

## **Subject: Basic Concepts of Integrated Flood Risk management (IFRM)**

Course number : DMP282E

Instructor : Prof. Kuniyoshi TAKEUCHI

Term / Time : Fall through Winter

### 1 Course Description

This course provides the basic concepts of “Integrated Flood Risk Management (IFRM)” as part of Integrated Water resources Management (IWRM). The mechanism of disaster risk development with natural hazard, societal vulnerability, exposure and coping capacity will be emphasized. New concepts of IWRM at basin scale will be introduced and, as concrete examples, Japanese flood management experiences and global activity trends will be introduced emphasizing good practices and key for success. Anticipated future direction of risk management to cope with societal changes and global climate changes will also be covered.

### 2 Course Outline (Course Topics)

#### Week

1. Introduction: What is natural disaster? Risk, Hazard and Vulnerability
2. PAR Model (1) Root causes, progress of dynamic pressure and unsafe conditions
3. PAR Model (2) Concrete examples
4. ACCESS Model
5. Disaster management cycle; Hyogo Framework for Action
6. IFRM and traditional FRM; IFRM as part of IWRM
7. Concept of IWRM (1): Agenda 21, Global Water Partnership
8. Concept of IWRM (2): Guideline for IWRM at basin scale
9. Japanese experiences (1) Flood damages and flood control investment
10. Japanese experiences (2) Ground subsidence control
11. Japanese experiences (3) Comprehensive flood control measures and focus expansion from river to basin
12. Global trends (1) Impact of climatic change
13. Global trends (2) International actions
14. Future Issues of IFRM: Adaptation; Aging society; Depopulation; Social Capital;
15. Examination

### 3 Grading

Active participation(30%), Reports(40%), Final Examination(30%)

### 4 Textbooks

#### 4-1 Required

1. Ben Wisner, Piers Blaikie, Terry Cannon and Ian Davis, At Risk -natural hazards, people’s vulnerability and disasters- (Routledge, London & NY, 2004)
2. UNESCO IWRM guidelines steering committee, IWRM Guidelines at River Basin Level: Part 1-1 Principles, 2-1 Part 2-1 Coordination, 2-2 Flood Management, 2-3 Irrigation. (UNESCO, 2009)