

# International Spring School for Environmental Studies 2018

## Schedule in 2018

22<sup>nd</sup> February (Thu.) Orientation, full series of lectures, dinner seminar

23<sup>rd</sup> February (Fri.) Kyoto city tour/Seminar (tentative)

24<sup>th</sup> February (Sat.) – 26<sup>th</sup> (Mon.) Field study tour in Shiga<sup>\*contents 1</sup>

(Local natural water usage system around Lake Biwa, Lake Biwa Museum,

Water treatment research site, Sewage treatment facilities, Local confectionary company)

27<sup>th</sup> February (Tue.) – 28<sup>th</sup> (Wed.) Special seminar and experiments in atmospheric chemistry<sup>\*contents 2</sup>

1<sup>st</sup> March (Thu.) – 4<sup>th</sup> (Sun.) Field study tour on Satoyama, Marine Environments and Energy (Ine, Kamiseya, Maizuru, Tsuruga)<sup>\*contents3</sup>

5<sup>th</sup> March (Mon.) Group discussion/Day off

6<sup>th</sup> March (Tue.)-7<sup>th</sup> March (Wed.) Day off

8<sup>th</sup> March (Thu.) Student exchange program, cultural experiences in Kyoto city

9<sup>th</sup> March (Fri.) Day off

10<sup>th</sup> March (Sat.)-12<sup>th</sup> (Mon.) Field study tour on Soil and Forest in Wakayama and Mie<sup>\*contents4</sup>

13<sup>th</sup> March (Tue.) Preparation for final seminar

14<sup>th</sup> March (Tue.) Final Seminar and discussion

## Contents

### 1. Field study tour in Shiga (24<sup>th</sup> – 26<sup>nd</sup> February)

A three-day tour course will take us around Lake Biwa, the largest lake in Japan, to investigate people's lives and environment. First, we will move to Shiga prefecture and visit a lakeside district named Harie to learn about the natural water utilization system in the local community (active eco-tourism). The next day we will visit the Lake Biwa Museum to learn about natural history, people's lives and environmental conservation measures to rehabilitate the lake, which was once threatened by eutrophication. We will then visit a study site in shoreline of Lake Biwa to see some experiments on water treatment system that one of GSGES lecturers implemented. On the third day, we will visit a famous confectionary factory that has been active in environmental conservation and rural development and wastewater treatment plant to learn about state-of-the-art technology for wastewater treatment.

### 2. Gain expertise about the Atmosphere (27<sup>th</sup> – 28<sup>th</sup> February)

We will provide a special course on atmospheric chemistry that includes:

#### 1) Air pollution studies

- Kinetic study for NO<sub>x</sub> and ozone reaction
- Field observation of air quality in Kyoto

#### 2) Aerosol formation experiments

- Secondary organic aerosols from ozonolysis
- Aerosols from plant emissions

### 3. Field study tour in Satoyama, Marine Environments and Energy (1<sup>st</sup> – 4<sup>th</sup> March)

“Satoyama” is a Japanese term referring to the area comprising hilly terrain and arable flat land. Literally, sato (里) means arable and livable land or local land, and yama (山) means hill or mountain. The Satoyama landscape has evolved through centuries of small scale agricultural and forestry use supporting local people’s lives and preserving biodiversity. We will visit an example of Satoyama in the winter, and learn about the landscape, culture, society, and current issues in rural society.

To investigate about the marine environment in the Sea of Japan, we will stay at the Maizuru Fisheries Research Station (MFRS) of Kyoto University in northern Kyoto Prefecture. The research station is well situated for education and research on (1) the life history and ecology of fish, invertebrates and algae, (2) coastal oceanography, (3) systematics of marine fish, (4) terrestrial impacts on productivity and biodiversity in rivers and coastal waters. The course at the Maizuru Fisheries Research Station will cover theories and practical methods to enhance students’ knowledge of the marine environment and biodiversity in the Sea of Japan, including:

- 1) Evaluation of marine environment via conductivity, salinity, temperature, chlorophyll, and depth data;
- 2) Collection of benthos and fishes with a beam trawl;
- 3) Identification of species by means of molecular genetic techniques

To deepen our understanding of energy, we will visit a wind power plant to see the actual condition of this renewable energy, and the Atomic Energy Science Museum at the Fukui Nuclear Power Center in Fukui prefecture to learn about the operation of nuclear power plants and accidents at nuclear power plants.

### 4. Field study tour on Soil and Forest in Wakayama and Mie (10<sup>th</sup> – 12<sup>th</sup> March)

In this tour, we will visit “Ki no Kuni (紀伊国)” which means “country of wood”. Lectures will be provided on soils supporting agricultural and natural ecosystems in Japan, especially mountains and forest usage related to Satoyama and livelihood transitions due to societal change. In addition, we will visit a site utilizing woody biomass from local timber as an alternative energy usage source.

#### Assignment after acceptance

Through this program, we would like all the participants to jointly learn, discuss, and think deeply about “**Energy**”, “**Food**” and “**Linkage among Urban and Rural Areas**” for achieving a sustainable society through field studies in the Kansai area.

We kindly request that you investigate conditions related to the keywords above (**Energy, Food, Linkage among Urban and Rural Areas**) in your country in advance to promote productive discussions with other members. In addition, please prepare a short presentation to explain about your current/former studies to show at the Dinner Seminar on 22<sup>nd</sup> February. The academic backgrounds of the participants are wide-ranging, so please try to prepare an audience-friendly presentation.

In the series of Atmospheric Chemistry seminars, you will have a presentation (1-2 page of PPT file or PDF file) about air- pollution in your home country/province. Please prepare and make a presentation in English and if you use data from other documents and websites, please indicate the data sources in your presentation.

#### Important Notice

There may be some subsequent schedule and content changes. We apologize for any inconvenience. We will inform you immediately of major changes.