

Course Information						
Year	AY 2026-2027		School	UNU-IAS		
Course Title	Water Resources Systems					
Instructor & Contact Information	Kitawaki Hidetoshi (kitawaki@toyo.jp)					
Term/Day/Period	AY 2026 Autumn /Oct. 2026 – Jan. 2027 (First day of class: 13 October 2026 / Tuesday 1 st and 2 nd periods (only in specified weeks))					
Category	Core Course or Elective Course		Eligible Year	1 st year and above	Credits	2
Classroom	Lecture room, 6th floor in the UNU building		Campus	UNU-HQ, Tokyo, Japan		
Main Language	English					
Class Modality Categories	On-Campus					
Course Code	621080					
Level	Graduate-level		Types of lesson	Lecture		

Syllabus Information	
Subtitle	Water, Environmental Sanitation and Waste Management for Health／Japanese Experiences on Environmental Management
Course Description (Word limit: 200)	<i>The final purpose of this course is for students to have a clear understanding of Japanese experiences on the improvement of living environment and how to adapt it to developing countries. Before 1970, Japanese living conditions in suburban and rural areas were as poor as that in developing countries now. It is important for students to learn Japan's history of environmental improvement and the way to adapt it to developing countries, where they may be involved in development projects in the future. This lecture also covers additional information such as health aspects, alternative technology of water supply and sanitation, examples of technical cooperation projects etc.</i>
Objectives and Learning Goals (Bullet points)	• Students will understand History of Japan's water supply, sanitation and solid waste management, industrial pollution control. • Students will understand alternative technologies to improve living conditions. • Students will understand examples of development projects.
Requirements <i>This part should include the expected working hours.</i>	Before class: Students are requested to read distributed handouts (60 min.). After class: Students collect related information for the follow-up of the class (60 min.).

Course Outline Detailed information could be provided on Moodle such as the information of the lecturers, etc.	<table><tr><th>Lecture</th><th>Outline</th></tr><tr><td>1</td><td>Introduction</td></tr><tr><td>2</td><td>Water supply -Life without enough water and water related diseases</td></tr><tr><td>3</td><td>Water supply -Wells and handpumps</td></tr><tr><td>4</td><td>Water supply -Development of piped water supply systems</td></tr><tr><td>5</td><td>History of Japan's human excreta management</td></tr><tr><td>6</td><td>Modern on-site sanitation -Johkasou</td></tr><tr><td>7</td><td>Modern off-site sanitation -Sewage system</td></tr><tr><td>8</td><td>Solid waste management -Problems of solid waste management and health problems</td></tr><tr><td>9</td><td>Solid waste management -Treatment and final disposal</td></tr><tr><td>10</td><td>Solid waste management - Recycling and environmental education</td></tr><tr><td>11</td><td>Industrial pollution Control</td></tr><tr><td>12</td><td>Administration system of Japanese environmental management</td></tr><tr><td>13</td><td>Adaptation of Japanese experiences to developing countries -Water supply and sanitation projects</td></tr><tr><td>14</td><td>Supplementary topics on water supply, sanitation and solid waste management</td></tr><tr><td>15</td><td>Wrap-up</td></tr></table>	Lecture	Outline	1	Introduction	2	Water supply -Life without enough water and water related diseases	3	Water supply -Wells and handpumps	4	Water supply -Development of piped water supply systems	5	History of Japan's human excreta management	6	Modern on-site sanitation -Johkasou	7	Modern off-site sanitation -Sewage system	8	Solid waste management -Problems of solid waste management and health problems	9	Solid waste management -Treatment and final disposal	10	Solid waste management - Recycling and environmental education	11	Industrial pollution Control	12	Administration system of Japanese environmental management	13	Adaptation of Japanese experiences to developing countries -Water supply and sanitation projects	14	Supplementary topics on water supply, sanitation and solid waste management	15	Wrap-up
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Course Readings	Materials are distributed at lectures																																
Reference	JICA, Japan's Experiences on Water Supply Development, 2017 2017https://www.jica.go.jp/english/activities/issues/water/materials_01.html JICA, Japan’s Experiences on Waste Management, 2022 https://www.jica.go.jp/english/activities/issues/env_manage/waste_manage_exp.html																																
Grading Policy	<table><tr><th>Rate</th><th>%</th><th>Evaluation Criteria</th></tr><tr><td>Exam</td><td>30%</td><td>On behalf of exam, end-of-term presentations are evaluated</td></tr><tr><td>Papers</td><td>30%</td><td>Short reaction papers for each class are evaluated</td></tr><tr><td>Class Participation</td><td>30%</td><td>80% attendance is required for obtaining credits</td></tr><tr><td>Others</td><td>10%</td><td>Proactivity is an asset for the evaluation</td></tr></table> -----SAMPLE----- Presentation performance 8/10 Reaction papers’ performance 7/10 Attendance 12/15 Proactivity 10 Total score= $\frac{30 \times 8}{10} + \frac{30 \times 7}{10} + \frac{12}{15}$ + 30*12/15 (Exam) (Paper*participation) (Participation) = 75	Rate	%	Evaluation Criteria	Exam	30%	On behalf of exam, end-of-term presentations are evaluated	Papers	30%	Short reaction papers for each class are evaluated	Class Participation	30%	80% attendance is required for obtaining credits	Others	10%	Proactivity is an asset for the evaluation																	
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Note / URL if any	URL of the web page of the lecturer is: https://kitawakitoyo.wixsite.com/kitawaki-lab																																