



Universitas Negeri Surabaya
Faculty of Mathematics and Natural Sciences
Physics Education Undergraduate Study Program

Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date																																	
Disaster mitigation	8420302261		T=2	P=0	ECTS=3.18	0	July 18, 2024																																	
AUTHORIZATION	SP Developer		Course Cluster Coordinator			Study Program Coordinator																																		
			Mita Anggaryani, M.Pd., Ph.D.																																		
Learning model	Case Studies																																							
Program Learning Outcomes (PLO)	PLO study program which is charged to the course																																							
	Program Objectives (PO)																																							
	PLO-PO Matrix																																							
	<table border="1" style="margin: auto;"> <tr> <td style="width: 10%; text-align: center;">P.O</td> <td colspan="16"></td> </tr> </table>							P.O																																
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Short Course Description	PO Matrix at the end of each learning stage (Sub-PO)																																							
	<table border="1" style="margin: auto;"> <tr> <td style="width: 5%; text-align: center;">P.O</td> <td colspan="16" style="text-align: center;">Week</td> </tr> <tr> <td></td> <td style="width: 2%;">1</td> <td style="width: 2%;">2</td> <td style="width: 2%;">3</td> <td style="width: 2%;">4</td> <td style="width: 2%;">5</td> <td style="width: 2%;">6</td> <td style="width: 2%;">7</td> <td style="width: 2%;">8</td> <td style="width: 2%;">9</td> <td style="width: 2%;">10</td> <td style="width: 2%;">11</td> <td style="width: 2%;">12</td> <td style="width: 2%;">13</td> <td style="width: 2%;">14</td> <td style="width: 2%;">15</td> <td style="width: 2%;">16</td> </tr> </table>							P.O	Week																	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																								
References	<p>Main :</p> <ol style="list-style-type: none"> Coburn and Spence. 1994. <i>Disaster Mitigation</i> . United Kingdom: Cambridge Arschitectural. Agung Mulyo. 2004. <i>Pengantar Ilmu Kebumihan</i> . Bandung: Pustaka Setia. L Don and Leet. 1964. <i>Gempa Bumi; Penyelidikan Ilmiah dan Sederhana</i> . Yogyakarta: Kreasi Wacana. TIM. 2019. Panduan Pembelajaran Kebencanaan Untuk Mahasiswa di Perguruan Tinggi. Jakarta: Direktorat Jenderal Pembelajaran dan Kemahasiswaan Kementerian Riset Teknologi dan Pendidikan Tinggi. <p>Supporters:</p>																																							
Supporting lecturer	Mukhayyarotin Niswati Rodliyatul Jauhariyah, S.Pd., M.Pd. Dr. Binar Kurnia Prahani, S.Pd., M.Pd.																																							
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	Describe the concept of disaster. Describe the elements that trigger disasters; Analyze data and facts about disasters in Indonesia.	<ol style="list-style-type: none"> 1. Students are able to describe the concept of disaster. 2. Students are able to describe the elements that trigger disasters. 3. Students are able to analyze disaster data and facts in Indonesia. 4. Students are able to explain the history of disasters in the past. 	Criteria: 1.4 - Very Good 2.3 - OK 3.2 - Fairly Good 4.1 - Not Good	Discussion and assignment 2 X 50			0%
2	Classifying disasters based on their causes. Analyzing disasters based on the Sendai framework.	<ol style="list-style-type: none"> 1. Students are able to classify disasters according to the Book of Disaster Management. 2. Students are able to classify disasters based on their causes. 3. Students are able to analyze disasters based on the Sendai framework. 4. Students are able to analyze the dominance of disasters in Indonesia. 	Criteria: 1.4 = Very Good 2.3 = Good 3.2 = Fairly Good 4.1 = Not Good	Class discussion and assignment 2 X 50			0%
3	Demonstrate knowledge of the concepts of Geology, Geomorphology, Disaster Climatology.	<ol style="list-style-type: none"> 1. Students are able to demonstrate knowledge of the concept of Geological Disasters. 2. Students are able to demonstrate knowledge of the concept of Geomorphological Disasters. 3. Students are able to demonstrate knowledge of the concept of Climatological Disasters. 	Criteria: 1.4 = Very Good 2.3 = Good 3.2 = Fairly Good 4.1 = Not Good	Class Discussion and Assignment 2 X 50			0%

4	<p>Demonstrate knowledge of the characteristics of natural disasters. Identify signs of impending natural disasters. Analyze disaster response actions according to the characteristics of natural disasters. Analyze the impact of natural disasters. Describe how to recover (rehabilitate) after natural disasters.</p>	<ol style="list-style-type: none"> 1. Students are able to demonstrate knowledge about the characteristics of natural disasters such as earthquakes, tsunamis, volcanic eruptions, landslides, floods and flash floods. 2. Students are able to identify signs of impending natural disasters: Earthquakes, Tsunamis, Volcanic Eruptions, Landslides, Floods, Flash Floods, Droughts, Extreme Weather (tornadoes), and Extreme Waves (abrasion). 3. Students are able to analyze disaster response actions according to the characteristics of natural disasters such as earthquakes, tsunamis, volcanic eruptions, landslides, floods and flash floods, droughts, extreme weather (tornadoes), and extreme waves (abrasion). 4. Students are able to analyze the impact of natural disasters such as earthquakes, tsunamis, volcanic eruptions, landslides, floods and flash floods, droughts, extreme weather (tornadoes), and extreme waves (abrasion). 5. Students are able to describe how to recover (rehabilitate) after natural disasters such as earthquakes, tsunamis, volcanic eruptions, landslides, floods and flash floods, droughts, extreme weather (tornadoes), and extreme waves (abrasion). 	<p>Criteria: 1.4 = Very Good 2.3 = Good 3.2 = Fairly Good 4.1 = Not Good</p>	<p>Class discussion and expository 2 X 50</p>			0%
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5	<p>Demonstrate knowledge of the characteristics of natural disasters. Identify signs of impending natural disasters. Analyze disaster response actions according to the characteristics of natural disasters. Analyze the impact of natural disasters. Describe how to recover (rehabilitate) after natural disasters.</p>	<ol style="list-style-type: none"> 1. Students are able to demonstrate knowledge about the characteristics of natural disasters such as earthquakes, tsunamis, volcanic eruptions, landslides, floods and flash floods. 2. Students are able to identify signs of impending natural disasters: Earthquakes, Tsunamis, Volcanic Eruptions, Landslides, Floods, Flash Floods, Droughts, Extreme Weather (tornadoes), and Extreme Waves (abrasion). 3. Students are able to analyze disaster response actions according to the characteristics of natural disasters such as earthquakes, tsunamis, volcanic eruptions, landslides, floods and flash floods, droughts, extreme weather (tornadoes), and extreme waves (abrasion). 4. Students are able to analyze the impact of natural disasters such as earthquakes, tsunamis, volcanic eruptions, landslides, floods and flash floods, droughts, extreme weather (tornadoes), and extreme waves (abrasion). 5. Students are able to describe how to recover (rehabilitate) after natural disasters such as earthquakes, tsunamis, volcanic eruptions, landslides, floods and flash floods, droughts, extreme weather (tornadoes), and extreme waves (abrasion). 	<p>Criteria: 1.4 = Very Good 2.3 = Good 3.2 = Fairly Good 4.1 = Not Good</p>	<p>Class discussion and expository 2 X 50</p>			0%
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6	<p>Demonstrate knowledge of the characteristics of natural disasters. Identify signs of impending natural disasters. Analyze disaster response actions according to the characteristics of natural disasters. Analyze the impact of natural disasters. Describe how to recover (rehabilitate) after natural disasters.</p>	<ol style="list-style-type: none"> 1. Students are able to demonstrate knowledge about the characteristics of natural disasters such as earthquakes, tsunamis, volcanic eruptions, landslides, floods and flash floods. 2. Students are able to identify signs of impending natural disasters: Earthquakes, Tsunamis, Volcanic Eruptions, Landslides, Floods, Flash Floods, Droughts, Extreme Weather (tornadoes), and Extreme Waves (abrasion). 3. Students are able to analyze disaster response actions according to the characteristics of natural disasters such as earthquakes, tsunamis, volcanic eruptions, landslides, floods and flash floods, droughts, extreme weather (tornadoes), and extreme waves (abrasion). 4. Students are able to analyze the impact of natural disasters such as earthquakes, tsunamis, volcanic eruptions, landslides, floods and flash floods, droughts, extreme weather (tornadoes), and extreme waves (abrasion). 5. Students are able to describe how to recover (rehabilitate) after natural disasters such as earthquakes, tsunamis, volcanic eruptions, landslides, floods and flash floods, droughts, extreme weather (tornadoes), and extreme waves (abrasion). 	<p>Criteria: 1.4 = Very Good 2.3 = Good 3.2 = Fairly Good 4.1 = Not Good</p>	<p>Class discussion and expository 2 X 50</p>			0%
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7	Demonstrate knowledge about the characteristics of non-natural disasters. Identify signs of impending non-natural disasters. Analyze disaster response actions according to the characteristics of non-natural disasters. Analyze the impact of non-natural disasters. Describe how to recover (rehabilitate) after non-natural disasters. natural.	<ol style="list-style-type: none"> 1. Students are able to demonstrate knowledge about the characteristics of non-natural disasters in the form of technological failures as well as epidemics and disease outbreaks. 2. Students are able to identify signs of impending non-natural disasters in the form of technological failures as well as epidemics and disease outbreaks. 3. Students are able to analyze disaster response actions according to the characteristics of non-natural disasters in the form of technological failures as well as epidemics and disease outbreaks. 4. Students are able to analyze the impact of non-natural disasters in the form of technological failures as well as epidemics and disease outbreaks. 5. Students are able to describe how to recover (rehabilitate) after non-natural disasters in the form of technological failures as well as epidemics and disease outbreaks. 	Criteria: 1.4 = Very Good 2.3 = Good 3.2 = Fairly Good 4.1 = Not Good	Discussion and expository 2 X 50		0%
8	UTS	UTS		UTS 2 X 50		0%
9	Analyzing geographic information system (GIS) data physically.	<ol style="list-style-type: none"> 1. Describe the concept and function of Geographic Information Systems (GIS). 2. Describe the benefits and scope of GIS. 3. Analyzing GIS data for mapping the distribution of potential disaster areas. 	Criteria: 1.4=very good 2.3= good 3.2=fairly good 4.1=not good	Class discussion and expository 2 X 50		0%

10	Analyzing GIS data to map disaster-prone areas. Predicting the potential for disasters in several regions of Indonesia	<ol style="list-style-type: none"> 1. Students are able to plan and process GIS data. 2. Students are able to analyze GIS data to map disaster-prone areas. 3. Students are able to predict potential disasters in several regions in Indonesia using GIS data. 	Criteria: 1.4 = Very Good 2.3 = Good 3.2 = Fairly Good 4.1 = Not Good	class discussion and assignment 2 X 50			0%
11	Analyzing GIS data to map disaster-prone areas. Predicting the potential for disasters in several regions of Indonesia	<ol style="list-style-type: none"> 1. Students are able to plan and process GIS data. 2. Students are able to analyze GIS data to map disaster-prone areas. 3. Students are able to predict potential disasters in several regions in Indonesia using GIS data. 	Criteria: 1.4 = Very Good 2.3 = Good 3.2 = Fairly Good 4.1 = Not Good	class discussion and assignment 2 X 50			0%
12	Analyzing and Mitigating Climatological Disasters Analyzing and Mitigating Volcanism Disasters Analyzing and Mitigating Technological Disasters Analyzing and Mitigating Social Disasters	<ol style="list-style-type: none"> 1. Students are able to analyze and describe climatological disaster mitigation 2. Students are able to analyze and describe volcanism disaster mitigation 3. Students are able to analyze and describe technological disaster mitigation 4. Students are able to analyze and describe social disaster mitigation 	Criteria: 1.4=very good 2.3=good 3.2=fairly good 4.1=not good	Class discussion and expository 2 X 50			0%
13	Analyzing and Mitigating Climatological Disasters Analyzing and Mitigating Volcanism Disasters Analyzing and Mitigating Technological Disasters Analyzing and Mitigating Social Disasters	<ol style="list-style-type: none"> 1. Students are able to analyze and describe climatological disaster mitigation 2. Students are able to analyze and describe volcanism disaster mitigation 3. Students are able to analyze and describe technological disaster mitigation 4. Students are able to analyze and describe social disaster mitigation 	Criteria: 1.4=very good 2.3=good 3.2=fairly good 4.1=not good	Class discussion and expository 2 X 50			0%

14	Analyzing and Mitigating Climatological Disasters Analyzing and Mitigating Volcanism Disasters Analyzing and Mitigating Technological Disasters Analyzing and Mitigating Social Disasters	1.Students are able to analyze and describe climatological disaster mitigation 2.Students are able to analyze and describe volcanism disaster mitigation 3.Students are able to analyze and describe technological disaster mitigation 4.Students are able to analyze and describe social disaster mitigation	Criteria: 1.4=very good 2.3=good 3.2=fairly good 4.1=not good	Class discussion and expository 2 X 50			0%
15	Analyzing and Mitigating Climatological Disasters Analyzing and Mitigating Volcanism Disasters Analyzing and Mitigating Technological Disasters Analyzing and Mitigating Social Disasters	1.Students are able to analyze and describe climatological disaster mitigation 2.Students are able to analyze and describe volcanism disaster mitigation 3.Students are able to analyze and describe technological disaster mitigation 4.Students are able to analyze and describe social disaster mitigation	Criteria: 1.4=very good 2.3=good 3.2=fairly good 4.1=not good	Class discussion and expository 2 X 50			0%
16							0%

Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
		0%

Notes

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- Forms of assessment:** test and non-test.
- 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.
- 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.
- Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
- 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%.
- TM=Face to face, PT=Structured assignments, BM=Independent study.

