

SEMESTER COURSE PLAN

**CAPITA SELEKTA GEOPHYSICS (P) COURSES
(23H06130902)**



TEACHING TEAM

Saaduddin. S.Pd., M.Sc
198903202022043001

Andi Muhammad Pramatadie, S.T., M.Eng., Ph.D
198803242022055001

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 BMI science and technology;
2. Carrying out research to produce reliable and competitive scientific work oriented towards the scientific development of 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-4 (P1) - Mastering theoretical concepts of land, sea and geophysics atmosphere, principles of exploration, and design exploration necessary for identification and mapping natural resources and natural disaster mitigation;
- 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-14 (KK4) - Able to investigate potential natural resources and utilize appropriate information and computing technology-based instruments to carry out natural resource exploration and natural disaster mitigation activities

Course Learning Outcomes (CLO)

- CPMK-1: Students are able to analyze the role of solid geophysics, hydrometeorology, geoinformatics, and ocean and coastal dynamics in answering the challenges of sustainable development goals (CPL4)
- CPMK-2: Students are able to apply appropriate geophysical methods to a case related to sustainable development goals (SDGs) (CPL8 dan CPL14)

Sub-CLO

- Sub CPMK-1: Students are able to analyze 17 components of Sustainable Development Goals (SDGs) (CPMK-1)
- Sub CPMK-2: Students are able to analyze SDGs components which can be achieved by applying geophysical principles (CPMK-1)
- Sub CPMK-3: Students are able to apply the role of geophysical surveys to find solutions to achieve

sustainable development goals (SDGs) (CPMK-2)

Sub CPMK-4: Students are able to apply the role of hydrometeorology to find solutions to achieve sustainable development goals (SDGs) (CPMK-2)

Sub CPMK-5: Students are able to apply the role of geoinformatics to find solutions to achieve sustainable development goals (SDGs) (CPMK-2)

Sub CPMK-6: Students are able to apply the role of hydrographic surveys and studies of ocean and coastal dynamics to find solutions to achieve sustainable development goals (SDGs) (CPMK-2)

Learning Analytics

Geophysical Capita Selecta (P)



Students are able to apply the role of hydrographic surveys and studies of ocean and coastal dynamics to find solutions to achieve sustainable development goals (SDGs) (CPMK-2)



Students are able to apply the role of geoinformatics to find solutions to achieve sustainable development goals (SDGs) (CPMK-2)



Students are able to apply the role of hydrometeorology to find solutions to achieve sustainable development goals (SDGs) (CPMK-2)



Students are able to apply the role of geophysical surveys to find solutions to achieve sustainable development goals (SDGs) (CPMK-2)



Students are able to analyze SDGs components which can be achieved by applying geophysical principles (CPMK-1)



Students are able to analyze 17 components of Sustainable Development Goals (SDGs) (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
Geophysical Capita Selecta (P)		23H06130902		2	5	1 Juli 2025
AUTHORITY		SLP Developer Lecturer	Coordinator		Head of Study Program	
		Saaduddin. S.Pd., M.Sc, Andi Muhammad Pramatie, S.T., M.Eng., Ph.D	Saaduddin. S.Pd., M.Sc		Dr. Muhammad Alimuddin, Eng.	
Learning Outcomes Course	SLOs that are imposed on the course					
	SLO-4:	Menguasai konsep teoritis Geofisika darat, laut dan atmosfer, prinsip-prinsip eksplorasi, dan perancangan eksplorasi yang diperlukan untuk identifikasi dan pemetaan SDA serta mitigasi bencana alam;				
	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-14:	Mampu menyelidiki potensial sumberdaya alam dan memanfaatkan instrumen yang berbasis teknologi informasi dan komputasi yang sesuai untuk melakukan aktivitas eksplorasi SDA dan Mitigasi Bencana Alam				
	SLO ⇒ Course Learning Outcomes					
	After completing this course, it is expected:					
	SLO-4	CLO-1: Students are able to analyze the role of solid geophysics, hydrometeorology, geoinformatics, and ocean and coastal dynamics in answering the challenges of sustainable development goals				
	SLO-8	CLO-2: Students are able to apply appropriate geophysical methods to a case related to sustainable development goals (SDGs)				
	SLO-14	CLO-2: Students are able to apply appropriate geophysical methods to a case related to sustainable development goals (SDGs)				
	CLO ⇒ Sub-CLO					
	CLO-1	Sub-CLO-1:Students are able to analyze 17 components of Sustainable Development Goals (SDGs)				
		Sub-CLO-2:Students are able to analyze SDGs components which can be achieved by applying geophysical principles				
	CLO-2	Sub-CLO-3:Students are able to apply the role of geophysical surveys to find solutions to achieve sustainable development goals (SDGs)				
		Sub-CLO-4:Students are able to apply the role of hydrometeorology to find solutions to achieve sustainable development goals (SDGs)				
		Sub-CLO-5:Students are able to apply the role of geoinformatics to find solutions to achieve sustainable development goals (SDGs)				

Sub-CLO-6: Students are able to apply the role of hydrographic surveys and studies of ocean and coastal dynamics to find solutions to achieve sustainable development goals (SDGs)

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-4	CLO-1	SUB-CLO-1	Participation	20	20		
SLO-4	CLO-1	SUB-CLO-2	Participation	20	20		
SLO-14	CLO-2	SUB-CLO-3	Participation	15	15		
SLO-14	CLO-2	SUB-CLO-4	Participation	15	15		
SLO-14	CLO-2	SUB-CLO-5	Participation	15	15		
SLO-14	CLO-2	SUB-CLO-6	Participation	15	15		
				100	100		

Course Description	The Capita Selecta Geophysics course discusses the 17 components contained in the sustainable development goals (SDGs) to be achieved, both from a global perspective and for national cases. This course is elective and is presented to students in semester 5 with a load of 2 credits. This course is expected to provide students with an overview of the application of geophysical principles in answering global problems. In the learning process, this course will be filled with inviting guest speakers from related agencies according to the SDGs topic that will be discussed. Topic selection is adjusted to the study group in the Geophysics Study Program.
Learning Materials/Subjects	SDGs and 17 its components; Methods geophysical survey; Application remote sensing and geographic information systems; Ocean and coastal dynamics studies; The scope of hydrometeorology
Reference	Main References
	1. Ministry National Development Planning. (2020). <i>Technical Guidelines for Preparation Sustainable Development Goals Action Plan</i>. Planning Agency National Development. 2. Capello, M.A., Shaughnessy, A., Caslim, E. (2021). <i>The Geophysical Sustainability Atlas: Mapping Geophysics to the UN Sustainable Development Goals</i>. The Leading Edge

		Additional References					
		-					
Teaching Team		Saaduddin. S.Pd., M.Sc, Andi Muhammad Pramatadie, S.T., M.Eng., Ph.D					
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	Students are able to analyze 17 components of Sustainable Development Goals (SDGs) (CPMK-1)	Formative: Accuracy in analyzing the 17 SDGs Sumative: -	Formative Criteria: Participation dinilai dengan rubrik 1 Sumative Criteria: Project/Case Study (20) dinilai dengan rubrik 1 Assessment Technique: Non Test	Studying: Case Study (Case Study) 1x2x50`	Studying: Self-Directed Learning Reading articles 1x2x60`  <b>Studying:</b> Case Study (Case Study) Create resume  1x2x60`	Material: Lecture contracts, definition of SDGs, 17 components of SDGs Libraries: 1, 2	20

5-8	Students are able to analyze SDGs components which can be achieved by applying geophysical principles (CPMK-1)	Formative: Accuracy in analyzing the application of geophysical methods in an effort to achieve related SDGs Sumative: -	Formative Criteria: Participation dinilai dengan rubrik 1 Sumative Criteria: Project/Case Study (20) dinilai dengan rubrik 1 Assessment Technique: Non Test	Studying: Case Study (Case Study) 1x2x50`	Studying: Self-Directed Learning Reading articles 1x2x60`</p> <p><b>Studying:</b></p> <p>Case Study (Case Study)</p> <p>Create resume</p> <p>1x2x60`	Material: Cases related to SDGS, geophysical methods Libraries: 1, 2	20
9-10	Students are able to apply the role of geophysical surveys to find solutions to achieve sustainable development goals (SDGs) (CPMK-2)	Formative: Accuracy in applying solutions to achieve the SDGs through geophysical survey methods Sumative: -	Formative Criteria: Participation dinilai dengan rubrik 1 Sumative Criteria: Project/Case Study (15) dinilai dengan rubrik 1 Assessment Technique: Non Test	Studying: Case Study (Case Study) 1x2x50`	Studying: Self-Directed Learning Reading the article 1x2x60`</p> <p><b>Studying:</b></p> <p>Case Study (Case Study)</p> <p>Create a resume</p> <p>1x2x60`	Material: Cases related to SDGS, geophysical methods References: 1, 2	15

11-12	Students are able to apply the role of hydrometeorology to find solutions to achieve sustainable development goals (SDGs) (CPMK-2)	Formative: Accuracy in applying solutions to achieve the SDGs and their relationship to hydrometeorological studies Sumative: -	Formative Criteria: Participation dinilai dengan rubrik 1 Sumative Criteria: Project/Case Study (15) dinilai dengan rubrik 1 Assessment Technique: Non Test	Studying: Case Study (Case Study) 1x2x50`	Studying: Self-Directed Learning Reading the article 1x2x60`</p> <p><b>Studying:</b></p> <p>Case Study (Case Study)</p> <p>Create a resume</p> <p>1x2x60`	Material: Cases related to SDGS, hydrometeorological studies References: 1, 2	15
13-14	Students are able to apply the role of geoinformatics to find solutions to achieve sustainable development goals (SDGs) (CPMK-2)	Formative: Accuracy in implementing solutions for achieving SDGs by applying GIS and remote sensing principles Sumative: -	Formative Criteria: Participation dinilai dengan rubrik 1 Sumative Criteria: Project/Case Study (15) dinilai dengan rubrik 1 Assessment Technique: Non Test	Studying: Case Study (Case Study) 1x2x50`	Studying: Self-Directed Learning Reading the article 1x2x60`</p> <p><b>Studying:</b></p> <p>Case Study (Case Study)</p> <p>Create a resume</p> <p>1x2x60`	Material: Cases related to SDGS, GIS concepts and remote sensing Libraries: 1, 2	15

15-16	Students are able to apply the role of hydrographic surveys and studies of ocean and coastal dynamics to find solutions to achieve sustainable development goals (SDGs) (CPMK-2)	Formative: Accuracy in applying solutions to achieve SDGs and their relationship to marine and coastal dynamics studies and hydrographic surveys Sumative: -	Formative Criteria: Participation dinilai dengan rubrik 1 Sumative Criteria: Project/Case Study (15) dinilai dengan rubrik 1 Assessment Technique: Non Test	Studying: Case Study (Case Study) 1x2x50`	Studying: Self-Directed Learning Read articles 1x2x60`  <b>Studying:</b> Case Study (Case Study)  Create a resume  1x2x60`	Material: Cases related to SDGS, coastal and marine dynamics studies References: 1, 2	15
							100

Matrix of SLO, CLO, and Assessment Method

SLO / CLO	CLO-1	CLO-2
CPL-4 (P1)	Project/Case Study (Weight 20%) Project/Case Study (Weight 20%)	
CPL-8 (KU1)		Project/Case Study (Weight 15%) Project/Case Study (Weight 15%) Project/Case Study (Weight 15%) Project/Case Study (Weight 15%)
CPL-14 (KK4)		Project/Case Study (Weight 15%) Project/Case Study (Weight 15%) Project/Case Study (Weight 15%) Project/Case Study (Weight 15%)

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-4	CLO-1	SUB-CLO-1	Participation	20	20		
SLO-4	CLO-1	SUB-CLO-2	Participation	20	20		
SLO-14	CLO-2	SUB-CLO-3	Participation	15	15		
SLO-14	CLO-2	SUB-CLO-4	Participation	15	15		
SLO-14	CLO-2	SUB-CLO-5	Participation	15	15		
SLO-14	CLO-2	SUB-CLO-6	Participation	15	15		
				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