

S-21 BASIN WATER ENVIRONMENTAL LEADERS CONNECT US, CONNECT THE WORLD

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1. INTRODUCTION

Asian countries are confronted with diverse environmental problems related to water quality, water resources, irrigation water use, and watershed ecosystems. The Gifu University Rearing Program for Basin Water Environmental Leaders (BWEL program) aims at fostering graduate students as environmental leaders who comprehend these environmental problems with a broad outlook, and are capable of planning and conducting the strategic solution and prevention.

2. EDUCATIONAL PROGRAM

(1) The Overview

Educational programs were organized by the BWEL promotion office through cooperation with River Basin Research Center, Graduate School of Engineering, Graduate School of Applied Biological Sciences, and Graduate School of Regional Studies. BWEL students are required to take specialized subjects related to basin water environment from the faculty where they belong, and also from other faculties. Several subjects from the field of humanities and social science are also required to take. In addition, BWEL program also provides other education programs, such as special lectures, special practice, and joint seminar, in order to achieve the educational goal.

(2) Specialized Subjects

Specialized subjects are extracted from the existing curricula of three divisions, the Division of Civil Engineering, the Division of Environmental and Renewable Energy Systems, and the Division of Agricultural and Environmental Science. BWEL students are required to take at least three subjects from their own division and at least two subjects from the other divisions. Through these subjects, they can reinforce their fundamental and specialized

background and other applicable knowledge relevant to their field.

(3) Subjects in Humanities and Social Sciences

Subjects from the field of humanities and social science are provided in order to broaden knowledge not only related to their field but also regarding to social, economic, and political aspects of environmental problems. BWEL students must take at least two courses from this field provided by Graduate School of Regional Studies. By learning these subjects, BWEL students can understand the background behind the occurrence of problems, acquire the ability of finding water environmental problems that developing countries face, and therefore acquire the ability to form strategic solutions and to design effective countermeasures.

(4) Joint Seminar

Joint seminar is a part of education program. The BWEL promotion prepares a list of presentation topics related to diverse environmental problems. BWEL students select one topic from the list, and prepare their presentation through several meetings with staff of the BWEL promotion office. The seminar starts with two 15-minute presentations, each of which is made by a team of 2-3 students. Teams are arranged to include both senior and junior students from different countries in order to smoothen the seminar process and strengthen the communication skills. The presentations are followed by two concurrent group discussions on the presentation topics. The seminar ends up with a brief summary of the group discussion by a representative student from each group.

(5) Internship Programs

BWEL students have opportunities to participate in internships in Japan and overseas. The promotion office provides two internship programs in every

year, one for international students and the other for Japanese students. The internship for international students is conducted at companies and regional agencies in Japan, where students learn advanced environmental technologies of a developed country. The internship for Japanese students is conducted at overseas, where students learn and experience environmental technologies as well as diverse environmental problems in developing countries.

(6) Special Practices and Lectures

BWEL program also provides special practices by professional experts in their field. In special practices, students learn Life Cycle Assessment (LCA), and how to utilize LCA in order to evaluate environmental businesses and technologies, such as renewable energy systems, material recycling, and energy saving technologies. During the practices, students visit and survey four business models in Gifu prefecture. Beside the special practice, for the master course students, three special lectures, "Remote sensing water environment monitoring," "Asian water treatment technology," and "Asian water environment dynamics assessment," are provided as compulsory subjects. The main purpose of these lectures is to strengthen the knowledge base of students through learning various water environmental problems in the Asian region and fundamental approaches and technologies for solving such problems. To achieve this purpose, all lectures are taught by on-site experts from educational and research institutions, administrative sectors, and enterprises.

3. ACTIVITIES

(1) Joint Environmental Education

To be environmental leaders, educational programs alone are not sufficient. BWEL program provides various activities where students integrate and utilize their knowledge. One of such activities is an annual joint environmental education with elementary school students at Water Eco Park, Kagamigahara, Gifu Prefecture. This year, about 20 BWEL students joined the activity on June 8th. Together with elementary school students, BWEL students took a tour in Gifu World Fresh Water Aquarium (Aqua Toto), conducted a field survey in the artificial stream, and played a water cycling game. Environmental education is one of the possible solutions of environmental problems. Early education plays an important role in solving water environmental issues especially in developing countries. The activity is a good opportunity for

learning many aspects of environmental education that can be transferred to people both in developed and developing countries.

(2) Lectures at High School

On July 30th, 2012, BWEL students visited Chiryu Higashi high school in Aichi Prefecture, and gave lectures on water environments in their home country and on their specific research. The purpose of the visit was to introduce sciences to high school students, to provide an opportunity of English communication, and also to explain the diversity of the world cultures, habits, and traditions. For BWEL students, the visit was a practical opportunity of giving lectures for general audience. After the lectures, the high school students and BWEL students had discussion on various topics.

(3) Joint Symposium

On December 20th, 2011, BWEL students participated in the joint symposium organized by Shizuoka, Yokohama National, and Gifu universities in Tokyo. The symposium was entitled "Reality of environmental issues in Asia & Africa: Real voices from foreign students." The purpose was to enhance awareness on environmental issues in different countries of Asia and Africa and to understand viewpoint of public and government sectors. Students from Asia and Africa joined and discussed on complicated environmental problems, and try to find solutions to the problems together. From Gifu University, BWEL students from Malaysia, Indonesia, and China had presentations on environmental problems in their countries. The symposium provided opportunities where students with different background exchange ideas and communicate with each other. The symposium, in turn, enhanced educational programs of the three universities toward their common goal "to foster global environmental leaders."

4. CONCLUSION

Recognizing that environmental problem is serious global issues, Gifu University has established BWEL program where talented students from different countries learn together to be international environmental leaders. The program provides concrete education to enhance knowledge and ability of students. Besides that, the strong network of students, companies, communities, and other institutions built through the program will extend beyond national boundary, and will contribute to saving the world environments in the future.