



Bachelor Program in Geophysics

Faculty of Mathematics and Natural Sciences
HASANUDDIN UNIVERSITY

9. Climate Change

Module Name	:	Climate Change
Module Level	:	Bachelor
Code, if applicable	:	23H06122202
Subtitle, if applicable	:	-
Courses, if applicable	:	Climate Change
Semester(s) in which the module is taught	:	IV (Fourth Semester)
Module coordinator(s)	:	Prof. Dr. Halmar Halide, M.Sc.
Lecturer(s)	:	Prof. Dr. Halmar Halide, M.Sc and Andika, S.Si., M.Si.
Language	:	Bahasa (Indonesian language)
Relation to curriculum	:	Elective course in the second 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 100 minutes lectures per week, plus 120 minutes per week for each of the following: structured assignments and independent study
Workload	:	Total workload is 90 hours per semester, consisting of 28 hours for lectures, and 31 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. Able to link climate change triggers and disasters; CLO 2. Able to align disaster mitigation with the physical aspects of the causes of climate change; CLO 3. : Able to mitigate climate change disasters effectively according to environmental and societal conditions. The following is the mapping of the ILO and the CLO of this course:



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				ILO 7	ILO 10	ILO 13																														
			CLO 1	✓																																
			CLO 2		✓																															
			CLO 3			✓																														
Content	:	1. Aspects of climate modeling, temperature, forcing, and feedback 2. Aspects of the cryosphere, hydrosphere, oceans, and sun 3. Aspects of extreme weather.																																		
Study and examination requirements		Participants are marked based on their performance in theory: Project/ Case Study (65%) and Assignments (35%). Students are marked based on their percentage of points obtained and based on the following grade scale: <table><thead><tr><th>Percentage of Achievement</th><th>Grade</th><th>Conversion Value</th></tr></thead><tbody><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></tbody></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
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40 - < 50	D	1.00																																		
< 40	E	0.00																																		
Exams and assessment formats		Assessment in this course consists of a project or case study and assignments. The project or case study is conducted individually or in groups and requires students to apply theoretical concepts to analyze and solve a problem, culminating in a written report that is evaluated and may be revised after feedback. Assignments are completed individually and may include problem-solving tasks, data processing, or short essays;																																		



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		these are submitted in written form and may involve graphical or computational outputs.
Reading list	1.	Main References: 1. Idso, C.D, Carter, R.M, Singer, S. F. (2013). Climate Change Reconsidered II: Physical Science, Heartland Institute. 2. Stocker, T. F. (Eds.). (2013). The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press. Additional References: 1. Field, C. B. et al. (2012). Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press. 2. Idso, C.D, Carter, R.M, Singer, S. F. (2015). Why Scientists Disagree About Global Warming, Heartland Institute.
Last revision date		July 1 st , 2025