Module/Course Description

CLIMATOLOGY (GFM 221)

A. Module Identity		
1.	Name	Climatology
2.	Code	GFM 221
3.	Credit	3 (3-0)
4.	Semester	3
5.	Coordinator	Rini Hidayati
6.	Lecturers	Bambang Dwi Dasanto, Akhmad Faqih, Perdinan, Idung Risdiyanti, Fithriya YR, I Putu Santikayasa, Muh. Taufik, Tania June, Impron, Handoko, Yon Sugiarto, Yonny Koesmaryono, Resti Salmayenti
7.	Language	Indonesian
8.	Program(s) in which the course is offered	Internal department: - Other departments: Geophysics and Meteorology Study Progam
9.	Type of teaching	a. Traditional classroom: 100 % b. Blended system: Traditional classroom….%, Online….% c. e-Learning system: ……..% d. Others: …….%

B. Workload of course components (total contact hours and credits per semester)								
Credit		Contact Hours				Self-Study	Other	Total
SKS *)	ECTS	Lecture	Exercise	Laboratory	Practice			
3		**42**				**56**		**98**

**) Semester credit unit according to the Indonesian higher educational system*
1 credit unit lecture = 2 hours/ week for lecture and 2 hours/ week for self-study within 14 weeks/ semester
1 credit unit class exercise or laboratory or field practice = 3 hours/week within 12-14 weeks/semester
***) 1 hour for lecture= 50 minutes; 1 hour for class exercise or laboratory or field practice = 60 minutes*

C. Module Objective (Learning Outcomes)
The student having the ability to explain the elements of climate, elements of climate control, and climate formation process quantitatively and qualitatively, and to comprehend the climate distribution, variation and classification in the world

D. Detailed Course Learning Outcomes (LO) in Relation to Learning Domains, Teaching Strategies, and Assignment Methods			
No.	**LO in Learning Domains**	**Teaching Strategies**	**Assessment Methods**
a.	**Knowledge**		
1.	Students are able **to distinguish** the climate and weather and their elements characteristic	Presentation of teaching materials. Debriefing sessions	Midterm Exam
2.	Students are able **to explain** the Earth's atmosphere characteristics and role of each atmosphere layer	Presentation of teaching materials. Debriefing sessions	Midterm Exam
3.	Students are able **to outline** the mechanism and process of solar radiation transfer to earth surface	Presentation of teaching materials. Debriefing sessions	Midterm Exam
4.	Students are able **to explain** the characteristics and transfer of heat response, and the temperature distribution and variation according to time and space	Presentation of teaching materials. Debriefing sessions	Midterm Exam
5.	Students are able **to compute** the air humidity and **to explain** the distribution of air humidity according to time and space	Presentation of teaching materials. Debriefing sessions	Midterm Exam
6.	Students are able **to predict** the value of evapotranspiration	Presentation of teaching materials. Debriefing sessions	Final Exam

7.	Students are able **to illustrate** the air pressure distribution according to time and space	Presentation of teaching materials. Debriefing sessions	Final Exam
8.	Students are able **to explain** wind regulating forces balance	Presentation of teaching materials. Debriefing sessions	Final Exam
9.	Students are able **to illustrate** the hydrological cycle and the process of rain formation	Presentation of teaching materials. Debriefing sessions	Final Exam
10.	Students are able **to produce** climate classifications based on several approaches	Presentation of teaching materials. Debriefing sessions	Final Exam
11.	Students are able **to classify** the world climate distribution	Presentation of teaching materials. Debriefing sessions	Final Exam

E. Module Content		
List of Topic	**Number of Weeks**	**Contact Hours**
Introduction	1	3
Atmosphere	1	3
Solar Radiation	2	6
Air Temperature	1	3
Air Humidity	1	3
Evapotranspiration	1	3
Air Pressure	1	3
Wind	1	3
Cloud and Rain	2	6
Climate Classification	2	6
World Climate Distribution	1	3

F. Course Assessments			
No.	**Assessment Type *)**	**Schedule (Week Due)**	**Proportion of the Final Mark**
1.	Mid-term examination	8th week	50 %
2.	Final examination	16th week	50 %

**) Example: mid-term examination, final examination, quiz, homework, project, etc.*

G. Media Employed

- Classroom
- Laptop
- LCD
- Microphone (loudspeaker)
- Whiteboard

H. Learning Resources

1. Hardy L, Wright P, Gribbin J, Kington J. 1982. *The Weather Book*. London (UK): Michael Joseph Ltd.
2. Hidayati R. 1993. 1993. Klimatologi Dasar, landasan pemahaman fisika atmosfer dan unsur-unsur iklim.
3. Trewartha GT, Lyle HH. 1980. *An Introduction to Climate*. Mc Graw-Hill