



Universitas Negeri Surabaya
Faculty of Social and Legal Sciences
Geography Education Masters Study Program

Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight	SEMESTER	Compilation Date																																																																		
Applied Geographic Information Science	8710203033	Compulsory Study Program Subjects	T=0 P=3 ECTS=6.72	2	July 18, 2024																																																																		
AUTHORIZATION	SP Developer		Course Cluster Coordinator	Study Program Coordinator																																																																			
	Dr. Eko Budiyanto, M.Si		Dr. Eko Budiyanto, M.Si	Dr. Sukma Perdana Prasetya, S.Pd., M.T.																																																																			
Learning model	Project Based Learning																																																																						
Program Learning Outcomes (PLO)	PLO study program that is charged to the course																																																																						
	PLO-9	Mastering the dynamics of regional problems based on the concepts and approaches of geographic science to solve problems of structuring regional potential using geographic technology																																																																					
	Program Objectives (PO)																																																																						
	PO - 1	Mastering concepts related to basic topics in Geographic Information Science and regions																																																																					
	PO - 2	Able to develop logical, systematic thinking, and able to communicate topics in geographic information science																																																																					
	PLO-PO Matrix																																																																						
		<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 5px;">P.O</td> <td style="padding: 5px;">PLO-9</td> </tr> <tr> <td style="padding: 5px;">PO-1</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">PO-2</td> <td style="padding: 5px;"></td> </tr> </table>				P.O	PLO-9	PO-1		PO-2																																																													
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PO-2																																																																							
PO Matrix at the end of each learning stage (Sub-PO)																																																																							
	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td rowspan="2" style="padding: 5px;">P.O</td> <td colspan="16" style="padding: 5px;">Week</td> </tr> <tr> <td style="padding: 5px;">1</td><td style="padding: 5px;">2</td><td style="padding: 5px;">3</td><td style="padding: 5px;">4</td><td style="padding: 5px;">5</td><td style="padding: 5px;">6</td><td style="padding: 5px;">7</td><td style="padding: 5px;">8</td><td style="padding: 5px;">9</td><td style="padding: 5px;">10</td><td style="padding: 5px;">11</td><td style="padding: 5px;">12</td><td style="padding: 5px;">13</td><td style="padding: 5px;">14</td><td style="padding: 5px;">15</td><td style="padding: 5px;">16</td> </tr> <tr> <td style="padding: 5px;">PO-1</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td style="padding: 5px;">PO-2</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>				P.O	Week																1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	PO-1																	PO-2																
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PO-1																																																																							
PO-2																																																																							
Short Course Description	Discusses the concept of geographic information science, regional and regional concepts, development of regional information systems, spatial statistics and regional analysis, development of spatial models, as well as preparation of zoning and regional development directions based on geographic information science knowledge and skills.																																																																						
References	Main :																																																																						
	<ol style="list-style-type: none"> 1. Liu, G. J.; Mason, P.J. (2009). Essential Image Processing and GIS for Remote Sensing. London ; Wiley-Blackwell 2. Canty, M.J. (2014). Image Analysis Classification and Change Detection In Remote Sensing-Third Edition. London; CRC Press 3. Skidmore, A. (2002). Environmental Modelling with GIS and Remote Sensing. London; Taylor & Francis 4. Isard, W. (1960). Methods of Regional Analysis: an Introduction to Regional Science. Centridge; The M.I.T. Press 5. Vivo, B.D.; Belkin, H.E.; Lima A. (2008). Environmental Geochemistry: Site Characterization, Data Analysis and Case Histories. Amsterdam; Elsevier 6. Schowengerdt, R.A. (2007). Remote Sensing: Models and Methods for Image Processing-Third Edition. Amsterdam; Elsevier 7. Brimicombe, A. (2010). GIS, Environmental Modeling and Engineering-Second Edition. London; CRC Press 8. McCoy, R.M. (2005). Field Methods in Remote Sensing. New York; The Guilford Press 9. Onsrud, H.; Kuhn, W. (2016). Advancing Geographic Information Science: The Past and Next Twenty Years. Needham; GDI Association Press 10. O'Brien, L. (1992). Introducing Quantitative Geography: Measurement, Methods and Generalised Linear Models. London; Routledge 																																																																						

		Supporters:					
Supporting lecturer		Dr. Eko Budiyanto, S.Pd., M.Si.					
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 understand the concept of geographic information science for regional areas	1.Explain the concept of territory 2.Explain the concept of territory	Criteria: Participation: carried out by observing student activities (weight 2) Tasks: carried out on each indicator (weight 3) Form of Assessment : Project Results Assessment / Product Assessment	Presentations, discussions, assignments 2 x 50	Presentations, discussions, assignments 1 x 60	Material: geographic information science for regionalism Reference: <i>Brimicombe, A. (2010). GIS, Environmental Modeling and Engineering-Second Edition. London; CRC Press</i>	7%
2	Students understand the concept of geographic information science for regional areas	1.Explain the concept of territory 2.Explain the concept of territory	Criteria: Participation: carried out by observing student activities (weight 2) Tasks: carried out on each indicator (weight 3) Form of Assessment : Project Results Assessment / Product Assessment	Presentations, discussions, assignments 2 x 50	Presentations, discussions, assignments 1 x 60	Material: geographic information science for regionalism Reference: <i>Brimicombe, A. (2010). GIS, Environmental Modeling and Engineering-Second Edition. London; CRC Press</i>	5%
3	Understand entity relationships	Explain entity relationships	Criteria: Participation: carried out by observing student activities (weight 2) Tasks: carried out on each indicator (weight 3) Form of Assessment : Project Results Assessment / Product Assessment	Presentations, discussions and assignments 2 x 50	Presentations, discussions and assignments 1 x 60	Material: entity relationship References: <i>Isard, W. (1960). Methods of Regional Analysis: an Introduction to Regional Science. Centridge; The MIT Press</i>	7%

4	Understand entity relationships	Explain entity relationships	<p>Criteria: Participation: carried out by observing student activities (weight 2) Tasks: carried out on each indicator (weight 3)</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Presentations, discussions and assignments 2 x 50	Presentations, discussions and assignments 1 x 60	<p>Material: entity relationship</p> <p>References: <i>Isard, W. (1960). Methods of Regional Analysis: an Introduction to Regional Science. Centridge; The MIT Press</i></p>	7%
5	Understand spatial analysis	Explain spatial analysis	<p>Criteria: Participation: carried out by observing student activities (weight 2) Tasks: carried out on each indicator (weight 3)</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Presentations, discussions and assignments 2 x 50	Presentations, discussions and assignments 1 x 60	<p>Material: spatial analysis</p> <p>References: <i>Skidmore, A. (2002). Environmental Modeling with GIS and Remote Sensing. London; Taylor & Francis</i></p>	7%
6	Understand spatial analysis	Explain spatial analysis	<p>Criteria: Participation: carried out by observing student activities (weight 2) Tasks: carried out on each indicator (weight 3)</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Presentations, discussions and assignments 2 x 50	Presentations, discussions and assignments 1 x 60	<p>Material: spatial analysis</p> <p>References: <i>Skidmore, A. (2002). Environmental Modeling with GIS and Remote Sensing. London; Taylor & Francis</i></p>	7%
7	Understand spatial analysis	Explain spatial analysis	<p>Criteria: Participation: carried out by observing student activities (weight 2) Tasks: carried out on each indicator (weight 3)</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Presentations, discussions and assignments 2 x 50	Presentations, discussions and assignments 1 x 60	<p>Material: spatial analysis</p> <p>References: <i>Skidmore, A. (2002). Environmental Modeling with GIS and Remote Sensing. London; Taylor & Francis</i></p>	7%
8		understanding of concepts	<p>Criteria: Participation: carried out by observing student activities (weight 2) Tasks: carried out on each indicator (weight 3)</p> <p>Form of Assessment : Test</p>	written test 2 x 50	written test 1 x 60		5%
9	Understand image processing		<p>Criteria: Participation: carried out by observing student activities (weight 2) Tasks: carried out on each indicator (weight 3)</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Presentations, discussions, questions and answers 2 x 50	Presentation, discussion, question and answer 1 x 60	<p>Material: digital image processing</p> <p>References: <i>Liu, G.J; Mason, P. J. (2009). Essential Image Processing and GIS for Remote Sensing. London ; Wiley-Blackwell</i></p>	5%

10	Understand image processing		<p>Criteria: Participation: carried out by observing student activities (weight 2) Tasks: carried out on each indicator (weight 3)</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Presentations, discussions, questions and answers 2 x 50	Presentation, discussion, question and answer 1 x 60	<p>Material: digital image processing References: <i>Liu, GJ; Mason, P. J. (2009). Essential Image Processing and GIS for Remote Sensing. London ; Wiley-Blackwell</i></p>	5%
11	Understand image processing		<p>Criteria: Participation: carried out by observing student activities (weight 2) Tasks: carried out on each indicator (weight 3)</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Presentations, discussions, questions and answers 2 x 50	Presentation, discussion, question and answer 1 x 60	<p>Material: digital image processing References: <i>Liu, GJ; Mason, P. J. (2009). Essential Image Processing and GIS for Remote Sensing. London ; Wiley-Blackwell</i></p>	5%
12	Understand the analysis of natural resource potential	Explains analysis for natural resource potential	<p>Criteria: Participation: carried out by observing student activities (weight 2) Tasks: carried out on each indicator (weight 3)</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Presentations, discussions and questions and answers 2 x 50	Presentations, discussions and questions and answers 1 x 60	<p>Material: analysis of natural resource potential Reference: <i>Isard, W. (1960). Methods of Regional Analysis: an Introduction to Regional Science. Centridge; The MIT Press</i></p> <hr/> <p>Material: analysis of natural resource potential Reference: <i>Brimicombe, A. (2010). GIS, Environmental Modeling and Engineering- Second Edition. London; CRC Press</i></p>	7%

13	Understand the analysis of natural resource potential	Explains analysis for natural resource potential	<p>Criteria: Participation: carried out by observing student activities (weight 2) Tasks: carried out on each indicator (weight 3)</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Presentations, discussions and questions and answers 2 x 50	Presentations, discussions and questions and answers 1 x 60	<p>Material: analysis of natural resource potential Reference: <i>Isard, W. (1960). Methods of Regional Analysis: an Introduction to Regional Science. Centridge; The MIT Press</i></p> <p>Material: analysis of natural resource potential Reference: <i>Brimicombe, A. (2010). GIS, Environmental Modeling and Engineering-Second Edition. London; CRC Press</i></p>	7%
14	Understand regional analysis for urban areas	Explains regional analysis for urban areas	<p>Criteria: Participation: carried out by observing student activities (weight 2) Tasks: carried out on each indicator (weight 3)</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Presentations, discussions and questions and answers 2 x 50	Presentations, discussions and questions and answers 1 x 60	<p>Material: urban areas Reference: <i>Brimicombe, A. (2010). GIS, Environmental Modeling and Engineering-Second Edition. London; CRC Press</i></p>	7%
15	Understand regional analysis for urban areas	Explains regional analysis for urban areas	<p>Criteria: Participation: carried out by observing student activities (weight 2) Tasks: carried out on each indicator (weight 3)</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Presentations, discussions and questions and answers 2 x 50	Presentations, discussions and questions and answers 1 x 60	<p>Material: urban areas Reference: <i>Brimicombe, A. (2010). GIS, Environmental Modeling and Engineering-Second Edition. London; CRC Press</i></p>	7%
16			<p>Criteria: Participation: carried out by observing student activities (weight 2) Tasks: carried out on each indicator (weight 3)</p> <p>Form of Assessment : Test</p>	written test 2 x 50	written test 1 x 60		5%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Project Results Assessment / Product Assessment	90%
2.	Test	10%
		100%

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** abilities in the process and student learning outcomes are specific and measurable statements that identify the abilities 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.