a cell cycle stage at which chromosomal DNA is duplicated. We will overlook basic molecular mechanisms that ensure faithful duplication of chromosomal DNA.

Segregation of Genetic Materials in Mitosis

Duplicated chromosomes are delivered equally to two daughter cells in mitosis. We will overlook basic molecular mechanisms that ensure equal segregation of chromosomes.

Reference Books

Not specified, but basic knowledge of the cell cycle is helpful.
4.

**Theme**  
Molecular View of Development: Pattern formation of neuronal and epithelial processes

**Lecturer**  
Tadashi UEMURA (Professor, Graduate School of Biostudies)

During development, individual cells decode multiple polarity cues, reorganize cytoskeleton, and eventually adopt a vast range of asymmetrical patterns. We are investigating molecular mechanisms that control pattern formation of neuronal processes and epithelial cell polarization along a planar axis. Our long-term goal is to shed light on pathogenesis of human diseases that are caused by defects in the single-cell patterning.

**Topics**

**Planar Cell Polarity**  
1 Class

The Drosophila wing provides an appropriate model system to study genetic programming of planar cell polarity (PCP). Genetic and molecular analysis of PCP of this system and its possible application to human diseases will be discussed.

**Pattern Formation of Neuronal Processes**  
1 Class

Neurons extend many dendrites, specialized for signal reception, as well as a single axon, specialized for signal transmission. In contrast to a large body of knowledge about axon guidance, much less is known about molecular mechanisms underlying dendritic outgrowth and branching in vivo. Our analysis of dendritic pattern formation will be discussed.

**Reference Books**

Molecular Biology of the Cell, 4th edition (Bruce Alberts et al., Garland Science)

**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.
7. JAPANESE RELIGIOUS TRADITIONS I

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 fundamental underlying current of Japanese religions until the end of the Edo period (1603-1868). This course focuses on the classical and early medieval period and intends to describe the various ways in which Buddhism and Shinto developed and interacted from the early stages until the end of the twelfth century. In so doing, the course aims to contribute to a better understanding of Japanese religious culture as a whole.

TOPICS
1. Shinto mythology
2. The introduction of Buddhism in Japan
3. Nara Buddhism
4. Esoteric Buddhism (Shingon and Tendai Buddhism)
5. Kami-buddha combinatory religion
6. Devotionalism (early Amidism)
7. Kumano worship

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)
8. GLOBAL MARKETING

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

OBJECTIVES
The business strategy should be the guidelines which the company sets up for its long-term goals to employ/utilize management resources and construct/establish a competitive domain in a changing environment. The aim of this course is for students to acquire basic knowledge and skills in corporate management, especially for global marketing and become capable of originating consistent strategic options.

The lectures of this course provide students with basic concepts and skills in developing business strategies, and global marketing strategies. Special emphasis will be placed on case studies of Japanese and international companies provided by Harvard Business School, IMD, and Keio Business School, looking into their management issues to help us understand the theoretical frameworks. We will use these cases as teaching materials. Every case study is an actual situation. We will then explore the linkages between concepts and practices.

The course consists of lecture-based instruction followed by guided discussion, readings as homework, student presentations, and a final examination. During this course, students are expected to acquire an ability to create strategies and make decisions according to various situations which they may face in a real business environment.

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
There are no prerequisites for this course. Prior knowledge of management or business is unnecessary to take this course. However, Power Point (PPT) presentation will be required.
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;


INSTRUCTOR'S PROFILE
Hiroaki NAGAYAMA
(Professor, The Organization for the Promotion of International Relations)
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:
'Political Economics of the Unbundling of Electricity Generation and Transmission', Toyokeizaishinposya, 2012. (in Japanese)
9. Understanding Education, Human Lives and Cultures from Philosophical and Sociological Perspectives

LECTURERS
Hachiro Iwai (Professor, Sociology of Education, Graduate School of Education)
Naoko Saito (Associate Professor, Philosophy of Education, Graduate School of Education)

THEMES AND PURPOSE OF THE COURSE
This course is designed to improve your understanding of education, human lives and cultures from philosophical and sociological perspectives. There are two parts to the course. The first explores implications of American philosophy for education and the understanding of other cultures. The second examines the meaning of changing Japanese lives for contemporary education using sociological research results. Taken together, you are expected to deepen your thinking of how education contributes to developing a global citizen.

1. Theme Philosophy of Education, Globalization, and the Understanding of Other Cultures
Lecturer Naoko SAITO

This is a course on American philosophy and its implications for education. In the age of globalization, education from the primary level to higher education has been absorbed into the culture of accountability. A global network of communication affects the way that teaching and learning are conceived, and this has a critical effect on the understanding of other cultures. In the context of this trend there is a need to reconsider what it could mean to be a global citizen and, further, what the implications of this for cross-cultural understanding might be.

The central figures whose texts we shall read are Emerson, Thoreau, Dewey, and Cavell. They share the ideas of “philosophy as education” and of education as the perfection of the self and culture – what Cavell calls Emersonian moral perfectionism, the idea of perfection without final perfectibility. In reading the primary of, and secondary texts on, Emerson, Thoreau, and Dewey, as well as Cavell, we shall focus on this running thread of perfectionism in education in the fabric of American philosophy. These are thinkers who criticize American democracy from within and address the problems of American’s encounter with other cultures.

Discussion will include the following themes: (1) The idea of democracy as a way of life in an age of globalization; (2) Alterity, the understanding of other cultures, and the exoticization of the other (with reference especially to America’s encounter with East Asia; (3) Global citizenship and cosmopolitanism; (4) Patriotism and moral education (the relationship with the native language and culture); and (5) The problems and possibilities of translation as a mode of cross cultural dialogue. In the course of addressing these themes, we shall endeavor to find the educational implications of “perfectionist education,”
especially for moral and citizenship education.

**Requirements** This is a course about education in its broadest terms. It does not set out to provide practical competence in teaching. It offers a challenging program of study for those who wish critically to engage with underlying questions concerning education and the understanding of other cultures. While no previous study of philosophy is required, those taking the course must be ready to work with complex ideas and demanding texts and to engage in discussion. A good command of English is required.

2.

**Theme** Changing Japanese Lives and the Implications for Contemporary Education.

**Lecturer** Hachiro IWAI

This part focuses on the ways in which Japanese individual lives are shaped by the society and also examines the ways in which the collective biographies of larger birth cohorts (social generations) affect, and are affected by, social changes. Special attention will be paid to the two periods and two generations; the transition period from rapid economic growth in 1960s to stable development in 1970s; after the late 1990s, which is known as “the lost decade” in Japan; the first baby boom generation born in 1947-49; the second baby boom generation born in 1971-74. After introducing basic ideas about the Japanese family as a moral base, the course will clarify the impacts of family and life course changes on individualization in contemporary Japan using empirical findings from my own sociological research. Further discussion will focus on the roles of education in developing a global citizen under the current conditions.

**Requirements** No requirement. It is better to have introductory knowledge about the post-war Japanese history.

**GRADING POLICY**
Classroom participation and two final essays.

**INSTRUCTOR’S PROFILE**

Hachiro IWAI

(Professor, Sociology of Education, Graduate School of Education)

Hachiro Iwai is Professor at the Graduate School of Education, Kyoto University. His areas of research are sociology of education, social stratification, life course studies, and quantitative research method. He is currently initiating the panel survey of occupational and family careers for Japanese young adults born from 1966 to 1980. The part of his lecture will be based on the article, “Changing patterns of the course of women’s lives in Japan’s lost decade: An analysis of the work history of the second generation baby boomers.” *Journal of Intimate and Public Spheres. Pilot Issue* (2010).
Naoko SAITO
(Associate Professor, Philosophy of Education, Graduate School of Education)

Naoko Saito is Associate Professor at the Graduate School of Education, Kyoto University. Her area of research is American philosophy and pragmatism and its implications for education. She is the author of *The Gleam of Light: Moral Perfectionism and Education in Dewey and Emerson* (Fordham University Press, 2005) and *Uchinaru Hikari to Kyoiku: Pragmatism no Sai-Kochiku* (Hosei University Press, 2009). In collaboration with Paul Standish, she has co-authored *Democracy and Education from Dewey to Cavell* (Blackwell, forthcoming) and has co-edited the collections, *Education and the Kyoto School of Philosophy* (Springer, 2012) and *Stanley Cavell and the Education of Grownups* (Fordham University Press, 2012). She is the translator of *The Senses of Walden* (2005), the first book of Cavell’s to be published in Japanese, and of Paul Standish’s *Beyond the Self: Wittgenstein, Heidegger, Levinas and the limits of language* (Hosei University Press, 2012).
INTRODUCTION TO JAPANESE HISTORY II

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. Fall semester classes will cover the period from c. 1400 until the end of the twentieth century.

TOPICS
1. Introduction
2. Middle and late Muromachi period (1392-1568)
3. Azuchi-Momoyama period (1568-1603)
4. Edo period I (1603-1868)
5. Edo period II
7. General Discussion I
8. Meiji period I (1868-1912)
9. Meiji period II
10. Taisho and early Showa periods (1912-1937)
11. WWII (part I)
12. WWII (part II)
13. Postwar Japan
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
11. SELF-FORMATION IN ADOLESCENCE

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

COURSE OVERVIEW
How do people know, understand, and form the self? What is the difference between self and identity? This course explores them focusing mainly on adolescence.
Self and identity are rather abstract concepts, so in this course, I will ask you about your experiences (ex. your own experience, what you have about others and the world, etc) and connect them to the concepts.

I have to teach some technical terms regarding self/identity in the course, but this is a general education course. The main purpose of the course is to know what happened/is happening/will happen to you regarding self/identity formation through understanding self/identity concepts. Students of any majors are welcome.

TOPICS
Part 1. THE DEVELOPMENTAL BASES OF SELF/IDENTITY AND MORAL REASONING
1. Symbolic Interactionism and Self Psychology
2. Ego Psychology
3. Definitions in Comparative Terms
4. Synthesis of Approaches

Part 2. DEVELOPMENTAL TRAJECTORIES
1. The Development of Self-Concepts in Childhood and Adolescence
2. The Transformation of Self-Concepts into Identities in Adolescence and Early Adulthood.
3. The Synthesis of Identities in Adolescence and Early Adulthood

Part 3. CONTEXTUAL INFLUENCES
1. Self Development
2. Identity Development

Part 4. SELF FORMATION AND SELF/IDENTITY 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 BOOK
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:
12. INTRODUCTION TO CLASSICAL JAPANESE LITERATURE

THEME
Exploring Recurrent Themes, Ideas and Values Seen in Classical Japanese Literature

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

COURSE OVERVIEW

Whether it be the eloquent verse of an Ono no Komachi who pines for her lover, the amorous tales of a Hikaru Genji who in turn learns of his own wife’s seduction by another man, or the heroic account of a Yoshitsune who, despite achieving victories in battle, is ultimately pursued to the point of death by his own brother, classical Japanese prose and poetry pose important questions for us to consider.

What events, what things, what qualities provoked the artistic sensitivities of pre-modern Japanese writers and moved them to literary expression? What appealed to them and what did not? What were the objects of Japanese aesthetic appreciation? What ideas and values have gained acceptance in present-day Japan, and how have others been altered to suit modern tastes?

In the course of our study, we will attempt to answer these and other questions based on a careful reading of selected works. We will explore themes such as mononoahare, wokashi, irogonomi, mujo, yugen, hana, fuga, wabi/sabi, kanzenchoaku, etc., as seen in representative works from the Nara Period through Edo times. In many cases the themes are recurrent, drawing upon the literature of preceding eras or profoundly influencing that of later periods, and they offer valuable insight into Japanese ideals and ways of thinking. We will also discuss examples, as seen in the text, of pre-modern Japanese conventions, cultural practices and social values — tsumadohi, inton (tonsei), masurawo/tawoyame, hoganbiiki, giri-ninjo, to name just a few.

Some of the genres we will cover in our discussion: waka poetry (Manyoshu, Kokinwakashu, Shinkokinwakashu, etc.); chronicles/histories (Kojiki, Nihon Shoki, etc.); diaries/memoirs (Tosa Nikki, etc.); narrative prose (Genji Monogatari, Heike Monogatari, etc.); essay-style writing (Makura no Soshi, Hojoki, Tsurezuregusa); critical studies of poetry and prose (Mumyoshu, etc.); drama (nō, joruri, kabuki); haikai poetry (Oku no Hosomichi, etc.). We will also address writing styles and literary devices used in these works and examine their various functions.

Class time will be devoted to both lectures and group discussion sessions.

CLASS SCHEDULE (subject to revision as needed):

1st week: Lecture overview, explanation of evaluation method (assessment) Kyoto University Digital Library Rare Materials Exhibition – “Enjoying Otogi Zoshi” “Monokusa Taro”*

2nd ~ 3rd weeks: Kojiki, Manyoshu*

4th ~ 6th weeks: Kokinwakashu, Tosa Nikki, Taketori Monogatari*, Ise Monogatari

7th ~ 9th weeks: Genji Monogatari*, Makura no Sōshi, Tsutsumi Chunagon Monogatari

10th ~ 11th weeks: Shinkokinwakashu, Hojoki, Heike Monogatari

12th ~ 13th weeks: Tsurezuregusa, yokyoku (Kantan*)

14th ~ 15th weeks: Oku no Hosomichi, joruri (Sonezaki Shinju)

Group discussion sessions will be held with regard to the works marked with an asterisk *.
ASSESSMENT

Assessment will be based on the following:

1. Class Attendance and Participation (30%)
2. Term Paper (70%), which consists of [1] an outline and working bibliography (20%), and [2] the paper (50%)

Each student will be required to write a term paper presenting critical analysis of a work or works of classical Japanese literature of his/her choice in relation to one or more of the themes explored in class. Each student is also required to submit an outline and working bibliography prior to submitting his/her paper. Details of the term paper assignment, including possible approaches for the paper and the paper format, will be explained in class.

Students should note that this paper is intended as an exercise in critical thinking and writing, and students will be expected to express their ideas in an objective manner based on a careful reading of the text/texts. This paper is not meant to be an “essay” written on the purely subjective opinions of the student regarding his/her chosen work(s) of literature.

Students will have the opportunity, and are encouraged, to discuss any specific concerns they may have regarding their paper with the instructor throughout the course.

TEXTBOOKS/REFERENCE MATERIALS

Required readings will be handed out in class.

Suggested Reading:

INSTRUCTOR'S PROFILE

Shikiko KAWAKAMI
(Associate Professor, The Organization for the Promotion of International Relations)
Education: Master of Arts, Letters, Kyoto University, Japan
Bachelor of Science, Biology, Stanford University, USA
Research interests: Classical Japanese literature, with a focus on Manyoshu poetry
Research keywords: Manyoshu, waka poetry (pre-Heian Period), kunkogaku (訓語学)
Papers published (related to the content of this course, available in Japanese):
1) 『万葉集』の春の花と閻怨詩——巻十「詠花」歌一首の本文批評をめぐって——、『京都大学国文学論叢』、第10号
2) 『万葉集』巻十九・四二一四番歌「留不得常」小考、『国語国文』、第七十二巻、第一号
3) 『万葉集』五十九番「流らふるつま吹く風の寒き夜に我が背の君はひとりか寝るむ」考、『京都大学国文学論叢』、第六号
THE WORLD OF OPEN EDUCATION

LECTURER  Toru IIYOSHI  (Professor, The Center for the Promotion of Excellence in Higher Education, Kyoto University)

OBJECTIVES
Over the last decade, the emerging Internet-enabled open education movement—including the recent rise of Massive Open Online Courses (MOOCs)—has been transforming the landscape of higher education both globally and locally. By making educational tools, resources, and knowledge freely and openly accessible to everybody around the world, the movement is beginning to radically change the cultures, values, systems, ecology, and economics of higher education. In short, open education is enabling all of us to learn anything, anytime, anywhere.

The goals of this course are for students to: 1) understand the core values, possibilities, and challenges in open education; 2) gain basic skills, such as learning strategies and methods, and knowledge for effective learning that takes advantage of open education; 3) become familiar with various open educational resources; and 4) define optimal ways to enhance and accelerate both personal and collaborative learning in undergraduate, graduate, and life-long education.

The course consists of some activities such as lectures, case studies, assignments, large and small group discussions, group/personal learning design/planning projects/presentations, and report writing. Some of the course activities will be made open and public online. The following questions, topics, and case examples will be covered during the course:

QUESTIONS
• How can we enable and encourage learners and educators to participate in open education?
• What does open education mean as an agency for both formal and informal education?
• How can learning communities take advantage of open education?
• What support needs to be provided to make open education effective?
• How can openness help further expand and advance higher education?

TOPICS
History of open education, open technology, open content, open knowledge, open practice, flipped classroom, online study groups, peer learning/instruction, massive open online courses, personalized learning, self-guided learning, assessment and evaluation of learning, learning analytics, open educational innovation, future of higher education, etc.
CASE EXAMPLES
MOOCs (edX, Coursera, Udacity, etc), OpenCourseWare, Khan Academy, Open Learning Initiative, Connexions, iTunes U, TED, University of People, P2P University, Western Governors University, Open University, MERLOT, PhET, OpenStudy, Coursera, Edx, iLab, Sakai, KEEP Toolkit, MOST, etc.

EVALUATION
Grades will be determined based on discussion participation (in-class & online), group and individual projects, reports, and presentations. There will be no quizzes and examinations.

PREREQUISITE (pre-course requirements)
None in particular.

REFERENCE
Textbook:

Other references (mostly freely available online) will be introduced during the course.

INSTRUCTOR'S PROFILE
Toru Iiyoshi
(Professor, The Center for the Promotion of Excellence in Higher Education, Kyoto University)
Over the past 20+ years, Dr. Iiyoshi has led research and development efforts in advancing higher education internationally. His current areas of interest include educational innovation and technology, open education, and the future of higher education systems. He was the director of the Knowledge Media Laboratory and a senior scholar at the Carnegie Foundation for the Advancement of Teaching as well as a senior strategist in the Office of Educational Innovation and Technology at Massachusetts Institute of Technology. He has also served as a visiting professor at the University of Tokyo (Graduate School of Interdisciplinary Information Studies) and at the Center for Graduate Education Initiative of Japan Advanced Institute of Science and Technology.

He holds a Ph.D. in Instructional Systems from Florida State University, and a M.Ed. and B.A. (Educational Technology) from International Christian University.

Dr. Iiyoshi is a co-editor of the Carnegie Foundation book, "Opening Up Education: The Collective Advancement of Education through Open Technology, Open Content, and Open Knowledge" (MIT Press, 2008), and an author/co-author of several books and over 200 of academic papers and essays.
14. JAPANESE CULTURE II

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 Cinema
2. Before the Cinema: Traditional Storytelling
3. Meiji Beginnings
4. The 1950’s Golden Age
5. Contemporary Directors and Movies

Short History of Japanese Animation
6. The Beginnings
   From Shimokawa Ōten to Tezuka Osamu
7. Contemporary Anime
   Values and Esthetics of contemporary anime
8. Midterm Exam

History of Japanese Western Style Painting and Sculpture
9. Before Meiji
   The Kanô school and the Nanba-ryû; Western style ukiyo-e
10. Meiji Painting and Sculpture
    Foreign artists invited to Japan and Japanese artists abroad
11. Post-war Painting and Sculpture
    Nihonga and Yôga
12. Contemporary Art
    Overview of the contemporary scene: From Kusama Yayoi to Murakami Takashi

Introduction to Japanese Architecture
13. Fundamental Concepts of Traditional Architecture
    Based on Kyôto Architecture
14. The Influence of Traditional Concepts and Structures on Contemporary Architecture
    The architectural art of Andô Tadao and Tange Kenzô
15. Final Exam

ASSESSMENT
Evaluation:
Based on class attendance and performance (30%), mid-term exam (35%) and final exam (35%)
15. ART, CULTURE AND TECHNOLOGY

LECTURER Naoko TOSA  
(Professor, Institute for Information Management and Communication)

OBJECTIVES
We will discuss several serious issues, starting from the topic of art and technology, proceeding to the topic of culture and technology, and finally reaching to the topic of the new world based on the integration of these different concepts where both creators and viewers can reach deep mutual understandings. When we talk about art that achieves this mutual understanding, we have to admit that cultural issues would play a major role there. We can call the 1970’s and the immediately following decades as the era where the relation between art and technology was the main topic. Now, in the early era of the twenty-first century, we should consider the relationship between culture and technology, in other words, culture in the Internet era.

Each specific culture is strongly related to its region and race. Therefore, it is necessary to actually live there to really understand the culture specific to each place. At the same time, humans have been trying to realize virtual experiences of such ways of living by utilizing strong computing technology and by introducing sophisticated interaction technologies. Based on this, it would become possible for technology to clarify what culture is and, on the other hand, cultures could push technology forward. As a result, we are now approaching the stage where technologies could extract structures that hide behind each culture and try to realize communications among different cultures.

In the twenty-first century, in the area of computer technology, the basic trend involves us moving from the era of calculation, database processing, information processing, etc., to the era of addressing culture, expressing culture, handling types and structures behind several cultures, and, as a result, letting people understand different cultures at a spiritual level. In other words, I can say that we are getting into the era of Cultural Computing.

TOPICS
We want to introduce and discuss the still-unveiled possibilities of Cultural Computing which would express, in the interactive way, such substantial cultural issues such as sensitivity, memory, spirituality, storytelling, racial characteristics, etc., that have not been addressed in computer science and engineering so far. There are various possibilities in this area. From an artistic point of view, Cultural Computing can go beyond the present day media art by treating cultural issues described above. From the viewpoint of technology, it would open a new area in computer technologies, which so far has only been addressing the digitization of cultural heritages/contents for the purpose of preserving them. The digitization of cultural issues would make it possible for people to understand different cultures, bridging the gaps between time and space, consequently creating new cultures.

We particularly examine Japanese culture, although it is only a small subject of computing.
1. Japanese tastes for simple and quiet surroundings (Wabi Sabi)
2. Relations between Japanese and Asian cultures
3. Assuming the separation of Buddhism and Shintoism as a basis of Japanese cultural structure
4. Peculiar features of Japanese literature such as the 31-syllable poem, Haiku poem, and Noh play
5. Japanese designs (crests, textile, color, form, Noh play and Kabuki)
6. Understanding the depths of feeling and culture from communication through computers

**ASSESSMENT**

attendance (number of days), Art work, report,

**REFERENCE**

http://www.tosa.media.kyoto-u.ac.jp/index.html
16. ENERGY AND RESOURCES I

SYLLABUS

Energy and resource issues are closely related to our day-to-day modern lives and the environment. Various global environmental issues have become major challenges of the 21st century, and furthermore the Great East Japan Earthquake and Tsunami (2011) has revealed many related issues, including nuclear power, bringing energy and resource issues further to the forefront of issues to be tackled. In the 4.6 billion year history of Earth, the past 200-years of activity of humankind has had special significance in the sense that human activity can now cause major impacts on the earth. Therefore, there is a strong need for responsible action in the future. In this lecture series three instructors will overview and discuss various environmental problems such as resource depletion and energy issues, based on not only a technological approach but also in regards to human decision-making to select potential futures.

The course will first address the importance of acknowledging the existence of various environmental issues - both locally and globally - that are associated with our daily lives. The course will then discuss what measures can be taken that are effective or realistic in order to solve these issues. Effective utilization of sunlight as a natural source of energy is an important theme, not only for our lives now but for the planet and future generations as well, and in this lecture series, (i)Photocatalytic technology as environmental remediation and potential energy generation, and (ii)Biofuel conversion technology with optimal use of a variety of biomass resources, which is carbon-neutral, will be overviewed, as eco-technology for utilizing sunlight. Regarding human activities and important decisions on such energy and environmental issues, the systems-analysis approach, and the use of various models, will be discussed in terms of a decision-making framework for the entire system as well as the supply and demand of energy. The aim of the lectures throughout the series is thus to cultivate students’ potential to consider the issues of energy, resources and environment through understanding them, and to develop perspectives on our future society.

COORDINATOR

Hideyuki OKUMURA (Associate Professor, Graduate School of Energy Science)

THEMES

1. Energy-Environmental Issues and Technology
2. Biomass Resources as the Post-Petroleum Science

LECTURERS

1. Hideyuki OKUMURA (Associate Professor, Graduate School of Energy Science)
2. Shiro SAKA (Professor, Graduate School of Energy Science)
3. Tetsuo TEZUKA (Professor, Graduate School of Energy Science)

1. Theme       Energy-Environmental Issues and Technology
                Lecturer   Hideyuki OKUMURA
                (Associate Professor, Socio-Environmental Energy Science, Graduate School of Energy Science)

Energy and environmental (EE) problems are no longer the issues of individual countries alone. It is
becoming clear that they must be tackled with respect to long timeframes and with global consideration of an earth-scale viewpoint. This lecture series start with a brief description of locally and globally existing EE issues and the possible solutions, including resource depletion, solar energy utilization, and so on. The course then addresses eco-materials or eco-technology such as photocatalytic material or photocatalysis and other cutting-edge technologies, from principle to application, as an example potential solution. The classes will be interactive, and participation is critical.

2. Theme
   Biomass Resources as the Post-Petroleum Science
   Lecturer  Shiro SAKA
   (Professor, Socio-Environmental Energy Science, Graduate School of Energy Science)

The environmental issues in the ecosystem such as global warming, desertification, a drastic decrease in the tropical forests and so on will be first overviewed, and then, for the useful utilization of clean and renewable biomass, its rules, functions and methodologies for biomass conversion to biofuels and biochemicals will be discussed for bioethanol and biodiesel production, so as to mitigate the environmental loading.

3. Theme
   Systems-Analysis Approach to Energy-environmental Issues
   Lecturer  Tetsuo TEZUKA
   (Professor, Socio-Environmental Energy Science, Graduate School of Energy Science)

One of the important characteristics of the energy-environmental systems is that the systems include humans as independent decision-makers. Therefore, we should not only make decisions about energy supply and demand but also decide the framework in which the decisions are made. This situation brings us very interesting but serious issues. In this lecture the systems-analysis approach to these issues, that is, the systems analysis of energy-environmental systems based on statistical models, optimization models and simulation models, is briefly explained. Then the necessary elements for supporting decision-making will be investigated.

GRADING POLICY
Achievement will be evaluated from the average score of upper two among three classes. The score for each class will be synthetically rated by attendance, homework, and the final written paper, the subject of which will be given in the class. The paper must have a cover page listing the student's name, title, date of submission, and the Professor's name. Papers must have at least three pages, typed, double-spaced, and written with a 12-point font on A4-size paper sheets.

INSTRUCTOR'S PROFILE
Hideyuki OKUMURA
(Associate Professor, Department of Socio-Environmental Energy Science, Graduate School of Energy Science: KUINEP coordinator)
Dr. Okumura holds B.S. in Engineering from Kyoto University, M.S. from Kyoto University, and the Ph.D. from Pittsburgh University in USA. His professional experience includes postdoctoral fellowship at University of Delaware and faculty/research fellowship at Carnegie Mellon University.
His academic publications include: 74 original papers, 14 international conference proceedings, 6 books (chapters) and 11 patent applications including 4 patents granted.

Multidisciplinary broad topics include environmental issues, in conjunction with energy, science, and engineering, e.g. photocatalysis and magnetics, and social issues, e.g. “A Modern Society and Affluence” (MARUZEN, 2010).

He is an editorial board member for Scientific Reports (Nature Publishing Group).

Chief editor for the Report on “Establishment of COE on Sustainable Energy System” (443 pages, 21COE: March 31, 2007)

He is a recipient of Service Award from National Service Fraternity (Alpha-Phi-Omega in USA), and the Letters of appreciation from the President of the United States (the White House), the U.S. Department of Agriculture and the Children's Hospital.

The member of Sigma Xi, The Scientific Research Society.

Shiro SAKA
(Professor, Socio-Environmental Energy Science, Graduate School of Energy Science)
Post-Doctoral Fellow (1980-1983); Pulp and Paper Research Institute of Canada/Department of Chemistry, McGill University, Montreal, Canada
Senior chemist (1983-1988); Research Center, Daicel Chemical Industries, Ltd., Himeji, Japan
Associate Professor (1988-1996); Department of Wood Science & Technology, Kyoto University
Professor (1996-); Graduate School of Energy Science, Kyoto University

His academic publications, honor and awards include:
192 original papers, 85 review papers, about 366 international conference proceedings, 102 books and 59 patent applications including 48 patents granted.


Currently, the country representative of Japan for the International Energy Agency (IEA), Task 39 (Liquid Biofuels) since 2007, and Fellow of the International Academy of Wood Science. He has been a chair of Biomass Expo 2007 through 2013.


Tetsuo TEZUKA
(Professor, Graduate School of Energy Science)
Professor of Department of Socio-environmental Energy Science, Graduate School of Energy Science, Kyoto University.

Doctor of Engineering (University of Tokyo),
Research Interests:
- Analysis, Modeling and Design of Energy Supply-demand Systems,
- Renewable Energy Use in Asian Countries,
17. SOCIAL SCIENCE RESEARCH METHODS IN EDUCATION I

**THEME**  
Japanese Education from Cross-cultural Perspectives

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

**COURSE OVERVIEW**  
This course provides an introduction to various aspects in Japanese education, while it focuses on sociological research and theory that are related to education from cross-cultural perspectives. Topics will include; patterns of socialization, processes of transmission of culture and social control in education, analysis on “meritocracy” in various countries, and educational issues facing current Japanese education.

The primary purpose of the course is to provide the student with the factual knowledge, conceptual tools and approaches for understanding Japanese education and education of student’s own. Class will be interactive in a mixed style of lectures and discussions, with occasional use of activities including videos and a field trip to one of the local schools. (The second semester starting April will focus more on developing knowledge and skills to conduct research project.)

**TOPICS**

1. An overview of Japanese school system
2. An introduction to sociological approach to education
3. Functions of education- A cross-cultural analysis  
   (1) Socialization  
       What is “socialization”?  
       Necessity and capability of being socialized  
       Patterns of socialization in families and schools  
   (2) Transmission of culture  
       How do we pass on cultures?  
       Definition of culture and society  
       Cultural diversity and educational controversy  
   (3) Social control and personal development  
       Who (What) controls schools and how?  
       The birth of modern school space  
       Life of adolescents  
   (4) Selection and allocation  
       What is a “meritocratic” society?  
       The social context of entrance examinations  
       Transition to university and to work  
   (5) Other functions of education - Change and Innovation/Legitimatization
4. Various issues in education  
   (1) Overview of issues facing Japanese education  
   (2) Ijime(Bullying), Futoko (Truancy), English teaching in Japan, “Monster parents”, influence of information technology on class room and life of youth, etc.
5. Observation and interview in real educational settings- a field trip to one of the local schools.
ASSESSMENT

Assessment for this class will consist of three parts

1. Participation to class activities (30%)
   Students are expected to complete the reading assignments, participate in class discussion, and take responsibility for presenting selected reading assignments at least once during the semester.

2. Mid-term report (30%)
   A literature review on a topic covered in the first half of the course.

3. Final report (40%)
   A research paper on a subject chosen in consultation with the instructor.

REFERENCE BOOKS

Reading assignments will be announced in class. The following books are the examples that will be presented during this semester.

Smith, Peter K., Morita, Yoji, Junger-Tas, Josine, Olweus, Dan, Catalano, Richard and Slee, Phillip (eds.) The Nature of School Bullying – A cross-national perspective, Routledge, 1999
Hurn, Christopher J. The Limits and Possibilities of Schooling – An introduction to the sociology of education, Allyn and Bacon, 1993

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:

Selected Publications:
18. MODERN JAPANESE SOCIETY II

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 Migration In and Out of Japan
1. Before the Meiji Period
   Sixteenth and seventeenth century international relations
2. The Opening of Japan
   Oyatoi-gaiokokujin and the first Consulates
3. Japanese Emigration
   Issues related to Japanese emigration to South and North America
4. Contemporary Immigration Issues
   Nikkeijin and the question of the need for foreign labor force
5. Oral Presentations & Debate

Gender Dynamics in Modern Japan
6. Before the Meiji Period
   Female figures in pre-modern Japan
7. Meiji Reforms
   Higuchi Ichiyô, Hiratsuka Raichô and early feminism
8. Post-War Japan
   Female stereotypes: Office Lady and Kyôiku Mama
9. The Contemporary Situation
   Female empowerment and new faces of paternity
10. Oral Presentations & Debate

History of Japanese Education
11. Before the Meiji Period
   Terakoya and Hangakkô
12. Meiji Reforms
   The 1890 Imperial Rescript on Education and the issue of private and public education
13. Post-War Evolution
   Reforms in occupied Japan and the examination system
14. Current Issues and Dynamics
   Internationalization and the adaptation to new labor contexts
15. Oral Presentations & Debate

ASSESSMENT
Evaluation:
Based on class attendance & performance (50%) and oral presentation (50%)
13. GREEK DRAMA ON THE JAPANESE STAGE

THEME
Ancient Greek theatre and its Nachleben on the Japanese stage

LECTURER
Martin CIESKO
(Associate Professor, Department of Classics, Faculty of Letters)

COURSE OVERVIEW
This is an introductory course on ancient Greek theatre and its reception in Japan. The course is intended for students without any prior knowledge of the subject.

What are the universal qualities of Greek drama? What do the plays teach us about suffering, loss, passions, and, in short, about being human?

In what ways do Japanese producers (Ninagawa, Suzuki, and others) transform/appropriate this material?

Ancient Greece, Elizabethan England and medieval Japan have produced some of the best playwrights in the world. Can we compare them? How much do they have in common with one another? And how do the political systems (democratic Athens vs. feudal Japan) influence what is permissible on stage?

The performances we will watch are for the most part in Japanese without English subtitles, so you should be able to understand a fairly flowery style of Japanese or at least be ready to read the plays in translation before class.

TOPICS
1. The context of theatrical performances in ancient Greece: the where and how. What were the theatre buildings like? How important was it that the plays were performed in a competitive context as part of religious festivals? How did the political situation in Athens shape the form of the plays?
   (1) What can the extant archaeological monuments tell us about the ancient Greek performances? We have a number of Attic and Italian vases with painted scenes from drama, Hellenistic mosaics and terracotta figurines of actors and masks, etc. This material can help us (to some extent) visualize ancient performances.

2. Already during the lifetime of the three star playwrights of Athens (Aeschylus, Sophocles, Euripides) and even more so from 4th century BC onwards, Athenian drama was exported abroad and actors were international celebrities. What was behind this universal appeal of theatre?
   (1) What are then the universal qualities of Greek drama? What do the plays teach us about personal loss, human suffering, uncontrollable passions, and, in short, about being human?

3. In what ways did Japanese producers (Ninagawa, Suzuki, and others) transform/appropriate this material? What was their agenda? And why does exotic ancient Greek material feel so modern in their hands? This may naturally lead us to a discussion about shifting cultural boundaries, but we will rather
watch DVDs of Japanese productions of Greek drama: Ninagawa's King Oedipus (with Nomura Mansai), Medea (with Arashi Tokusaburo and, time permitting, at least a few scenes from his production 20 years later with Otake Shinobu) and a couple more plays.

ASSESSMENT
Assessment for this class will consist of three parts

1. Participation to class activities (30%)
   Students are expected to complete the reading assignments, participate in class discussion, and take responsibility for presenting selected reading assignments at least once during the semester.

2. Mid-term report (30%)
   A literature review on a topic covered in the first half of the course.

3. Final report (40%)
   A research paper on a subject chosen in consultation with the instructor.

REFERENCE BOOKS
Reading assignments will be announced in class.

INSTRUCTOR'S PROFILE
Martin CIESKO
(Associate Professor, Department of Classics, Faculty of Letters)
D.Phil. (Classics, University of Oxford)
M.A. (Comenius University, Bratislava)
Research Topics:
Greek language and literature, Greek and Roman drama.

Selected Publications:
"Menander’s self-advertisement or life in and out of the canon", JASCA 1 (2011).
"From Comic Flights to Generic Acceptance", Humaniora Kiotoensia. On the Centenary of Kyoto Humanities, Graduate School of Letters, Kyoto University 2006,359-367
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 along with the credit units earned for his/her regular/KUINEP lecture courses.

- The final grade earned in each Japanese language/Kanji class will be entered onto the student’s official transcript even in the event he/she stops attending a class or otherwise does not complete the course requirements (and hence receives a failing grade) for that particular class. Therefore, students are advised to choose their classes carefully and confirm their class registration.
For further information, please contact:
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E-mail: ryuga-exchange@mail2.adm.kyoto-u.ac.jp