

Subject: Sustainable Reservoir Development & Management

Course number : DMP 383E

Instructor : Prof. Norihisa MATSUMOTO

Term / Time : Fall through Winter

1 Course Description

This course provides the basic ideas of dam reservoir design, construction and operation & maintenance. The lecture starts from the purposes of dam reservoirs and looks into their environmental and societal impacts. The lecture covers the basic methodologies of project planning, site selection, design, construction, environmental impact assessment, sediment management and operation and maintenance of dam reservoirs. The students are expected to experience a preliminary but concrete process of environmental assessment of reservoirs and gets insight of the role of reservoirs as one of adaptation measures of climate changes.

2 Course Outline (Course Topics)

Week

- 1: Outline of Dam Engineering
- 2: Flood Control Plan
- 3: Flood Control Operation
- 4: Seismic Design for Dams
- 5: Latest Technology for Concrete Dam (1)
- 6: Latest Technology for Concrete Dam (2)
- 7: Environmental Impact of Dams (1)
- 8: Environmental Impact of Dams (2)
- 9: Sediment Management in Reservoirs (1)
- 10: Sediment Management in Reservoirs (2)
- 11: Dam Construction (1)
- 12: Dam Construction (2)
- 13: Dam Management
- 14: Effective Use of Existing Dams
- 15: Roles of Dams in the 21st Century

3 Grading

Class participation 50%, Reports 30% Presentation 20%

If you miss the deadline for reports, your reports will only be evaluated for a certain percentage of what they are supposed to be:

Up to seven days: 70%, Eight days or more: 50%

4 Textbooks

4-1 Required

Japan Commission on Large Dams, "Dams in Japan ---Past, Present and Future"
A Balkema Book, CRD Press 2009

4-2 Others