	Universitas Negeri Surabaya **Faculty of Social Sciences and Law** **Geography Education Undergraduate Study Program**	**Document Code**

SEMESTER LEARNING PLAN

Courses		**CODE**	**Course Family**	**Credit Weight**			**SEMESTER**	**Compilation Date**
Climatology		8720202090		**T=2**	**P=0**	**ECTS=3.18**	0	July 18, 2024

AUTHORIZATION	**SP Developer**	**Course Cluster Coordinator**	**Study Program Coordinator**
	....	....	Dr. Nugroho Hari Purnomo, S.P., M.Si.

Learning model	**Case Studies**

Program Learning Outcomes (PLO)	**PLO study program which is charged to the course**
	Program Objectives (PO)
	PLO-PO Matrix

P.O

PO Matrix at the end of each learning stage (Sub-PO)

P.O	Week															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Short Course Description	Able to understand the concept and scope of Meteorology-Climatology, the composition and layers of the atmosphere, and be able to carry out measurements and analysis of weather data which includes insolation and air temperature, air pressure and wind, air humidity and precipitation, air mass and weather dynamics that occur through observation individually or in groups. Able to determine the exact climate of a region according to the climate classification by Schmidt-Fergusson, Koppen, Thornthwaite, Miller and Mohr through analysis of climate data obtained in the field

References	**Main :**	
	1. Dengel, GOF,. 1956. Dasar Dasar Ilmu Cuaca . Jakarta : Groningen JB Walters 2. Kuspriyanto dan Sulistinah,. 2009. Meteorolgi . Jurusan Geografi-FIS Unesa, Surabaya 3. Sulistinah dan Kuspriyanto, 2009. Klimatologi . Jurusan Geografi-FIS Unesa, Surabaya 4. Trewartha, Glenn T,. 1954. Introduction to Climate . New York : McGraw Hill Book Company. 5. Tarbuck, E.J, Lutgens, Frederick, K. 2009. Earth Science. New Yersey : Pearson Prentice Hall Pearson Educational International	
	Supporters:	

Supporting lecturer	KUSPRIYANTO SULISTINAH

Week-	**Final abilities of each learning stage (Sub-PO)**	**Evaluation**		**Help Learning, Learning methods, Student Assignments, [Estimated time]**		**Learning materials [References]**	**Assessment Weight (%)**
		Indicator	**Criteria & Form**	**Offline (_offline_)**	**Online (_online_)**		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

1	Students are able to describe the concept, scope and benefits of studying Meteorology	1. Explain the concept of Meteorology 2. Explain the scope of Meteorology 3. Explain the benefits of weather	**Criteria:** -	Questions and Answers 2 X 50			0%
2	Students are able to describe the composition and properties of the atmospheric layers	1. Explain the composition of the main gases in the atmosphere. 2. Explain the properties of the atmosphere. 3. Describe the characteristics of the layers in the atmosphere.	**Criteria:** -	Call, question and answer 2 X 50			0%
3	Students are able to explain basic meteorological measurements and data sources	1. Explaining Basic Meteorological Measures (insolation and Air Temperature). 2. Explain sources of meteorological data	**Criteria:** -	Call-in, question and answer and demonstration 2 X 50			0%
4	Students are able to explain basic meteorological measurements and data sources	1. Explaining Basic Meteorological Measures (insolation and Air Temperature). 2. Explain sources of meteorological data	**Criteria:** -	Call-in, question and answer and demonstration 2 X 50			0%
5	Students are able to explain air pressure and wind as meteorological elements and their dynamics	1. Explain air pressure 2. Calculate air pressure both manually and with tools. 3. Explain the factors that influence the distribution of air pressure. 4. Explain the factors that influence wind speed. 5. Explain with sketches the types of wind. Calculating adiabatic gradients. 6. Explain the instrument for measuring wind speed and direction (anemometer)	**Criteria:** -	Culponsions, questions and answers and demonstrations, assignments. 2 X 50			0%

6	Students explain hydrometeors and the hydrometeor tools used	1. Explain the meaning of evaporation. 2. Explain the various types of air humidity. 3. Explain the difference between dew and fog. 4. Explain the process by which various types of fog occur. 5. Explain the types of clouds. 6. Explain the meaning and process of precipitation. 7. Explain the types of precipitation	**Criteria:** -	Culpinsion, demonstration and assignment 2 X 50			0%
7	Students explain hydrometeors and the hydrometeor tools used	1. Explain the meaning of evaporation. 2. Explain the various types of air humidity. 3. Explain the difference between dew and fog. 4. Explain the process by which various types of fog occur. 5. Explain the types of clouds. 6. Explain the meaning and process of precipitation. 7. Explain the types of precipitation	**Criteria:** -	Culpinsion, demonstration and assignment 2 X 50			0%
8				Written Test (Mid-Semester Exam) 2 X 50			0%
9							0%
10							0%
11							0%
12							0%
13							0%
14							0%
15							0%
16							0%

Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
		0%

Notes

1. **Learning Outcomes of Study Program Graduates (PLO - Study Program)** are the abilities possessed by each Study Program graduate which are the internalization of attitudes, mastery of knowledge and skills according to the level of their study program obtained through the learning process.
2. **The PLO imposed on courses** are several learning outcomes of study program graduates (CPL-Study Program) which are used for the formation/development of a course consisting of aspects of attitude, general skills, special skills and knowledge.
3. **Program Objectives (PO)** are abilities that are specifically described from the PLO assigned to a course, and are specific to the study material or learning materials for that course.
4. **Subject Sub-PO (Sub-PO)** is a capability that is specifically described from the PO that can be measured or observed and is the final ability that is planned at each learning stage, and is specific to the learning material of the course.
5. **Indicators for assessing** ability in the process and student learning outcomes are specific and measurable statements that identify the ability or performance of student learning outcomes accompanied by evidence.
6. **Assessment Criteria** are benchmarks used as a measure or measure of learning achievement in assessments based on predetermined indicators. Assessment criteria are guidelines for assessors so that assessments are consistent and unbiased. Criteria can be quantitative or qualitative.
7. **Forms of assessment:** test and non-test.
8. **Forms of learning:** Lecture, Response, Tutorial, Seminar or equivalent, Practicum, Studio Practice, Workshop Practice, Field Practice, Research, Community Service and/or other equivalent forms of learning.
9. **Learning Methods:** Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project Based Learning, and other equivalent methods.
10. **Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
11. **The assessment weight** is the percentage of assessment of each sub-PO achievement whose size is proportional to the level of difficulty of achieving that sub-PO, and the total is 100%.
12. TM=Face to face, PT=Structured assignments, BM=Independent study.