



Bachelor Program in Geophysics

Faculty of Mathematics and Natural Sciences

HASANUDDIN UNIVERSITY

29. Hydro-Meteorology

Module Name	:	Hydro-meteorology
Module Level	:	Bachelor
Code, if applicable	:	23H06132003
Subtitle, if applicable	:	-
Courses, if applicable	:	Hydro-meteorology
Semester(s) in which the module is taught	:	V (Fifth Semester)
Module coordinator(s)	:	Dr. Sakka, M.Si
Lecturer(s)	:	Dr. Sakka, M.Si., Saaduddin. S.Pd., M.Sc
Language	:	Bahasa (Indonesian language)
Relation to curriculum	:	Elective courses in the third year for Bachelor Degree in Geophysics
Type of teaching, contact hours	:	This course is delivered through Lectures (i.e., Project/Case-based learning), complemented by structured assignments (paper review, project/case evaluation) and independent study. Contact hours consist of 150 minutes lectures per week, plus 180 minutes per week for each of the following: structured assignments and independent study
Workload	:	Total workload is 135 hours per semester, consisting of 38 hours for lectures, and 48.5 hours each for structured assignments and independent study
Credit points	:	2 SKS (3.2 ECTS)
Requirements according to the examination regulations	:	Students are eligible to attend the examination if their absences are less than 20% of the lectures
Recommended prerequisites	:	-
Module objectives/intended learning outcomes	:	After completion of this module, students will be able to: CLO 1. Students are able to detail meteorological variables (quantities and processes) from various hydrological cycles correctly; CLO 2. Students are able to analyze precipitation and evaporation processes in a river basin area (DAS) correctly; CLO 3. Students are able to analyze river basin parameters correctly.



Bachelor Program in Geophysics

Faculty of Mathematics and Natural Sciences

HASANUDDIN UNIVERSITY

		The following is the mapping of the ILO and the CLO of this course: <table><tr><td></td><td>ILO 4</td><td>ILO 8</td><td>ILO 11</td><td>ILO 14</td></tr><tr><td>CLO 1</td><td>✓</td><td></td><td></td><td></td></tr><tr><td>CLO 2</td><td></td><td>✓</td><td></td><td></td></tr><tr><td>CLO 3</td><td></td><td></td><td>✓</td><td>✓</td></tr></table>		ILO 4	ILO 8	ILO 11	ILO 14	CLO 1	✓				CLO 2		✓			CLO 3			✓	✓										
	ILO 4	ILO 8	ILO 11	ILO 14																												
CLO 1	✓																															
CLO 2		✓																														
CLO 3			✓	✓																												
Content	:	1. Meteorological parameters 2. Precipitation and evaporation calculations 3. Hydrological cycle, from upstream to downstream (watershed) 4. Water discharge measurements 5. Climate classification system																														
Study and examination requirements		Participants are marked based on their performance in theory: Case Study (100%). Students are marked based on their percentage of points obtained and based on the following grade scale: <table><tr><th>Percentage of Achievement</th><th>Grade</th><th>Conversion Value</th></tr><tr><td>85 – 100</td><td>A</td><td>4.00</td></tr><tr><td>80 - <85</td><td>A-</td><td>3.75</td></tr><tr><td>75 - < 80</td><td>B+</td><td>3.5</td></tr><tr><td>70 - < 75</td><td>B</td><td>3.0</td></tr><tr><td>65 - < 70</td><td>B-</td><td>2.75</td></tr><tr><td>60 - < 65</td><td>C+</td><td>2.5</td></tr><tr><td>50 - < 60</td><td>C</td><td>2.00</td></tr><tr><td>40 - < 50</td><td>D</td><td>1.00</td></tr><tr><td>< 40</td><td>E</td><td>0.00</td></tr></table>	Percentage of Achievement	Grade	Conversion Value	85 – 100	A	4.00	80 - <85	A-	3.75	75 - < 80	B+	3.5	70 - < 75	B	3.0	65 - < 70	B-	2.75	60 - < 65	C+	2.5	50 - < 60	C	2.00	40 - < 50	D	1.00	< 40	E	0.00
Percentage of Achievement	Grade	Conversion Value																														
85 – 100	A	4.00																														
80 - <85	A-	3.75																														
75 - < 80	B+	3.5																														
70 - < 75	B	3.0																														
65 - < 70	B-	2.75																														
60 - < 65	C+	2.5																														
50 - < 60	C	2.00																														
40 - < 50	D	1.00																														
< 40	E	0.00																														



Bachelor Program in Geophysics

Faculty of Mathematics and Natural Sciences
HASANUDDIN UNIVERSITY

Exams and assessment formats	Assessment in this course is conducted entirely through case studies. The case study is conducted in a group or individually and requires students to apply theoretical concepts to analyze and solve a problem. This work is developed over several weeks under instructor guidance, culminating in a written report and an oral presentation of results.
Reading list	1. Main References: 1. Pukh Raj Rakhecha, 2009, Hidrometeorologi Terapan, Springer. 2. C. Donald Ahrens, 2009, Meteorologi Hari Ini – Pengantar Cuaca, Iklim, dan Lingkungan, Pembelajaran Brooks/Cole Cengage. 3. Indarto, 2016, Hidrologi: Metode Analisis dan Alat untuk Interpretasi Hidrograf Aliran Sungai, Jember 4. Asdak, C., 2002, Hidrologi dan Pengelolaan Daerah Aliran Sungai, Yogyakarta, Gadjah Mada University Press Additional References: 1. . Raghunath, HM, 2006, Hidrologi: Desain Analisis Prinsip, New Age International (P) Limited, Penerbit 2. Todd DK, dan Mays LW, 2005, Hidrologi Air Tanah, John Wiley & Sons, Inc. 3. Kevin Sene, 2010, Hidrometeorologi – Peramalan dan Aplikasi, Springer . 4. Triatmodjo, B., 2010, Hidrologi Terapan, Beta Offset Yogyakarta OSR Ongkosongo, Suyarso. 1989. Tides. Jakarta: Indonesian Institute of Sciences (LIPI), Center for Oceanographic Development. 5. Other sources on the internet.
Last revision date	July 1 st , 2025