

SEMESTER COURSE PLAN

**ENVIRONMENTAL GEOPHYSICS (P) COURSES
(23H06121502)**



TEACHING TEAM

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STUDI PROGRAM OF GEOPHYSICS - S1
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
HASANUDDIN UNIVERSITY
MAKASSAR
2025

**STUDY PROGRAM OF GEOFISIKA - S1
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
HASANUDDIN UNIVERSITY**

Vision

Become a program Reliable studies in the field of geophysics to produce superior graduates and mastering science, technology, arts and culture based on BMI in 2030.

Vision Strategy

Mission

Based on the Vision above, the Geophysics Study Program has a mission:

1. Improving the quality of education to produce graduates who are competitive, able to work independently and in groups in implementing and developing science and technology, SBUD BMI;
2. Carrying out research to produce reliable and competitive scientific work oriented towards scientific development solid geophysics, marine geophysics, geoinformatics and hydro-meteorology;
3. Disseminate the results of applied research, action studies and appropriate technology packages in synergistic and accelerated productive activities to improve the quality of life of the community.

Graduate Profiles

Educators in the Field of Geophysics; meteorologist; geomaths; oceanographer; exploration geophysicist; seismologist ; geophysical entrepreneur.

PLO charged to courses

CPL-7 (P4) - Master the principles and current issues of natural disasters and how to mitigate disaster risks

CPL-8 (KU1) - Able to apply logical, critical, systematic and innovative thinking in developing or applying geophysical science by considering human values, and able to analyze and communicate case studies and research results using geophysical tools through scientific reports, international presentations and article publications, as well as uploading them on the university website.

CPL-13 (KK3) - Able to formulate alternative solutions to solve disaster mitigation problems by taking into account public safety, social and environmental factors

Course Learning Outcomes (CLO)

CPMK-1: Students analyze the relationship between human interaction and environmental quality (CPL7)

CPMK-2: Students analyze the interaction of human life with abiotic, biotic and cultural environmental components (CPL8 dan CPL13)

Sub-CLO

Sub CPMK-1: Skilled in applying basic concepts of environmental science principles (CPMK-1)

Sub CPMK-3: Solve problems in environmental science required for identification and mapping and mitigation of natural disasters (CPMK-1)

Sub CPMK-3: Solving environmental problems on a local, regional and global scale, both pure and applied studies that can support environmental studies (CPMK-2)

Sub CPMK-4: Measuring and predicting environmental damage (CPMK-2)

Learning Analytics

Environmental Geophysics (P)



Measuring and predicting environmental damage (CPMK-2)



Solve problems in environmental science required for identification and mapping and mitigation of natural disasters (CPMK-1)



Solving environmental problems on a local, regional and global scale, both pure and applied studies that can support environmental studies (CPMK-2)



Skilled in applying basic concepts of environmental science principles (CPMK-1)



HASANUDDIN UNIVERSITY

FAKULTY OF MATHEMATICS AND NATURAL SCIENCES

STUDY PROGRAM OF GEOPHYSICS - S1

SEMESTER LEARNING PLAN

Course		Code	Course Group	Credits	SEMESTER	Compilation Date
Environmental Geophysics (P)		23H06121502		2	3	1 Juli 2025
AUTHORITY		SLP Developer Lecturer		Coordinator		Head of Study Program
		Dr. Sakka, M.Si., Makhrani, S.Si. M.Si		Dr. Sakka, M.Si.		Dr. Muhammad Alimuddin, Eng.
Learning Outcomes Course	SLOs that are imposed on the course					
	SLO-7:	Menguasai prinsip dan issue terkini bencana alam dan bagaimana memitigasi resiko bencana				
	SLO-8:	Mampu menerapkan pemikiran logis, kritis, sistematis, dan inovatif dalam mengembangkan atau menerapkan ilmu geofisika dengan mempertimbangkan nilai-nilai kemanusiaan, serta mampu menganalisis dan mengkomunikasikan studi kasus dan hasil penelitian menggunakan perangkat geofisika melalui laporan ilmiah, presentasi internasional, dan publikasi artikel, serta mengunggahnya pada laman universitas.				
	SLO-13:	Mampu merumuskan alternatif solusi untuk menyelesaikan masalah mitigasi bencana dengan memperhatikan faktor-faktor keselamatan publik, sosial dan lingkungan				
	SLO ⇒ Course Learning Outcomes					
	After completing this course, it is expected:					
	SLO-7	CLO-1: Students analyze the relationship between human interaction and environmental quality				
	SLO-8	CLO-2: Students analyze the interaction of human life with abiotic, biotic and cultural environmental components				
	SLO-13	CLO-2: Students analyze the interaction of human life with abiotic, biotic and cultural environmental components				
	CLO ⇒ Sub-CLO					
	CLO-1	Sub-CLO-1:Skilled in applying basic concepts of environmental science principles				
		Sub-CLO-3:Solve problems in environmental science required for identification and mapping and mitigation of natural disasters				
	CLO-2	Sub-CLO-3:Solving environmental problems on a local, regional and global scale, both pure and applied studies that can support environmental studies				
		Sub-CLO-4:Measuring and predicting environmental damage				
	Correlation between SLOs/CLOs to Sub-CLOs					

SLOs that are charged on the Course		CPMK	SUB CPMK	Form of Assessment*		Weight	Value	Student Score
				Formative	Sumative			
					Project/Case Study			
SLO-7		CLO-1	SUB-CLO-1	Participation	10	10		
SLO-7		CLO-1	SUB-CLO-3	Participation	30	30		
SLO-13		CLO-2	SUB-CLO-3	Participation	20	20		
SLO-13		CLO-2	SUB-CLO-4	Participation	40	40		
					100	100		
Course Description		Environmental Geophysics is a course that emphasizes geophysical aspects in understanding environmental phenomena. This course aims to provide an understanding of geophysical principles related to the natural and artificial environment.						
Learning Materials/Subjects		1. Ethics Environment 2. Ecology 3. Function Ecology of Protected Forests and Conservation Areas 4. Ecosystem Urban 5. Characteristics Coastal Environment 6. Geology Environment 7. Management and Environmental Impact						
Reference		Main References						
		1. A. Tresna Sastrawijaya, (2000), Environmental Pollution, Rineka Cipta . 2. Djajadiningrat S. T., (1997), Introduction to Environmental Economics, Jakarta, LP3ES. 3. P.L. Coutrier, (1990), Environmental Management System with ISO 14000, Seminar ISO 14000, Surabaya						
		Additional References						
		1. Vishnu Arya Wardhana, (2001) Impact of Environmental Pollution, Edition 3, Andi,. 2. Anderson H. Stanley, Ronald E.B. & Waltow, (1993), Environmental Science, New York : Mc.Millan Publishing Company 3. Miller G.Y., (2000), Living in the Environment, Principles, connections & Solution, 9th edition, California: Wadsworth Publishing Company. 4. Soemarwoto, O., (1985), Environmental Ecology and Development, Jakarta: Publisher Bridge.						
Teaching Team		Dr. Sakka, M.Si., Makhrani, S.Si. M.Si						
Course requirement								
Week	Sub CPMK (End-of-stage learning ability)		Penilaian (Assesment)		Learning Forms and Methods [time estimate]		Content	Weight of Assessment (%)

		Indicator	Techniques & Criteria	Offline	Online		
1	2	3	4	5	6	7	8
1-4	Skilled in applying basic concepts of environmental science principles (CPMK-1)	Formative: Accuracy in analyzing, explaining and making conclusions Sumative: -	Formative Criteria: Participation dinilai dengan rubrik 1 Sumative Criteria: Project/Case Study (10) dinilai dengan rubrik 1 Assessment Technique: Non Test	Studying: Group discussion (Small Group Discussion), Simulation (Role-Play & Simulation), Discovery Learning, Self-Directed Learning, Case Study (Case Study) 400		• Ethics Environment, • Ecology	10
5-8	Solve problems in environmental science required for identification and mapping and mitigation of natural disasters (CPMK-1)	Formative: Accuracy in analyzing, explaining and making conclusions Sumative: -	Formative Criteria: Participation dinilai dengan rubrik 1 Sumative Criteria: Project/Case Study (30) dinilai dengan rubrik 1 Assessment Technique: Non Test	Studying: Group discussion (Small Group Discussion), Simulation (Role-Play & Simulation), Discovery Learning, Self-Directed Learning, Case Study, Problem-Based Learning (Problem-based Learning) 400		• Energy, Matter and system • Region Protect • Function Ecological • Forest Protected and Conservation Areas	30

9-12	Solving environmental problems on a local, regional and global scale, both pure and applied studies that can support environmental studies (CPMK-2)	Formative: Accuracy in analyzing, explaining and making conclusions Sumative: -	Formative Criteria: Participation dinilai dengan rubrik 1 Sumative Criteria: Project/Case Study (20) dinilai dengan rubrik 1 Assessment Technique: Non Test	Studying: Group discussion (Small Group Discussion), Simulation (Role-Play & Simulation), Discovery Learning, Self-Directed Learning, Case Study (Case Study), Project-Based Learning (Project-based Learning), Problem-Based Learning (Problem-based Learning) 400	• Ecosystem Urban • Characteristics Coastal Environment • Geology Environment	20
13-16	Measuring and predicting environmental damage (CPMK-2)	Formative: Accuracy in analyzing and explaining and making conclusion Sumative: -	Formative Criteria: Participation dinilai dengan rubrik 1 Sumative Criteria: Project/Case Study (40) dinilai dengan rubrik 1 Assessment Technique: Non Test	Studying: Group discussion (Small Group Discussion), Simulation (Role-Play & Simulation), Self-Directed Learning, Case Study (Case Study), Project-Based Learning (Project-based Learning), Problem-Based Learning (Problem-based Learning) 400	• Development Regions (Environments) in Cross-Border Issues • Gender and Environment • Problem Environmental Management • Policy Environmental Management	40
						100

Matrix of SLO, CLO, and Assessment Method

SLO / CLO	CLO-1	CLO-2
CPL-7 (P4)	Project/Case Study (Weight 10%) Project/Case Study (Weight 30%)	
CPL-8 (KU1)		Project/Case Study (Weight 20%) Project/Case Study (Weight 40%)
CPL-13 (KK3)		Project/Case Study (Weight 20%) Project/Case Study (Weight 40%)

Evaluation Type and Assessment Weight

Type	Assessment Weight
Project/Case Study	100
Total	100

Assessment and Evaluation of Student Achievement of CLOs

SLOs that are charged on the Course	CLO	SUB CLO	Form of Assessment*		Weight	Value	Student Score
			Formative	Sumative			
				Project/Case Study			
SLO-7	CLO-1	SUB-CLO-1	Participation	10	10		
SLO-7	CLO-1	SUB-CLO-3	Participation	30	30		
SLO-13	CLO-2	SUB-CLO-3	Participation	20	20		
SLO-13	CLO-2	SUB-CLO-4	Participation	40	40		
				100	100		

Lampiran Rubrik 1 | Rubrik Holistik

Tabel 6. 1 Rubrik Holistik		
Grade Capaian	Skor	Uraian
Sangat Baik	≥ 85	Memperlihatkan pemahaman yang lengkap tentang permasalahan. Semua metode dan persyaratan tentang tugas terdapat dalam jawaban
Baik	71 - 84	Memperlihatkan cukup pemahaman tentang permasalahan. Semua persyaratan tentang tugas terdapat dalam jawaban
Cukup Baik	61 - 70	Memperlihatkan hanya sebagian pemahaman tentang permasalahan. Kebanyakan persyaratan tentang tugas terdapat dalam jawaban
Kurang	51 - 60	Memperlihatkan sedikit pemahaman tentang permasalahan. Banyak persyaratan tugas yang tidak ada
Sangat kurang	< 51	Memperlihatkan tidak ada pemahaman tentang permasalahan