

<b>Course number</b>	U-LAS70 10002 SE50				
<b>Course title (and course title in English)</b>	ILAS Seminar-E2 :Dams and Reservoirs (ダムと貯水池) ILAS Seminar-E2 :Dams and Reservoirs		<b>Instructor's name, job title, and department of affiliation</b>	Disaster Prevention Research Institute Professor, Sameh Kantoush	
<b>Group</b>	Seminars in Liberal Arts and Sciences		<b>Number of credits</b>	2	<b>Number of weekly time blocks</b> 1
<b>Class style</b>	seminar (Face-to-face course)	<b>Year/semesters</b>	2025・First semester		<b>Quota (Freshman)</b> 10 (5)
<b>Target year</b>	Mainly 1st year students	<b>Eligible students</b>	For all majors		<b>Days and periods</b> Tue.5
<b>Classroom</b>	3B, Yoshida-South Campus Academic Center Bldg. North Wing			<b>Language of instruction</b>	English
<b>Keyword</b>	Dams and Reservoirs / Dam technologies / Reservoir sedimentation / River ecosystem / Dam impacts				
<b>[Overview and purpose of the course]</b>					
<p>In Japan, there are more than 3000 dams with one or multiple functions, which become essential for such modern society. Storage reservoirs provide important functions such as disaster prevention, flood mitigation, energy production, and water supply, all of which are vital for humankind. Dam related issues have become more daring, with raising concerns about environment and increase of sedimentation issues in reservoirs. Removing stored sediments is often recommended as a more effective approach to recover reservoir storage capacities than building new dams.</p> <p>This seminar course introduces students to dam technologies involving river engineering, ecosystem, flood and sediment issues. We will discuss about dam impacts and modern techniques that lead to increase dam service life. During seminar series videos of real dams and reservoirs and actual examples will be discussed. The students get the opportunity to visit dam site and understand the real situation of river ecosystem. Finally, a presentation will be required after the dam visit to demonstrate the learned principles applied in the student's majors.</p>					
<b>[Course objectives]</b>					
<p>At the end of this course, the student will be able to understand:</p> <p>the different types and classifications of dams;</p> <p>the comprehensive sediment management techniques;</p> <p>the sediment management techniques;</p> <p>The importance of dams and how to upgrade.</p>					
<b>[Course schedule and contents)]</b>					
<p>Week 1: Introduction- Main functions and types of dams &amp; reservoirs</p> <p>Week 2: Basic and principles of dams and reservoirs</p> <p>Week 3: Water supply and climate change</p> <p>Week 4: Modern technologies for large dams</p> <p>Week 5: Dam impacts</p> <p>Week 6: Dam field trip</p> <p>Weeks 7-9: Sediment management techniques</p> <p>Week 10: Reports and Presentations</p>					
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Weeks 11-13: Upgrading and retrofitting of aging dams

Week 14: Sustainable management of reservoir

Week 15: Feedback and summary of the course

**[Course requirements]**

None

**[Evaluation methods and policy]**

Reports and presentations (100%)

**[Textbooks]**

Instructed during class

**[References, etc.]**

( **References, etc.** )

Annandale, G. 『Quenching the Thirst: Sustainable Water Supply and Climate Change』 ( Create Space Independent Publishing Platform ) ISBN:1480265152, 9781480265158 ( [https://www.hydropower.org/sites/default/files/publications-docs/Annadale\\_QuenchingTheThirst.pdf](https://www.hydropower.org/sites/default/files/publications-docs/Annadale_QuenchingTheThirst.pdf) )

**[Study outside of class (preparation and review)]**

Reading, presenting, and discussing some chapters of the reference book(Quenching the Thirst: Sustainable Water Supply and Climate Change)

**[Other information (office hours, etc.)]**

**[Essential courses]**