



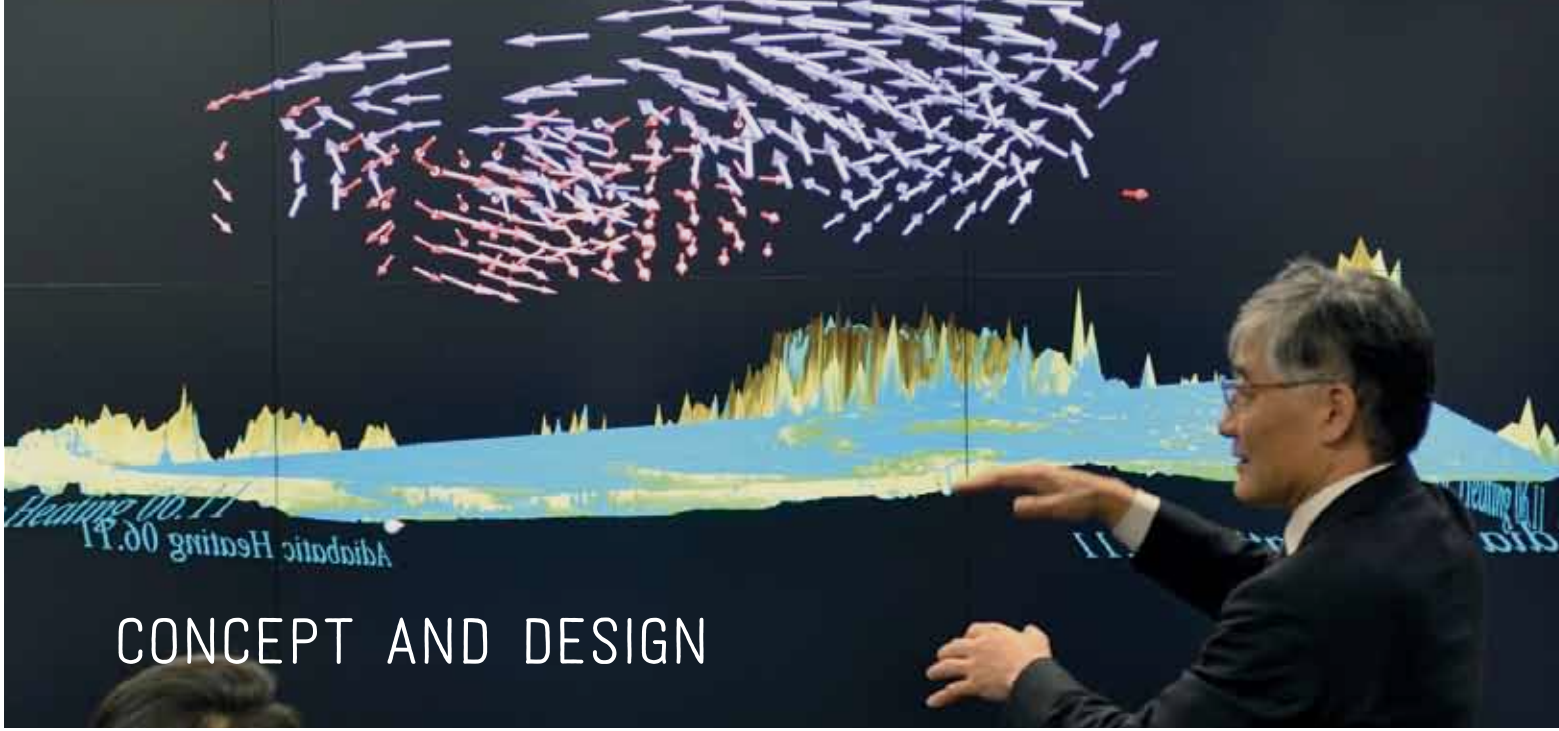
SUMMER PROGRAM SUSTAINABLE WATER MANAGEMENT IN AN ERA OF BIG DATA



25 JULY - 5 AUGUST, 2016

**VENUE: THE UNIVERSITY OF TOKYO
&
ICHARM, TSUKUBA, JAPAN**

The University of Tokyo (UTokyo) and the International Centre for Water Hazard and Risk Management (ICHARM) under the auspices of UNESCO, Public Works Research Institute (PWRI), Tsukuba, will organize a Summer Program. The course, consisting of expert lectures, technical exercises, and excursions, is designed to promote problem-solving capability for water problems with interdisciplinary approach and by exploiting various data and functions of the Data Integration and Analysis System (DIAS) of Japan. Participants will work on real problems focusing on developing resilience to disasters under the climate change, preparedness for risk of unforeseen disasters and how to introduce this risk into social management and planning for safe and naturally rich environment.



CONCEPT AND DESIGN

Systematic, meaningful, and practical

NATURAL SCIENCE AND TECHNICAL ASPECT

The emphasis is on appropriate usage of various observation data, model outputs, data integration functions of DIAS, and geospatial technologies such as GIS for resolving given problems.

SOCIO-ECONOMICAL AND MANAGEMENT ASPECT

Solution to each problem must consider the viewpoint of local society and economical possibilities to be realistic and implementable for a given country. The key procedures of consensus building and awareness raising will be introduced.

Participatory, interactive, and fun

Lectures, self-practice, group work, field visits, social event

Problem-solving oriented

Participants will be solving real case problems in concrete Asian river basins focusing on water resources issues under the changing climate including:

- water and food security
- poverty alleviation through flood disaster risk reduction
- integrated water resources management considering environment and community life

The lecture curriculum is supportive for solving the stated problems (theory background, tools, and methodology introduction) and includes introduction of real cases from Japan focusing on the process of planning → realization

Field excursions to the successful realizations:

SHIMOKUBO DAM

A multipurpose dam of a unique shape serving for flood protection, water supply, hydropower generation, and environmental conservation

SAITAMA UNDERGROUND CHANNEL

An anti-flood scheme for local residents, completed in 2006. Having employed a variety of new technologies, it is the very best of Japan's state-of-the-art civil engineering technology.

THEMATIC FOCUS

The Summer Program explores how to develop resilience to disasters under the climate change, while providing comfortable, safe, and naturally rich environment. It considers risk of unforeseen disasters and researches how to introduce this risk into social management and planning to assure sufficient preparedness. It provides knowledge on how to exploit data and data integration functions of DIAS for this purpose.

PARTICIPATION FEE AND LOGISTICS

The course participation fee is 30,000 JPY (about 280 USD), which includes organizational and field trip expenses. In addition, participants are responsible for their expenses associated with transportation (including local commuting), accommodation, meals, and travel/health insurance.

ACCOMMODATION

Participants are requested to assure accommodation in Tokyo, during the Week 1 by themselves. Several options are mentioned at the Program homepage. In Tsukuba, during the Week 2, the Organizers strongly recommend the participants to stay in the Urban Hotel Tsukuba, which is nearby the ICHARM facilities and from which a shuttle bus will be arranged for everyday commuting. Hotel reservations are assured by the Organizers but the accommodation fee will be paid by the participants (5,500 JPY per person per night, without breakfast).

All the participants, who are not long-term residents in Japan are requested to assure travel/health insurance. A proof of purchasing such insurance will be requested in advance.

ELIGIBILITY

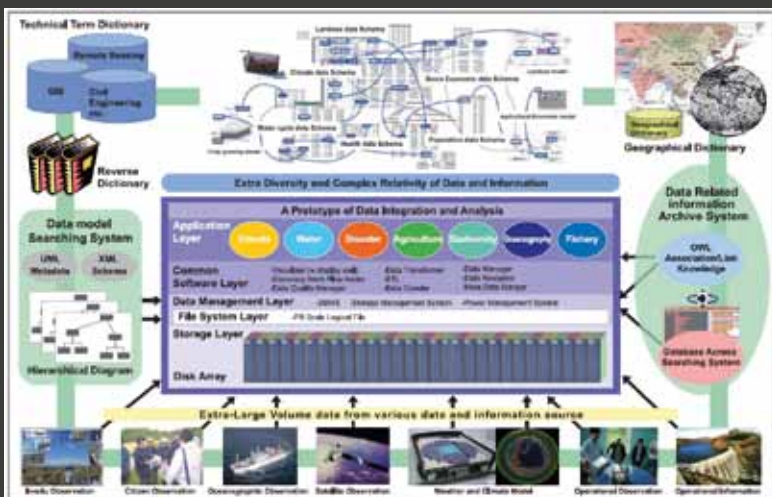
The course is open for 20 participants, both from Japan and abroad. It is mainly intended for undergraduate students, but applications by graduate and post-graduate students as well as young professionals will also be accepted and considered. All applicants must have sufficient knowledge of English, which will be the course language and must be able to attend the program for the whole duration. Applications from various majors and disciplines are welcome.

HOW TO APPLY

Applicants should fill out the on-line application form available at: The due date for application is Sunday 15th May 2016.

IMPORTANT DATES

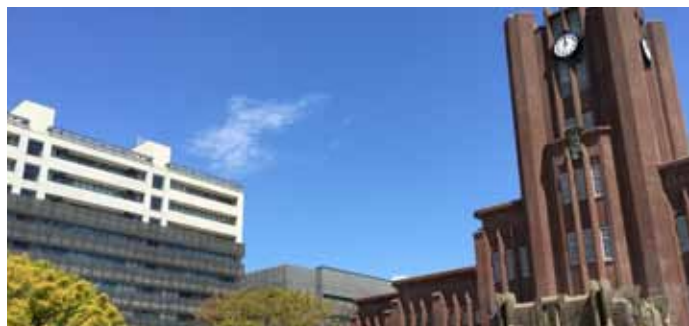
- Application Due date: **Sunday, May 15th**
- Announcement of acceptance: **Tuesday, May 24th**
- Confirmation of attendance: **Tuesday, May 31st**
- Arrival date in Tokyo: **Sunday, July 24th**
- Departure date from Tsukuba: **Saturday, August 6th**



DATA INTEGRATION AND ANALYSIS SYSTEM (DIAS)

DIAS is a project for the creation of knowledge, which can be shared worldwide. With the goal of providing access to global and regional sensing data, we have developed a pilot system for the creation of an information storage infrastructure for public benefit applications and the deepening of scientific knowledge in the areas of climate, water cycle, for application in fisheries, agriculture and biodiversity management particularly through the linking of information across disciplines. This approach has proven to be effective with the successful implementation of our pilot project.

PROGRAMME WEEK 1 AT UTOKYO



SESSION 1
09:00-10:30

SESSION 2
10:45-12:15

SESSION 3
13:45-15:15

SESSION 4
15:30-17:00

7.25
(MON)

HONGO
CAMPUS

Introduction



Current Issues on Water

Toshio Koike
Professor,
Dept. Civil Eng., UTokyo;
Director, ICHARM



*Case Problem Introduction
and Group Formation*

**Akiyuki Kawasaki and
Petra Koudelova**
Dept. of Civil Eng., UTokyo



*Group Discussion and
First Presentations*

**Akiyuki Kawasaki and
Petra Koudelova**
Dept. of Civil Eng., UTokyo

7.26
(TUE)

KOMABA
CAMPUS



Global Water Circulation

Taikan Oki
Professor,
Institute of Industrial Science,
UTokyo



*Integrated Water Resources
Management towards Sound
Water Cycle*

Kenzo Hiroki
Research Coordinator,
ICHARM



*Big Data and
AI creates new world*

Masaru Kitsuregawa
Professor, Institute of Industrial
Science, UTokyo



*DIAS Introduction and
Demonstration*

**Toshio Koike and
Akiyuki Kawasaki**
UTokyo

7.27
(WED)

HONGO
CAMPUS



DIAS CMIP5 Tool – Model Selection

Petra Koudelova
Research Associate, Dept. Civil Eng., UTokyo



DIAS CMIP5 Tool – Precipitation Bias Correction

Petra Koudelova
Research Associate, Dept. Civil Eng., UTokyo

7.28
(THU)

GUNMA
PREFECTURE



Shimokubo Dam
Hominoyama, Fujioka, Gunma Prefecture



7.29
(FRI)

HONGO
CAMPUS



GIS: Introduction

Akiyuki Kawasaki
Project Associate Professor,
Dept. Civil Eng., UTokyo



GIS: Exercise

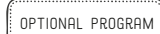
Akiyuki Kawasaki
Project Associate Professor,
Dept. Civil Eng., UTokyo



GIS: Hands-on / Self study

Akiyuki Kawasaki
Project Associate Professor,
Dept. Civil Eng., UTokyo

7.30
(SAT)



Optional additional CMIP5 and/or GIS hands-on

Free time



PROGRAMME WEEK 2 AT ICHARM, TSUKUBA

SESSION 1
09:00-10:30

SESSION 2
10:45-12:15

SESSION 3
13:45-15:15

SESSION 4
15:30-17:00

7.31
(SUN)

OPTIONAL PROGRAM

Hiking – Mt. Tsukuba



8.1
(MON)

TSUKUBA

09:00-12:00



Excursion to Japan Aerospace Exploration Agency (JAXA)

13:00-16:00



*Metropolitan Area
Outer Underground Discharge Channel*

8.2
(TUE)

ICCHARM
TSUKUBA



ICCHARM Introduction

TBD
ICCHARM



*Social Science Approach to
Water Related Disasters*

Haruo Hayashi
Professor
DPRI, Kyoto University



Hydrological and Flood Modeling

Yoshihiro Shibuo
Research Specialist, ICHARM

8.3
(WED)

ICCHARM
TSUKUBA



*River and Water-related
Disaster Management*

TBD
ICCHARM



*Economic Evaluation of Natural
Disaster and Mitigation Policy*

Muneta Yokomatsu
Associate Professor,
Disaster Prevention Research
Institute, Kyoto University



Hydrological and Flood Modeling

Yoshihiro Shibuo
Research Specialist, ICHARM

8.4
(THU)

ICCHARM
TSUKUBA



Hydrological and Flood Modeling

Yoshihiro Shibuo
Research Specialist, ICHARM



Discussion and preparation for presentation

8.5
(FRI)

ICCHARM
TSUKUBA



Discussion and preparation for presentation



Student presentations

*Closing ceremony and
reception*

CONTACT

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