

## Program for Developing $\pi$ -type Environmental Leadership by ISO14001 and Industry-University-Government-Citizen Collaboration

In the “ $\pi$ -type Environmental Leadership Development Program using ISO14001 and Industry-University-Government-Citizen Collaboration (hereinafter Environment Leadership Development Program), Iwate University gives Certified Environmental Management Specialist, an official qualification of the university, to students who meet requirements.

### List of Subjects for the Environmental Leadership Development Program

Subject		Academic staff	Year	No.of credit	page
Environment Education Subject	Perspectives on the Environment	Hiraki · Inoue · Maki · Nakamura · Matsuki	1 <sup>st</sup> year of all faculties Students of the Department of Civil and Environmental Engineering do not take “Wastes and Environment.”	2 in 2 <sup>nd</sup> term	P.2
	People’ s Life and Environment	Sugawara · Koide · Uchiyama · Nagasawa · Narita			P.2
	City and the Environment	Umita · Miyake · Kumagai · Ohtsuka · Minami			P.3
	Introduction of Environmental Conservation	Hashimoto · Kunisaki · Takehara · Hirota · Irasawa			P.3
	Interactions between the Global Environment and Human	Nishizaki · Tsuchiya · Shibazaki · Maruyama · Hiyane			P.4
	Water in Environment	Kawai · Kikuchi · Matsuoka · Kinoshita · Sato			P.4
	Wastes and Environment	Nakazawa · Tateishi · Kamoshida · Haruyama · Maeda · Shimizu · Ohkawara · Satta			P.5
	Plant production and Environmental Technology	Yoshikawa · Shono · Kanazawa · Tatsuzawa · Matsushima			P.5
	Forest as Global Environment	Okada · Sekino · Kofujita · Sawaguchi · Yamamoto · Itoh			P.6
Animals and Environment	Azuma · Sano · Kizaki · Kajiwara · Kita	P.6			
The Biological Environment in our Daily Lives	Oda · Aoki · An · Deguchi · Itoh	P.7			
ESD subject Human and Culture	Introduction to Ethics	Kobayashi Usami	1 <sup>st</sup> year of H/SS and Agriculture, 1 <sup>st</sup> &2 <sup>nd</sup> year of Education., 2 <sup>nd</sup> year of Engineering	2 in 2 <sup>nd</sup> term	P.7 P.8
ESD subject Human and Society	Community and Life	Yamazaki	1 <sup>st</sup> of H/SS, 1 <sup>st</sup> &2 <sup>nd</sup> of Educ., 2 <sup>nd</sup> of Engin.	2 in 1 <sup>st</sup> term	P.8
	Learning in Practice How to Organize a Sustainable Community	Yamazaki · Fukunaga	1 <sup>st</sup> and 2 <sup>nd</sup> years of all faculties (H/SS: Humanities and Social Sciences)	2 in 1 <sup>st</sup> term 2 in 2 <sup>nd</sup> term	P.9
	Civil Life and Law	Matsuoka	2 <sup>nd</sup> year of H/SS, Engin., Agri.	2 in 2 <sup>nd</sup> term	P.9
	Modern Society and Economy	Fujiwara	1 <sup>st</sup> of H/SS & Engin., 1 <sup>st</sup> & 2 <sup>nd</sup> of Agri.	2 in 2 <sup>nd</sup> term	P.10
	Region and Society	Yamazaki	1 <sup>st</sup> H/SS, 1 <sup>st</sup> &2 <sup>nd</sup> Educ., 2 <sup>nd</sup> Engin.	2 in 2 <sup>nd</sup> term	P.10
	ESD: Learning from Local Businesses	Yamazaki · Fukunaga	All years of all faculties	2 in intensive	P.11
ESD subject Task Subject for 3 <sup>rd</sup> & 4 <sup>th</sup> year students	Conservation of Urban Natural Environments	Hashimoto · Umita · Minami · Hiyane · Miyake · Azuma · Ohtsuka · Kajiwara · Takehara · Miwa	3 <sup>rd</sup> and 4 <sup>th</sup> year of all faculties	2 in 1 <sup>st</sup> term	P.12
	Project for the ecological city Morioka	Inoue	3 <sup>rd</sup> and 4 <sup>th</sup> year of all faculties	2 in 1 <sup>st</sup> term	P.12
	Practice on the Kitakamigawa Studies	Maki · Takehara · Tsukamoto · Higuchi · Furukawa · Miwa	3 <sup>rd</sup> and 4 <sup>th</sup> year of all faculties	2 in intensive	P.13
Environmental Management Subject	Environmental Management on Iwate University	Fukunaga · Oda · Sasao · Furukawa · Kajiwara · Ohtsuka · Nakashima	1 <sup>st</sup> year of all faculties	2 in 2 <sup>nd</sup> term	P.13
	Practical Environment Management	Kajiwara · Sasao · Nakashima · Ohtsuka · Oda	2 <sup>nd</sup> year of all faculties	2 in 1 <sup>st</sup> term	
	Practical Environment Management Seminar	Furukawa	2 <sup>nd</sup> year of H/SS	2 in 2 <sup>nd</sup> term	

☆Environment Education Subject☆ \*Refer to “I Assistant” for details

### **Perspectives on the Environment**

HIRAKI Tatsumi, INOUE Hiroo, MAKI Yonosuke, NAKAMURA Kazuki ,  
MATSUKI Sawako

1<sup>st</sup> year of all faculties: 2 credits in the 2<sup>nd</sup> term, 3<sup>rd</sup> & 4<sup>th</sup> periods of Thursday

#### **【Objectives】**

Our themes are “forests,” “woods” and “trees.” We explore the diverse functions of forests, woods and trees as the environment in terms of different levels of interactions with human society as well as in the aspects of natural science, society and culture. Hereby students develop broad and multifaceted perspectives of the environment and learn that “sustainability” is required in all levels and diverse aspects.

#### **【Goals】**

Identify specifically the diversity of the interactions between forests/woods/trees and humans/human society. Understand that the nature, society and cultural environment around us are based on the specific functions of forests, woods and trees. Based on the understanding, recognize the importance of forest conservation. Finally can explain concretely how “sustainability” is linked with human life both globally and regionally.

#### **【Class Outline】**

Overview the scientific functions of forests at the global level such as carbon circulation, and discuss them by relating them with global warming and bio-diversity (first four classes; Maki.) Look at the interdependency of human society and forests historically and view it as landscape (5<sup>th</sup>~7<sup>th</sup> classes; Matsuki.) Meanwhile discuss the position of forests in the economic globalization and forestry policies, too (8<sup>th</sup>~10<sup>th</sup> classes; Inoue.) Think about forests around Shinto shrines, custom to designate a tree instead of a gravestone when someone dies, and return of ashes of the deceased into the nature (11<sup>th</sup> and 12<sup>th</sup> classes; Nakamura.) Finally discuss the environmental philosophy, culture, ethics associated with forests (13<sup>th</sup> ~15<sup>th</sup> classes; Hiraki.)

**【Class Style】** Lectures

**【Textbook/materials】** No textbooks. Lecturers will designate materials.

☆Environment Education Subject☆ \*Refer to “I Assistant” for details

### **People's Life and Environment**

SUGAWARA Etsuko, KOIDE Shoji, UCHIYAMA Saburo, NAGASAWA  
Yukiko, NARITA Eiichi

1<sup>st</sup> year of all faculties: 2 credits in the 2<sup>nd</sup> term, 3<sup>rd</sup> & 4<sup>th</sup> periods of Thursday

#### **【Objectives】**

This subject aims to develop a broad interest in, deep knowledge of and multifaceted perspectives on the environment.

#### **【Goals】**

After completing the environmental education subject students are able to look at the global environment as well as the environment around themselves, explain the environmental issues from multiple points of view based on their specialized areas, and act independently.

1. Can explain a variety of existing environmental issues
2. Can explain the mutually-affecting relations between humans and the environment since humans are the main cause, actors and sufferers of the environment issues.
3. Can explain how different recognitions of the environment cause human to view and act differently by taking the living environment of themselves as an example.

#### **【Class Outline】**

This subject is based on the perspective that our daily activities in life cause global environmental problems, and that all of us suffer the problems by living our daily life. Each of the academic staff will lecture from his/her specialty area on issues of water, food, medicines and housing, which are indispensable to our life. The lectures aim to develop “perspectives” required for us to live a healthy and environment-conscious life. We explore how our life and the environment are working, by looking at the aspects of our life below:

1. Relations between the food consumption, which is the basis of our existence, and the environment and health.
2. Food industry and the environment
3. Living environment and drug-resistant strains
4. Life and water
5. Housing and the environment

**【Class Style】** Lectures

☆Environment Education Subject☆ \*Refer to “I Assistant” for details

### **City and the Environment**

UMITA Teruyuki, MIYAKE Satoshi, KUMAGAI Naoaki, OTSUKA Naohiro,  
MINAMI Masaaki

1<sup>st</sup> year of all faculties: 2 credits in the 2<sup>nd</sup> term, 3<sup>rd</sup> & 4<sup>th</sup> periods of Thursday

#### **【Objectives】**

Human beings have been seeking to realize an affluent society, supported by the development of science and technology. It is a fact, however, mass consumption of resources and energy along with the population growth and production increase has destructed cities and natural environment. This subject aims to learn how cities and communities can develop sustainably and how we can create them by looking at the formation and development of cities, current situations of such environmental problems as water, air, energy and traffic that cities are facing, measures to mitigate environmental impacts, and methods/history of community building by residents.

#### **【Goals】**

Understand environment issues that cities are facing and develop broad interest in and deep knowledge of the environment. Can explain cities and how communities that can develop sustainably are, and come up with and act to implement various measures to create ones.

#### **【Class Outline】**

Lectures on the themes of cities and the environment below are given by ensuring consistency.

- 1<sup>st</sup> to 3<sup>rd</sup> Introduction and water environment of cities
- 4<sup>th</sup> to 5<sup>th</sup> Energies and their use
- 6<sup>th</sup> to 8<sup>th</sup> Air and the environment
- 9<sup>th</sup> to 11<sup>th</sup> City planning
- 12<sup>th</sup> to 14<sup>th</sup> Community building by residents
- 15<sup>th</sup> Term-end exam

**【Class Style】** Omnibus-style lectures by five lecturers

☆ Environment Education Subject☆ \*Refer to “I Assistant” for details

### **Introduction of Environmental Conservation**

HASHIMOTO Ryoji, KUNISAKI Takashi TAKEHARA Akihide, HIROTA  
Junichi, IRASAWA Michiya

1<sup>st</sup> year of all faculties: 2 credits in 2<sup>nd</sup> term, 3<sup>rd</sup> & 4<sup>th</sup> periods of Thursday

#### **【Objectives】**

In accordance with the education goals of general education course (refer to Course Handbook), this subject aims to broaden interest in, deepen knowledge of and develop multifaceted perspectives of the environment in relation with the sustainability of nature and society.

#### **【Goals】**

This subject aims to develop the competency to look at the global environment as well as our backyard environment, explain the environmental issues from multiple points of view based on their specialized areas, and act independently.

#### **【Class Outline】**

- 1<sup>st</sup> Ancient people and nature (primitive landscape)
- 2<sup>nd</sup> Beautiful natural landscape
- 3<sup>rd</sup> Green space and us
- 4<sup>th</sup> Air, water and soil (global perspective)
- 5<sup>th</sup> Air, water and soil (local perspective)
- 6<sup>th</sup> Our life and natural disasters
- 7<sup>th</sup> International community and forest resources
- 8<sup>th</sup> Our life and sustainability of forests
- 9<sup>th</sup> Civilization - history of forest decline
- 10<sup>th</sup> Japanese people's nature views and forests
- 11<sup>th</sup> History/regeneration of forests and community building
- 12<sup>th</sup> What is distinguished in rice paddy field ecosystem
- 13<sup>th</sup> Modernization of agriculture/farm village and decline of secondary nature
- 14<sup>th</sup> Management system of hills, residential area, farm, field and pasture
- 15<sup>th</sup> Term-end exam

**【Class Style】** Lectures

☆Environment Education Subject☆ \*Refer to “I Assistant” for details

### **Interactions between the Global Environment and Human**

NISHIZAKI Shigeru, TSUCHIYA Nobutaka, SHIBAZAKI Shigemitsu,  
MARUYAMA Hitoshi, HIYANE Akira

1<sup>st</sup> year of all faculties: 2 credits in 2<sup>nd</sup> term, 3<sup>rd</sup> & 4<sup>th</sup> periods of Thursday

#### **【Objectives】**

Identify the relations between the global environment and human society from different viewpoints. Deepen the understanding of (1) the mechanism of such global-scale environmental problems as ozone depletion and global warming; (2) protected area systems like world heritages and national parks and their benefits to local community and environment; (3) issues of radiation and nuclear power generation; (4) ways to establish a sustainable society; and (5) the role and challenge of environmental education.

#### **【Goals】**

Can explain the relations between the global environment and human society in terms of the lecture topics. Understand that the global environment and human society need to coexist to realize a sustainable society.

#### **【Class Outline】**

The global environment has been maintained by the subtle balance among the earth's physical system and ecosystem, including the atmosphere, hydrosphere and soil sphere, and human society. As the economy of the human society expands, however, a wide range of local to global environmental problems has been emerging. This series of lectures discuss the global environment and natural disasters, global warming and ozone depletion, current situation and challenges of protected areas such as world heritages and national parks, radiation/radioactivity and humans/society, ways to establish a sustainable society and environmental education by paying attention to the interaction between the global environment and human society.

**【Class Style】** Mostly lectures

☆Environment Education Subject☆ \*Refer to “I Assistant” for details

### **Water in Environment**

KAWAI Shigenao, KIKUCHI Yoichi, MATSUOKA Katsumi, KINOSHITA  
Sachio, SATO Itaru

1<sup>st</sup> year of all faculties: 2 credits in 2<sup>nd</sup> term, 3<sup>rd</sup> & 4<sup>th</sup> periods of Thursday

#### **【Objectives】**

“Environment Education Subject” is positioned as the starting point of environmental education in Iwate University. In accordance with our education goals this subject aims to broaden interest in, deepen knowledge of and develop multifaceted perspectives of the environment.

#### **【Goals】**

After completing the environmental education subject students will have developed the competency to look at the global environment as well as their backyard environment, explain the environmental issues from multiple points of view based on their specialized areas, and act independently. Our main goal is to develop students' competency to identify problems.

#### **【Class Outline】**

This subject focuses on the importance of water, which is indispensable to humans for co-existing with the nature. Japanese people tend to forget the benefits of clean water since we live in a land blessed with abundant water. We hope students will understand how important water is for coexisting with the nature as well as for interacting with living things by learning how the situation of water in other parts of the globe.

**【Class Style】** Lectures by five teachers using slides.

☆Environment Education Subject☆ \*Refer to “I Assistant” for details

### **Waste and Environment**

NAKAZAWA Hiroshi, TATEISHI Takahiro, KAMOSHIDA Naoto, HARUYAMA Wataru, MAEDA Takemi, SHIMIZU Takeshi, OKAWARA Masafumi, SATTA Naoya

1<sup>st</sup> year of all faculties except Engineering: 2 credits in 2<sup>nd</sup> term, 3<sup>rd</sup> & 4<sup>th</sup> periods of Thursday

#### **【Objectives】**

Learn about various aspects of waste issues. Understand how a sustainable society reduces natural resource consumption and mitigates environmental impacts. Reexamine one's life to create a sound material-cycle society.

#### **【Goals】**

Develop competency to understand and examine various aspects of waste issues including depletion of natural resources, waste treatment, and environmental impacts from local to global levels. Reexamine our daily life, aiming at making a lifestyle that generates less waste.

#### **【Class Outline】**

- 1<sup>st</sup> Outline, explanation of survey on the use and recycle of packages
- 2<sup>nd</sup> Global environment
- 3<sup>rd</sup> Measures against environmental problems considering wastes
- 4<sup>th</sup> Global environmental problems and wastes
- 5<sup>th</sup> Illegal waste dumping and the environment
- 6<sup>th</sup> Purification of soil/underground water and environmental regeneration; take the case of illegal dumping site around the prefectural border as an example
- 7<sup>th</sup> Current waste generation and treatment
- 8<sup>th</sup> Recycle of wastes 1 : recycle of packages
- 9<sup>th</sup> Wastes and material circulation in nature
- 10<sup>th</sup> Recycle of wastes 2 : Farm wastes and their recycle into resources
- 11<sup>th</sup> Recycle of wastes 3 : Recycle of discarded home appliances, bicycles and computers
- 12<sup>th</sup> Recycle of wastes 4: Recycle of construction wastes
- 13<sup>th</sup> Students and wastes : presentation of the survey on the use and recycle of packages
- 14<sup>th</sup> Seminar
- 15<sup>th</sup> Term-end exam

**【Class Style】** Omnibus style classes given by eight lecturers

☆Environment Education Subject☆ \*Refer to “I Assistant” for details

### **Plant production and environmental technology**

YOSHIKAWA Nobuyuki, SHONO Hiroshi, KANAZAWA Toshinari, TATSUZAWA Fumi, MATSUSHIMA Uzuki,

1<sup>st</sup> year of all faculties: 2 credits in 2<sup>nd</sup> term, 3<sup>rd</sup> & 4<sup>th</sup> periods of Thursday

#### **【Objectives】**

“Environment Education Subject” is positioned as the starting point of environmental education in Iwate University. This subject aims to broaden interest in, deepen knowledge of and develop multifaceted perspectives of the environment.

#### **【Goals】**

Help students further understand what sustainable farm production is by explaining the relations between plants and their environment as well as the control of plant cultivation environment.

#### **【Class Outline】**

The lecturers explain in easy-to-understand ways the effects of natural environment and global warming on cultivation/production of plants, production/distribution/consumption of horticultural plants, coordination of cultivation facility environment and control of the plants growth environment, as well as the bio-instrumentation and growth diagnosis of plants.

**【Class Style】** Mostly lectures

☆Environment Education Subject☆ \*Refer to “I Assistant” for details

### **Forest as global environment**

OKADA Shuji, SEKINO Noboru, KOFUJITA Hisayoshi, SAWAGUCHI Isao,  
YAMAMOTO Nobutsugu, ITO Yukio

1<sup>st</sup> year of all faculties: 2 credits in 2<sup>nd</sup> term, 3<sup>rd</sup> & 4<sup>th</sup> periods of Thursday

#### **【Objectives】**

Develop a broad interest in, deep knowledge of and multifaceted perspectives of the environment. This subject particularly aims to help students further understand the relations between our life and the environment in terms of forests, which are important to the global environment conservation.

#### **【Goals】**

Students can (1) develop the competency to look at the global environment as well as their backyard environment, (2) explain the environmental problems from multiple points of view based on each student’s specialized area, and (3) act independently to solve the problems.

#### **【Class Outline】**

Explain environmental problems associated with forests at different levels – global, regional and daily life levels – and from different viewpoints, and present problems. Discuss how we should realize a sustainable forest management.

#### **【Class Style】 Lectures**

☆Environment Education Subject☆ \*Refer to “I Assistant” for details

### **Animal and Environment**

AZUMA Atsuki, SANO Hiroaki, KIZAKI Keiichirou, KAJIWARA Shogo, KITA Kazumi  
1<sup>st</sup> year of all faculties: 2 credits in 2<sup>nd</sup> term, 3<sup>rd</sup> & 4<sup>th</sup> periods of Thursday

#### **【Objectives】**

Learn about livestock, wildlife and aquatic animals from viewpoints of production, behavior, conservation and conflict with agriculture, forestry and fishery by associating animals with environmental problems and proper environmental sustainability.

#### **【Goals】**

This subject aims to learn about a variety of fauna from livestock bred or living in Japan to wildlife and aquatic animals. Regarding livestock we focus on understanding the current production of livestock, environmental problems and safety science of animal food. About wildlife, we aim to understand the conflict between wildlife living in farms/forests and agriculture/forestry as well as challenges in conservation. Regarding marine animals, we focus on understanding not only their behavior but the challenges in environmental conservation and development in coastal fishery. Lastly, we will learn further about the methodology of environmental education.

#### **【Outline】**

- 1<sup>st</sup> Guidance: Current livestock production in Japan
- 2<sup>nd</sup> Thermal environment and livestock
- 3<sup>rd</sup> Livestock and global environmental problems
- 4<sup>th</sup> Safety and health environment of animal food
- 5<sup>th</sup> Animal behavior and the environment
- 6<sup>th</sup> Role of zoos in society
- 7<sup>th</sup> Animal welfare and environmental enrichment
- 8<sup>th</sup> Wildlife and damages in agriculture and forestry
- 9<sup>th</sup> Wildlife and their habitat environment
- 10<sup>th</sup> Modernization of agriculture/forestry and wildlife
- 11<sup>th</sup> Decline of agriculture/forestry and wildlife
- 12<sup>th</sup> Living strategies of marine animals, coastal fishery and the environment
- 13<sup>th</sup> Wildlife and environmental education
- 14<sup>th</sup> Seminar: special lecture by a guest lecturer
- 15<sup>th</sup> Term-end exam

**【Class Style】** Omnibus-style lectures by lecturers of different specialties

☆Environment Education Subject☆ \*Refer to “I Assistant” for details

### **The Biological Environment in our Daily Lives**

ODA Shinichi, AOKI Mikiko, AN Ying, DEGUCHI Yoshitaka, ITO Kikukatsu  
1<sup>st</sup> year of all faculties: 2 credits in 2<sup>nd</sup> term, 3<sup>rd</sup> & 4<sup>th</sup> periods of Thursday

#### **【Objectives】**

This subject focuses on plants, animals and insects that are closely linked with our daily life. We discuss how environmental factors around them and the application of artificial technologies such as genetic modification have been involved in our life, how the current situation is and how future is projected to be. This subject aims to help develop environmental human resources.

#### **【Goals】**

Learn the basics for acquiring skills to act independently by being aware of environmental issues and exploring “what we can do” and “what we have to do” now in terms of the bio-environment around us.

#### **【Outline】**

Featuring animals, plants and insects that are closely associated with our daily life, five lecturers will explain and present problems in easy-to-understand ways on how environmental factors around them and the application of artificial technologies including genetic modification have been involved in our life, how the current situation is and how future is projected to be.

Topics include: insects’ environmental resistance, medical insects and global warming, creatures that live by using human as their “environment” (parasites,) survival strategies of parasites (coexistence or parasitizing?), parasitic disease common to human and animals, cold environment, thermogenic plants, swamp cabbage, distribution and biology of wildlife in Japan, damages in farms and forests caused by wildlife, current habitat environment of wildlife, problems in wildlife management and possibility of recycling wastes generated from food factories.

**【Class Style】** Mostly lectures using projectors. Materials may be distributed. Note that some of the lectures are intensive ones.

☆ESD subject : Human and Culture☆ \*Refer to “I Assistant” for details

### **Introduction to Ethics**

KOBAYASHI Mutsumi, ECS1 for ESD

1<sup>st</sup> year of Humanities & Social Sciences, 1<sup>st</sup> & 2<sup>nd</sup> year of Education, 2<sup>nd</sup> year of Engineering: 2 credits in 2<sup>nd</sup> term, 3<sup>rd</sup> & 4<sup>th</sup> periods of Tuesday

#### **【Objectives】**

Understand basic issues of applied ethics

#### **【Goals】**

Regarding the issues in applied ethics;

- (1) Can understand how the relevant science/technologies are working;
- (2) Can remove conceptual confusion and present questions from the viewpoint of casuistry; and
- (3) Can think of solutions to them independently.

#### **【Outline】**

A wide range of ethical problems have been emerging in the modern society along with the development of science.

This subject overviews;

- (1) What the specific problems are,
- (2) What ethical implication the problems have, and
- (3) How we should cope with the problems

from the viewpoint of applied ethics (war ethics, technology ethics, economic ethics and sports ethics.)

**【Class Style】** Lectures

☆ESD subject : Human and Culture☆ \*Refer to “IAssistant” for details

## Introduction to Ethics

USAMI Kousei, EC2 for ESD

1<sup>st</sup> year of Agriculture: 2 credits in 2<sup>nd</sup> term, 5<sup>th</sup> & 6<sup>th</sup> periods of Thursday

### 【Objectives】

We learn from the history of ideas, what questions have been asked in ethics and what answers have been given to them. Students think about the questions by themselves to understand the features of ethical thought and will eventually be able to explain and answer the modern ethical problems.

### 【Goals】

- Can explain modern ethical challenges from the ethical viewpoint
- Can explain one's view of ethical challenges logically

### 【Outline】

We have a basic question, “Why should we be ethical?” This is a matter of ethical rationalization. How do ethical values and standards differ from other values or standards? By comparing the rationalization of them, we discuss the features of ethical standards and further understand the compelling force of ethical instruction as well as meaning of ethical judgment.

Then students will understand the ethical concept of “goodness,” “virtue,” “justice,” “happiness,” “freedom,” “love,” relations among them, and the historical changes of their conceptual meaning, by which they learn the basic thought in ethics as well as obtain clues to think about the modern challenges of applied ethics.

### 【Class Style】 Lectures

☆ESD subject : Human and society☆ \*Refer to “IAssistant” for details

## Community and Life

YAMAZAKI Kenji, ECMS for ESD

1<sup>st</sup> year of Humanities & Social Sciences, 1<sup>st</sup> & 2<sup>nd</sup> year of Education, 2<sup>nd</sup> year of Engineering: 2 credits in 1<sup>st</sup> term, 3<sup>rd</sup> & 4<sup>th</sup> periods of Tuesday

### 【Objectives】

Our primary task is to “learn from our local community.” This subject focuses on the perspectives of “Think globally, act locally,” “Sustainable Development,” and “Education for Sustainable Development” by looking at Tokyo Bay as an example. Methods are shown for presenting the facts obtained by on-site observation/interviews and backing up the trend of those facts using statistics.

### 【Goals】

Development involves both light and shadow. We seek to nurture the competency to look at the shadow, which is the challenge facing the community. This subject aims to establish styles to learn from what is happening in the community and to develop the competency to identify the actual condition of the community.

### 【Outline】

Understand the significance of focusing on Tokyo Bay in order to realize sustainability of Tokyo.

We begin by overviewing the history of the reclamation of Tokyo Bay. The bay has been reclaimed since Edo Period. When did the ecosystem begin to be destroyed? What is land filling in the first place? We look at again the land filling of Tokyo Bay comparing with Isahaya Bay in Kyushu and the Netherlands Delta Work. How was Tokyo Bay reclaimed? We learn about the waiver of fishery right, which has been the premises of land filling in the case of Tokyo and Chiba.

Then our focus goes to current fishery in Tokyo Bay. Urban fishery Case I: Tridacna of Shiba and correspondence of fishermen to the land filling. Urban fishery II: Fishery in Funabashi and conservation of the coastal area. Using these cases we want to discuss deeply whether the concept of urban fishery can exist or not. Movements by fishermen and citizens are indispensable for marine conservation. Grass-roots movements played significant roles to conserve Sanbanse. The case of Shintomizu, a fishery cooperative that obtained the fishery right, will also be introduced.

Meanwhile we look at coastal development and land readjustment. We will review land readjustment by looking at the development of Kasai in southern Edogawa Ward, Tokyo. Reviewing historic outline of Tokyo's urban planning, development and current condition of the No.13 area will lead us to identify where they have sought future prospects of the city.

Eventually we come back to the ocean again and explore the relations between the ocean and our life, how fishermen are planting trees and how local woodland and local coasts are, learning about the origin of our interaction with the ocean by looking at cases in Iwate.

【Class Style】 Mostly lectures, including debates and presentations



☆ESD subject : Human and society☆ \*Refer to “I Assistant” for details

### **Learning in Practice How to Organize a Sustainable Community**

YAMAZAKI Kenji, FUKUNAGA Yoshihiro, ECMS for ESD

1<sup>st</sup> & 2<sup>nd</sup> year of all faculties: 2 credits in 1<sup>st</sup> term, 11<sup>th</sup> & 12<sup>th</sup> periods of Wednesday

#### **【Objectives】**

Community activation is a big challenge across Japan but there are no royal roads to realize that. The way to approach the challenge can be found by identifying what exactly the challenge of the community is and working out independently how to cope with it. Let us learn in a practical manner how to “develop” a sustainable community. We will think about this challenge in Iwate, which will help us find new Iwate. Mayors of Tohno, Kuzumaki, Iwaizumi and Takizawa will talk to us. We hope students will make the most of the opportunity.

#### **【Goals】**

Identify what possibilities communities have by looking at the examples of communities solving specific big problems facing them. Seek to develop skills to access specific challenges of a community by linking sustainability and development. Establish the perspective of “Think globally and act locally.”

#### **【Outline】**

Not depend on Tokyo but show our own ways and involve Tokyo into it. Iwate has a lot of cases of community revitalization. What is the most essential for us is to learn from them. We will find there the common theme of “sustainable community building.” On the other hand seeing the work from a broader perspective is also important. Each community has some problems to solve. When a negative problem got turned into something positive, the community revitalization approach would be materialized into a sustainable shape. Every one of our guest speakers (mayors of Tohno, Kuzumaki, Iwaizumi and Takizawa) are now working at the frontline of this “battle.” They are embodying how rich it is to learn from communities. It’s up to the students if they can appreciate the richness or not. It’s highly likely that this subject will provide a golden opportunity for those who want to be a public servant to talk with mayors in person. This subject may be an only opportunity to talk with them during student life. Make the most of this precious opportunity.

**【Class Style】** Mayors of Tohno, Kuzumaki, Iwaizumi and Takizawa of Iwate will be invited to speak for this subject, which will not be given by lectures alone, but will often develop into a debate involving students.

☆ESD subject : Human and society☆ \*Refer to “I Assistant” for details

### **Civil Life and Law**

MATSUOKA Katsumi, E12 for ESD

2<sup>nd</sup> year of Humanities/Social Sciences, Engineering and Agriculture: 2credits in 2nd term, 1<sup>st</sup> & 2<sup>nd</sup> term of Tuesday

#### **【Objectives】**

This subject aims that students who are starting to learn laws will feel closer to laws and those who take this subject as a general education course will develop their education by learning how one can see something from a legal point of view. The lectures in this subject have an aspect of an ESD subject. We will discuss current environmental issues from the legal viewpoint.

#### **【Goals】**

Understand legal articles in newspapers. Acquire basic quality as part of workforce after graduation, being able to comment the articles from a viewpoint of a citizen.

#### **【Outline】**

Learn the gross outline of the relations between society and laws, and the outline of civil laws. Although this subject does not focus on reading documents written in foreign languages, we will use documents in English for thinking about the relations between laws and society (up to 30 percent of the classes.) The term-end exam may include questions based on those English documents. Students who scored a certain level in the English exam of the National Center Test for Universities will not have difficulties in reading English materials used in this subject.

**【Class Style】** Lectures. Often answer questions in response cards distributed during class.

☆ESD subject : Human and society☆ \*Refer to “IAssistant” for details

### **Modern Society and Economy**

FUJIWARA Chisa, S1 for ESD

1<sup>st</sup> year of Humanities/Social Sciences and Engineers, 1<sup>st</sup> & 2<sup>nd</sup> year of Agriculture : 2credits in 2<sup>nd</sup> term, 1<sup>st</sup> & 2<sup>nd</sup> periods of Wednesday

#### **【Objectives】**

We will discuss how our “choices” or “judgments” in our life are limited by the socioeconomic structure and what they mean to and how they affect the society and economy. We explore how modern Japanese society is working as a sustainable society by learning how our individual choices can be interpreted in terms of economics, examining the situations of other countries and changes through time.

#### **【Goals】**

Can use the basic economic concepts learned in the class in the context of actual social situation. Can explore deeply the theme each student picks up based on whatever learned in the class, and develop his/her opinions logically.

#### **【Outline】**

Learn how to see the events/situations in our life (school education, going on to higher education, getting job, wages, working hours, unemployment, marriage/child rearing, diseases/medical care, pension for the elderly, nursing care of the elderly and succession of property) in terms of economics such as labor economics, household economics, social security theory and living system economics.

#### **【Class Style】 Lectures**

☆ESD subject : Human and society☆ \*Refer to “IAssistant” for details

### **Region and Society**

YAMAZAKI Kenji, ECMS for ESD

1<sup>st</sup> year of Humanities/Social Sciences, 1<sup>st</sup> & 2<sup>nd</sup> year of Education, 2<sup>nd</sup> year of Engineering: 2 credits in 2<sup>nd</sup> term, 3<sup>rd</sup> & 4<sup>th</sup> periods of Tuesday

#### **【Objectives】**

Explore the possibility of sustainable development by looking at the specific aspects of our community. Sustainable development is an indispensable viewpoint and a challenge as well for creating the present and future. Japan, who presented this challenge at the Johannesburg Environment Conference, is an “advanced country” in terms of pollution and is expected by the world to bear responsibility to realize sustainable development. Sustainable development should not be considered to be limited to setting up an eco-system. UNESCO has presented Education for Sustainable Development. This subject aims to constitute part of the process to realize sustainability by featuring respect for the environment, respect for others of the present and future, respect for diversity and respect for resources.

#### **【Goals】**

We will present challenges in various communities. After learning the facts in the challenges, we will look at our community. If students can see our community from a new perspective, that means they have made a big step forward. Our initial goal is to know the perspectives for realizing a sustainable society.

#### **【Outline】**

Explore the possibility of sustainable development by looking at what’s happening in the community. We have three pillars for this subject, in which the challenges and key words are:

- I. Poverty and “richness” in developing countries;
- II. Natural disasters and the vulnerable; and
- III. Grass-roots citizens’ movements.

Learn a variety of perspectives toward development for sustainable world from the specific challenges of communities.

**【Class Style】** Depending on the number of students, we will include debates and presentations. The class is basically lectures but we’d like to create an interactive style of class.

☆ESD subject : Human and society☆ \*Refer to “IAssistant” for details

## ESD : Learning from Local Businesses

YAMAZAKI Kenji, FUKUNAGA Yoshihiro, ECMS for ESD

All years of all faculties: 2 credits in 2<sup>nd</sup> term, 11<sup>th</sup> & 12<sup>th</sup> periods of Wednesday

### 【Objectives】

ESD (Education for Sustainable Development) should be conducted not only in school education but everywhere in society. In businesses, which make up a major part of modern society, we can find cases where businesses approach and carry out ESD proactively. Businesses that have ESD spirit should lead the society. We can see that ESD activities can be a starting point of creating a new business.

### 【Goals】

We want students to know the dynamic development between ESD and business operation, and notice that the development is creating big business opportunities. A food business, which was trying to reduce its CO<sub>2</sub> emissions, developed a heat exchange system. The system made the company a front runner of eco-business. Now it has more sales in “eco products” than in food. This case will help students find that the possibility of ESD can expand indefinitely. Our goal is to build up ESD in our life.

### 【Outline】

Embedding ESD in business operation will help companies produce aggressive business activities and contribute to society. People would want to work for such a company. Then society develops such companies. We will invite guest speakers from local businesses and have them talk about their ESD approaches and the challenges they face. Students will commune with the ESD missions of these businesses as well as develop interest in their business operation. We will make this subject as relevant to the actual business as possible.

【Class Style】 We will have as many debates and presentations as possible to encourage students to participate in the class proactively.

☆ESD subject : Human and society☆ \*Refer to “IAssistant” for details

## Theory of Local Industry and Enterprises

NAKAMURA Kenichi, M2 for ESD

2<sup>nd</sup> & 3<sup>rd</sup> year of all faculties; 2 credits in intensive subject in 1<sup>st</sup> term, planned to be held in the 1<sup>st</sup> to 4<sup>th</sup> period of Saturday (9 classes including visit to businesses)

Class is held at AIINA Campus of Iwate Prefectural University (near West Exit of Morioka Station)

### 【Objectives】

This subject provides students who are thinking of finding a job in Iwate as one of their options opportunities to think about how they will work and live in Iwate and identify the appeals and challenges of local businesses. We will also discuss the sustainability of the community.

### 【Goals】

1. Identify the appeals of local businesses properly
  2. Identify the challenges in working and living in Iwate
  3. Learn basic skills for working and living in society after graduation in a practical manner
- \* This subject is provided as part of career education, which prepares students for their life after graduation and gives them an opportunity to think about their life course. Life includes work career. Career assistance also assists students to live independently. Challenges in employment have multiple aspects, such as employers, job seekers, community and government. Students will learn and analyze these aspects objectively in a practical manner, and present them as their own challenges.

### 【Outline】

1. Governor of Iwate, Iwate government officials and business people of Iwate will give lectures on current situations and future prospects of Iwate as well as what they expect from young people (who will bear the employment environment, industry development and the future.)
2. Local industries/businesses: Business leaders from six industry sectors will give lectures on what is attractive in local businesses, what's happening in workplaces, what skills are required and what their challenges are. Students will visit their companies to learn practically.
3. Give presentations on the challenges in working and living in Iwate and share the challenges

【Class Style】 Lectures+ information provided by local businesses + visits to businesses+ group work + group presentation \* This subject is provided jointly with Iwate Prefectural University

☆ESD subject : Task subject for 3rd & 4th year students☆ \*Refer to “IAssistant” for details

### Conservation of Urban Natural Environments

HASHIMOTO Ryoji, UMITA Teruyuki, MINAMI Masaaki, HIYANE Akira, MIYAKE Satoshi, AZUMA Atsuki, OTSUKA Naohiro, KAJIWARA Shogo, TAKEHARA Akihide, MIWA Hajime EC4 for ESD

3<sup>rd</sup> & 4<sup>th</sup> years of all faculties; 2 credits in 1<sup>st</sup> term, 3<sup>rd</sup> & 4<sup>th</sup> periods of Thursday

#### 【Objectives】

By conducting surveys and participating in activities students learn that not only government but citizens, businesses and all others have to collaborate, depending on each party's competency, to revive nature in urban areas in order to turn urban ecosystem into common properties of citizens.

#### 【Goals】

Develop interest in urban environment, greenery and living things. Get involved in community building and community activities. Develop skill to propose something such as project concepts or plans by interacting with many people.

#### 【Outline】

- 1<sup>st</sup> ESD, Subject guidance
- 2<sup>nd</sup> River environment and its regeneration
- 3<sup>rd</sup> Countermeasures to air pollution which is getting more complicated
- 4<sup>th</sup> Identify the vegetation structure of urban areas
- 5<sup>th</sup> Regeneration of local coppice and introduction to Environmental Dendrology
- 6<sup>th</sup> Create a community habitable for wild birds
- 7<sup>th</sup> Know the community and work to revitalize it
- 8<sup>th</sup> Water network that supports coexistence
- 9<sup>th</sup> Formation of Morioka City and reduction of environmental impact on it
- 10<sup>th</sup> Environmental education to develop “active citizens”
- 11<sup>th</sup> Development of environmental community
- 12<sup>th</sup>~15<sup>th</sup> Field work (observation, survey, field work, participation in activities)

【Class Style】 Lectures, practical work(observation, survey, practical work, participation in activities), presentations

【Textbook/materials】 *Toshi no Shizensaisei Planning*, 2008, by Ryoji Hashimoto and Akira Hiyane

☆ESD subject : Task subject for 3rd & 4th year students☆ \*Refer to “IAssistant” for details

### Project for the ecological city Morioka

INOUE Hiroo, EM4 for ESD

3<sup>rd</sup> & 4<sup>th</sup> years of all faculties; 2 credits in 1<sup>st</sup> term, 3<sup>rd</sup> & 4<sup>th</sup> periods of Thursday

#### 【Objectives】

This subject aims to create Ecological City Morioka. Students will learn about the community, identify challenges, work out solutions, draw up plans, present the plans to people and act independently. This subject is designed to develop skills to find out challenges, examine them, communicate with people and develop motivation to act independently.

#### 【Goals】

- Can identify problems in one's backyard
- Can think independently how to solve the problems
- Can communicate with people and act to solve problems

#### 【Outline】

This subject aims to create Ecological City Morioka. Students learn about the community, identify challenges, work out solutions, draw up plans, present the plans to people and act independently. This subject is designed to be fun like students' group activities of sports or culture.

- Discuss how Morioka is now and identify its challenges
- Listen to citizens' organizations and city officials
- Work out countermeasures, organize events and more

【Class Style】 Seminar in the campus, survey outside of the campus and planning/organization of events

☆ESD subject : Task subject for 3rd & 4th year students☆ \*Refer to “IAssistant” for details

### **Practice on the Kitakamigawa Studies**

MAKI Yonosuke, TAKEHARA Akihide, TSUKAMOTO Yoshihiro, HIGUCHI Kazushi, FURUKAWA Tsutomu, MIWA Hajime, E3 for ESD

3<sup>rd</sup> & 4<sup>th</sup> year of all faculties; 2 credits in intensive subject in 1<sup>st</sup> term

#### **【Objectives】**

Explore the interactions between Kitakami River and people/community along the river by learning the history, culture, nature (topographical features, water and creatures) in a hands-on approach. Find out how Kitakami River is managed, maintained and conserved as well as how the river is protecting the areas along it. Learn by experience that the river is still living in the local community through its interactions with local people. Develop skills to take care of primary/junior high school students in nature experience activities in order to develop skills to work as leaders of local interaction activities.

#### **【Goals】**

1. Can explain the interaction between Kitakami River and communities along it in the aspects of history, culture and nature.
2. Can explain the management and conservation of rivers by relating them to disaster prevention and safe society.
3. Fully understand and explain the role of rivers and their significance in local communities.

#### **【Outline】**

This is an intensive subject for experiencing the river and developing leadership by listening to lectures as well as looking at the sites. Day 1: lecture on “Roads on land and roads on river” that developed the natural features of Kitakami River and the culture around it. Day 2: Students deepen the knowledge of water treatment by learning water supply and sewerage systems from the viewpoint of interaction between the river and the communities along it. Day 3: Students learn about the interaction between former Matsuo Mine and Kitakami River sociologically and experience a vegetation recovery project. Day 4: They experience rafting, receive training of safety and rescuing, and learn how to teach younger students. Day 5: Fieldwork to explore insects in the river and water quality at Shizukuishi River after a lecture on river management.

**【Class Style】** Lecture and fieldwork

☆Environmental Management Subject☆ \*Refer to “IAssistant” for details

### **Environmental Management on Iwate University**

FUKUNAGA Yoshihiro, ODA Shinichi, SASAO Toshiaki, FURUKAWA Tsutomu, KAJIWARA Shogo, OTSUKA Naohiro, NAKASHIMA Kiyotaka

1<sup>st</sup> & 2<sup>nd</sup> year of all faculties: 2 credits in 2<sup>nd</sup> term, 3<sup>rd</sup> & 4<sup>th</sup> periods of Monday

#### **【Objectives】**

Learn the outline of the Environmental Management System (EMS) and relevant laws and rules. Learn the methods of internal auditing that meets ISO14001 (EMS qualification standard) to develop the competency to identify and observe the environmental problems around us, work out solutions and act to solve the problems.

#### **【Goals】**

Develop the knowledge and skills to conduct internal auditing and work as assistant auditor.

#### **【Outline】**

Learn the outline of the Environmental Management System (EMS) and relevant laws and rules. Learn the methods of internal auditing that meets ISO14001 (EMS qualification standard) to develop the competency to identify and observe the environmental problems around us, work out solutions and act to solve the problems.

**【Class Style】** Lecture and environmental survey

**【Textbook/materials】** *Iwate University Environmental Report 2009* and other documents and materials will be informed by lecturers.