

SEMESTER COURSE PLAN

**BASIC BIOLOGY COURSES
(23H04110102)**



TEACHING TEAM

Dr. Ambeng, M.Si.
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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-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.

Course Learning Outcomes (CLO)

- CPMK-1: Students are able to analyze the basic concepts of organisms, cell function structures, classification and interaction of organisms with the environment (CPL4 dan CPL8)
- CPMK-2: Students are able to analyze systems in living things and biotechnology concepts and their relationships with applied sciences (CPL4 dan CPL8)

Sub-CLO

- Sub CPMK-1: Students are able to analyze the basic concepts of organisms, the classification and interaction of organisms with their environment and biological relations with other disciplines (CPMK-1)
- Sub CPMK-2: Students are able to analyze the structure of cell organelles and cell metabolism (CPMK-1)
- Sub CPMK-3: Students are able to analyze systems in organisms (CPMK-2)
- Sub CPMK-4: Students are able to create basic knowledge in the field of biotechnology. (CPMK-2)

Learning Analytics

Basic Biology



Students are able to create basic knowledge in the field of biotechnology. (CPMK-2)



Students are able to analyze systems in organisms (CPMK-2)



Students are able to analyze the structure of cell organelles and cell metabolism (CPMK-1)



Students are able to analyze the basic concepts of organisms, the classification and interaction of organisms with their environment and biological relations with other disciplines (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
Basic Biology		23H04110102		2	1	1 Juli 2025
AUTHORITY		SLP Developer Lecturer		Coordinator		Head of Study Program
		Dr. Ambeng, M.Si.		Dr. Ambeng, M.Si.		Rahmatullah, SIP., M.Si.
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 ⇒ Course Learning Outcomes					
	After completing this course, it is expected:					
	SLO-4	CLO-1: Students are able to analyze the basic concepts of organisms, cell function structures, classification and interaction of organisms with the environment				
		CLO-2: Students are able to analyze systems in living things and biotechnology concepts and their relationships with applied sciences				
	SLO-8	CLO-1: Students are able to analyze the basic concepts of organisms, cell function structures, classification and interaction of organisms with the environment				
		CLO-2: Students are able to analyze systems in living things and biotechnology concepts and their relationships with applied sciences				
	CLO ⇒ Sub-CLO					
	CLO-1	Sub-CLO-1:Students are able to analyze the basic concepts of organisms, the classification and interaction of organisms with their environment and biological relations with other disciplines				
		Sub-CLO-2:Students are able to analyze the structure of cell organelles and cell metabolism				
	CLO-2	Sub-CLO-3:Students are able to analyze systems in organisms				
		Sub-CLO-4:Students are able to create basic knowledge in the field of biotechnology.				

		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						
				Gagal diterjemahkan	Gagal diterjemahkan	Summative Test	Gagal diterjemahkan			
SLO-8	CLO-1	SUB-CLO-1		18	0	0	0	18		
SLO-8	CLO-1	SUB-CLO-2		0	25	8	0	33		
SLO-8	CLO-2	SUB-CLO-3		0	34	0	0	34		
SLO-8	CLO-2	SUB-CLO-4		0	0	8	7	15		
				18	59	16	7	100		
Course Description		The Basic Biology course, offered in the first year of study at Hasanuddin University, covers fundamental concepts of life sciences, including the Introduction and Basic Concepts of Biology, Classification of Living Organisms, Ecology, and the Basic Unit of Life. The course also discusses Cell Division and Inheritance, Cell Metabolism (Anabolism and Catabolism), the Reproductive System in Plants and Animals, as well as the Coordination System in Plants and Animals. Each topic is presented with examples and exercises to strengthen students' understanding of living systems. At the end of this course, students must prepare a scientific report based on laboratory experiments on topics such as cell structure, osmosis, enzymatic activity, and plant and animal physiology. Students must also take a final exam.								
Learning Materials/Subjects		1. Introduction 2. Basic concepts biology 3. Classification Living Creatures 4. Ecology 5. Basic units life 6. Cell division & inheritance of traits 7. Cell metabolism (Anabolism). 8. Cell metabolism (Catabolism). 9. System plant reproduction 10. System animal reproduction. 11. System Plant coordination 12. System Animal coordination 13. Homeostasis: circulation & excretion. 14. Basics biotechnology.								
		Main References								

Reference	1. Teaching Material / Basic Biology Learning Material in Schools. 2. Campbell, N. A., et al. (2003). Biology, Volume 1. Jakarta: Erlangga. 3. Campbell, N. A., et al. (2003). Biology, Volume 2. Jakarta: Erlangga. 4. Campbell, N. A., et al. (2003). Biology, Volume 3. Jakarta: Erlangga.						
	Additional References						
	1. Barrett, J. M. (1986). Biology. Prentice-Hall, Englewood Cliffs, New Jersey. 2. Odum, E. P. (1998). Fundamentals of Ecology (3rd ed.). Yogyakarta: UGM Press. 3. Rompas, Y., Rampe, H. L., & Rumondor, M. J. (2011). Structure of Epidermal Cells and Leaf Stomata of Several Orchidaceae Species. Bioslogos Journal, 1(1),13–19. 4. Novitasari, R. (2017). Cellular Respiration Processes in Plants. In Proceedings of the National Seminar on Biology Education and Biology, FMIPA Biology, Yogyakarta State University (UNY). 5. Wolf, J. B., Smith, A. C. F., & Lorenz, A. (2022). Mendel's Laws of Heredity on His 200th Birthday: What Have We Learned by Considering Exceptions? Heredity, 129, 1–3. 6. Pereira, A. M., & Coimbra, S. (2019). Advances in Plant Reproduction: From Gametes to Seeds. Journal of Experimental Botany, 70(11), 2933–2936. 7. Moore, S. G., & Hasier, J. F. (2017). A 100-Year Review: Reproductive Technologies in Dairy Science. Journal of Dairy Science, 100(12), 10314–10331. 8. Afrilianti, C., Sataral, M., Eljonnahdi, & Fahri, F. (2019). Description and Habitat of Mycalesis Perseus Fabricius, 1775 (Rhopalocera: Nymphalidae), a Cosmopolitan Species on Mount Tompotika, Sulawesi. Journal of Science and Technology, 8(2), 134–137. 9. Kusmana, C., & Wisdom, A. (2015). Floral Biodiversity in Indonesia. Journal of Natural Resources and Environmental Management, 5(2), 187–198. 10. Mauerhofer, L. M., Pappenreiter, P., Paulik, C., Selfert, A. H., Bernacchi, S., & Rittmann, S. K. M. R. (2019). Methods for Quantification of Growth and Productivity in Anaerobic Microbiology and Biotechnology. Folia Microbiologica, 64, 321–360.						
Teaching Team	Dr. Ambeng, 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	Students are able to analyze the basic concepts of organisms, the classification and interaction of organisms with their environment and biological relations with other disciplines (CPMK-1)	Formative: - Sumative: -	Formative Criteria: Sumative Criteria: Collaborative Learning (CoL) (18) Assessment Technique: Non Test			-	18
5-8	Students are able to analyze the structure of cell organelles and cell metabolism (CPMK-1)	Formative: - Sumative: -	Formative Criteria: Sumative Criteria: Case Study (CS) (25) Summative Test (8) dinilai dengan rubrik 1 Assessment Technique: Test and Non-Test			-	33
9-13	Students are able to analyze systems in organisms (CPMK-2)	Formative: - Sumative: -	Formative Criteria: Sumative Criteria: Case Study (CS) (34) Assessment Technique: Non Test			-	34

14-16	Students are able to create basic knowledge in the field of biotechnology. (CPMK-2)	Formative: - Sumative: -	Formative Criteria: Sumative Criteria: Pjbl (Project Base Learning) (7) Summative Test (8) dinilai dengan rubrik 1 Assessment Technique: Test and Non-Test			-	15
							100

Matrix of SLO, CLO, and Assessment Method

SLO / CLO	CLO-1	CLO-2
CPL-4 (P1)	data not found (Weight 18%) data not found (Weight 25%) Summative Test (Weight 8%)	data not found (Weight 34%) data not found (Weight 7%) Summative Test (Weight 8%)
CPL-8 (KU1)	data not found (Weight 18%) data not found (Weight 25%) Summative Test (Weight 8%)	data not found (Weight 34%) data not found (Weight 7%) Summative Test (Weight 8%)

Evaluation Type and Assessment Weight

Type	Assessment Weight
Collaborative Learning (CoL)	18
Case Study (CS)	59
Summative Test	16
Pjbl (Project Base Learning)	7
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						
				Gagal diterjemahkan	Gagal diterjemahkan	Summative Test	Gagal diterjemahkan			
SLO-8	CLO-1	SUB-CLO-1		18	0	0	0	18		
SLO-8	CLO-1	SUB-CLO-2		0	25	8	0	33		
SLO-8	CLO-2	SUB-CLO-3		0	34	0	0	34		
SLO-8	CLO-2	SUB-CLO-4		0	0	8	7	15		
				18	59	16	7	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