

1	2	3	4	5	6	7	
Week	Final Ability of each learning stage	Study Materials/ Subjects	Learning methods	Time	Student Learning Experience	Evaluation	
						Criteria & Indicators	Weight (%)
1	Able to understand local to global hydroclimatic challenges, from current conditions to future challenges	Introduction to hydroclimatology includes its boundaries: 1. Environmental Climatology 2. Environmental Climatology 3. Environmental phenomena related to global and local hydroclimatology	Lectures, questions and answers, and discussions	216minutes (0.25 ECTS) Consist of: • <i>Lecture = 1x 120 minutes</i> • <i>Q&A =1 x 20 minutes</i> • <i>Discussion = 1 x 20 Minutes</i> • <i>Presentation = 1 x 20 minutes</i> <i>Individual Tasks (Self Work) = 1 x 36 minutes/day (16 weeks)</i>	Students listen to the lecturer's explanation and answer the lecturer's questions, as well as discuss	Presence and Activeness in Understanding Discussion	5
2	Able to understand the hydrological cycle, hydrolimnology, types, zones, character systems, vulnerability cases in each water body	Climatological and Hydrological Cycle Environment: 1. Fresh water 2. brackish water 3. Sea water	Lectures, questions and answers, and discussions	216 minutes (0.25 ECTS) Consist of: • <i>Lecture = 1x 120 minutes</i> • <i>Q&A =1 x 20 minutes</i> • <i>Discussion = 1 x 20 Minutes</i> • <i>Presentation = 1 x 20 minutes</i> <i>Individual Tasks (Self Work) = 1 x 36</i>	Students listen to the lecturer's explanation and answer the lecturer's questions, as well as discuss	Presence and Activeness in Understanding Discussion	5

				<i>minutes/day (16 weeks)</i>			
3	Able to understand the interrelationships of the hydrological cycle in ecosystems	1. The linkage of biohydroclimate with aquatic ecosystems, 2. The linkage of various development activities on aquatic ecosystems & hydro-oceanography, 3. Coastal boundaries, coastal hydroclimate land & waters, 4. Components of the hydro-oceanographic environment	Lectures, questions and answers, and discussions	216 minutes (0.25 ECTS) Consist of: • <i>Lecture = 1x 120 minutes</i> • <i>Q&A = 1 x 20 minutes</i> • <i>Discussion = 1 x 20 minutes</i> • <i>Presentation = 1 x 20 minutes</i> <i>Individual Tasks (Self Work) = 1 x 36 minutes/day (16 weeks)</i>	Students listen to the lecturer's explanation and answer the lecturer's questions, as well as discuss	Presence and Activeness in Understanding Discussion	5
4	Able to describe problems and provide an evaluation of environmental impacts	Hydrosean environmental impact forecast case study and environmental impact evaluation	Lectures, questions and answers, and discussions	216 minutes (0.25 ECTS) Consist of: • <i>Lecture = 1x 120 minutes</i> • <i>Q&A = 1 x 20 minutes</i> • <i>Discussion = 1 x 20 minutes</i> • <i>Presentation = 1 x 20 minutes</i> <i>Individual Tasks (Self Work) = 1 x 36 minutes/day (16 weeks)</i>	Students listen to the lecturer's explanation and answer the lecturer's questions, as well as discuss	Presence and Activeness in Understanding Discussion	5
5	Able to understand the use of coastlines in a case study	Utilization of shoreline data, estuaries (characteristics,	Lectures, questions and	216 minutes (0.25 ECTS) Consist of:	Students listen to the lecturer's	Presence and Activeness in	5

		ecosystem components, functions, type of formation, capacity, hydraulic system	answers, and discussions	• <i>Lecture = 1x 120 minutes</i> • <i>Q&A = 1 x 20 minutes</i> • <i>Discussion = 1 x 20 minutes</i> • <i>Presentation = 1 x 20 minutes</i> <i>Individual Tasks (Self Work) = 1 x 36 minutes/day (16 weeks)</i>	explanation and answer the lecturer's questions, as well as discuss	Understanding Discussion	
6	Able to understand climate change events	Climate change and its impact on the resilience of the terrestrial & coastal water environment: - Problem - Impact	Lectures, questions and answers, and discussions	216 minutes (0.25 ECTS) Consist of: • <i>Lecture = 1x 120 minutes</i> • <i>Q&A = 1 x 20 minutes</i> • <i>Discussion = 1 x 20 minutes</i> • <i>Presentation = 1 x 20 minutes</i> <i>Individual Tasks (Self Work) = 1 x 36 minutes/day (16 weeks)</i>	Students listen to the lecturer's explanation and answer the lecturer's questions, as well as discuss	Presence and Activeness in Understanding Discussion	5
7	Able to understand climate change events	Climate change and its impact on the resilience of the terrestrial & coastal water environment: Sustainable development based on the carrying capacity of marine resources	Lectures, questions and answers, and discussions	216 minutes (0.25 ECTS) Consist of: • <i>Lecture = 1x 120 minutes</i> • <i>Q&A = 1 x 20 minutes</i> • <i>Discussion = 1 x 20 minutes</i>	Students listen to the lecturer's explanation and answer the lecturer's questions, as well as discuss	Presence and Activeness in Understanding Discussion	5

				• <i>Presentation = 1 x 20 minutes</i> <i>Individual Tasks (Self Work) = 1 x 36 minutes/day (16 weeks)</i>			
8	UTS	Meeting Material 1- 9	Written test	216 minutes of processing time or the equivalent of 0.25 ECTS	Students working on UTS questions	Completeness and correctness of explanation and accuracy of understanding	5
9	Able to understand climate change events	Climate change and its impact on the resilience of the terrestrial & coastal water environment: - Green economy (understanding, principles, indicators, legal basis, policies) - Blue economy (understanding, principles, indicators, legal basis, policies)	Lectures, questions and answers, and discussions	216 minutes (0.25 ECTS) Consist of: • <i>Lecture = 1x 120 minutes</i> • <i>Q&A = 1 x 20 minutes</i> • <i>Discussion = 1 x 20 minutes</i> • <i>Presentation = 1 x 20 minutes</i> <i>Individual Tasks (Self Work) = 1 x 36 minutes/day (16 weeks)</i>	Students listen to the lecturer's explanation and answer the lecturer's questions, as well as discuss	Presence and Activeness in Understanding Discussion	5
10	Able to describe environmental management strategies	Environmental management strategy for disaster mitigation	Lectures, questions and answers, and discussions	216 minutes (0.25 ECTS) Consist of: • <i>Lecture = 1x 120 minutes</i> • <i>Q&A = 1 x 20 minutes</i> • <i>Discussion = 1 x 20</i>	Students listen to the lecturer's explanation and answer the lecturer's questions, as well as discuss	Presence and Activeness in Understanding Discussion	5

				<i>minutes</i> • <i>Presentation = 1 x 20 minutes</i> <i>Individual Tasks (Self Work) = 1 x 36 minutes/day (16 weeks)</i>			
11	Able to understand hydroclimatic phenomena	The hydroclimatic phenomenon is Acid rain and its impact on the environment: - Formation of acid in the atmosphere - Explanation of acid rain - Causes and effects of acid rain - Environmental variables that can have a synergistic effect with acid rain	Lectures, questions and answers, and discussions	216 minutes (0.25 ECTS) Consist of: • <i>Lecture = 1x 120 minutes</i> • <i>Q&A = 1 x 20 minutes</i> • <i>Discussion = 1 x 20 minutes</i> • <i>Presentation = 1 x 20 minutes</i> <i>Individual Tasks (Self Work) = 1 x 36 minutes/day (16 weeks)</i>	Students listen to the lecturer's explanation and answer the lecturer's questions, as well as discuss	Presence and Activeness in Understanding Discussion	5
12	Able to recognize spatial modeling related to hydroclimatology studies	Spatial modeling for studies related to hydroclimatology	Lectures, questions and answers, and discussions	216 minutes (0.25 ECTS) Consist of: • <i>Lecture = 1x 120 minutes</i> • <i>Q&A = 1 x 20 minutes</i> • <i>Discussion = 1 x 20 minutes</i> • <i>Presentation = 1 x 20 minutes</i> <i>Individual Tasks (Self Work) = 1 x 36</i>	Students listen to the lecturer's explanation and answer the lecturer's questions, as well as discuss	Presence and Activeness in Understanding Discussion	5

				<i>minutes/day (16 weeks)</i>			
13	Able to recognize spatial modeling related to hydroclimatology studies	Spatial modeling for studies related to hydroclimatology	Lectures, questions and answers, and discussions	216 minutes (0.25 ECTS) Consist of: • <i>Lecture = 1x 120 minutes</i> • <i>Q&A = 1 x 20 minutes</i> • <i>Discussion = 1 x 20 minutes</i> • <i>Presentation = 1 x 20 minutes</i> <i>Individual Tasks (Self Work) = 1 x 36 minutes/day (16 weeks)</i>	Students listen to the lecturer's explanation and answer the lecturer's questions, as well as discuss	Presence and Activeness in Understanding Discussion	5
14	Able to recognize spatial modeling related to hydroclimatology studies	Spatial modeling for studies related to hydroclimatology	Lectures, questions and answers, and discussions	216 minutes (0.25 ECTS) Consist of: • <i>Lecture = 1x 120 minutes</i> • <i>Q&A = 1 x 20 minutes</i> • <i>Discussion = 1 x 20 minutes</i> <i>Individual Tasks (Self Work) = 1 x 36 minutes/day (16 weeks)</i>	Students listen to the lecturer's explanation and answer the lecturer's questions, as well as discuss	Presence and Activeness in Understanding Discussion	5
15	Able to understand urban hydrological planning	Urban hydrological planning	Lectures, questions and answers, and discussions	216 minutes (0.25 ECTS) Consist of: • <i>Lecture = 1x 120 minutes</i>	Students listen to the lecturer's explanation and answer	Presence and Activeness in Understanding Discussion	5

				• <i>Q&A = 1 x 20 minutes</i> • <i>Discussion = 1 x 20 minutes</i> • <i>Presentation = 1 x 20 minutes</i> <i>Individual Tasks (Self Work) = 1 x 36 minutes/day (16 weeks)</i>	the lecturer's questions, as well as discuss		
16	UAS	Meeting Materials 1-15 (resume material)	Written test	216 minutes of processing time or the equivalent of 0.25 ECTS	Students working on UAS questions	Completeness and correctness of explanation and accuracy of understanding	15
8. Reference List:		1. Dahuri, R., Jacob Rais, Sapta Putra Ginting, and MJ Sitepu. 2001. Integrated Management of Coastal and Ocean Resources. PT Pradnya Paramita, Jakarta 2. Limantara Lily. 2018. Hydrological Engineering. ANDI Publisher. Yogyakarta 3. Syarifudin. 2017. Applied Hydrology. ANDI Publisher. Yogyakarta 4. Tjasyono Bayong. 2008. Applied Climatology. ITB Press. Bandung					