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

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Computer Applications II	8720202007		T=2	P=0	ECTS=3.18	5	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: The Basic Analysis Geographic Information Systems course discusses data collection systems, spatial and attribute data input, spatial and attribute data processing, overlay analysis, buffers, queries, trends, nearest neighbor analysis (NNA), network analysis, computer applications, model applications and model evaluation . Learning is carried out for one semester using a project-based learning approach with demonstration methods, practicums and individual and group assignments. Assessment is carried out through written, performance and portfolio tests.

References

Main :

1.

1. Budiyanto, Eko, 2011, *Pengenalan dan Bekerja dengan Arcview* , Pustaka Pelajar, Yogjakarta
2. Chris Brunsdon and Lex Comber, 2014, *An Introduction to R for Spatial Analysis and Mapping* , SAGE Publications Ltd
3. ESRI, 2014, *ArcGIS 10.2 Manual* , ESRI Publiser, New York
4. John C. Rodgers, et all, 2012, *Geospatial Online Instruction Model, Review of International Geographycal Education Online* Vol. 2 Nomor 1 Spring 2012
5. Lilywati, H dan Budiman, 2007, *Data Spasial, Pilihan Cerdas Bangsa Yang Bijak* , PT Sarana Komunikasi Utama, Bogor.
6. National Research Council, 2006, *Learning to The Think Spatially: GIS as a Support System in The K-12 Curriculum,* The National Academies Press, Washington.
7. Sri Utami, Wiwik dan Ita Mardiani Z, 2014, Petunjuk Praktikum SIG, Tidak Dipublikasikan, Surabaya

Supporters:

Supporting lecturer: Dra. Ita Mardiani Zain, M.Kes.
Dr. Muzayanah, S.T., M.T.
Dian Ayu Larasati, S.Pd., M.Sc.

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	Determine analytical techniques in GIS studies	Explain the various uses of analysis techniques in GIS	**Criteria:** The assessment contained in Assessment Sheet 1 is carried out during the Mid-Semester Examination (UTS)	- Pulpit lecture - Question and answer. - Discussion 2 X 50			0%
2	Collecting spatial data	- Collect terrestrial data - Identify tabular data in GIS	**Criteria:** The assessment contained in Assessment Sheet 1 is carried out during the Mid-Semester Examination (UTS)	- Pulpit lecture - Question and answer. - Discussion - assignment 4 X 50			0%
3	Collecting spatial data	- Collect terrestrial data - Identify tabular data in GIS	**Criteria:** The assessment contained in Assessment Sheet 1 is carried out during the Mid-Semester Examination (UTS)	- Pulpit lecture - Question and answer. - Discussion - assignment 4 X 50			0%
4	Create digital maps	- Digitizing the base map - Editing the base map - Transforming the base map - Creating labeling on the base map	**Criteria:** 1. Assessment sheet 2 is used to assess students' mastery in using Arcview/ArcGIS software, students' skills in applying the software to carry out digital map analysis. 2. Assessment sheet 2 is used to observe students' responsibilities in carrying out/completing each task given and observing students' resilience in the Basic Analysis GIS practicum. 3. The assessment in Assessment Sheet 2 is carried out during lectures in the GIS Basic Analysis course.	- Assignment - 8 X 50 Performance			0%
5	Create digital maps	- Digitizing the base map - Editing the base map - Transforming the base map - Creating labeling on the base map	**Criteria:** 1. Assessment sheet 2 is used to assess students' mastery in using Arcview/ArcGIS software, students' skills in applying the software to carry out digital map analysis. 2. Assessment sheet 2 is used to observe students' responsibilities in carrying out/completing each task given and observing students' resilience in the Basic Analysis GIS practicum. 3. The assessment in Assessment Sheet 2 is carried out during lectures in the GIS Basic Analysis course.	- Assignment - 8 X 50 Performance			0%

6	Create digital maps	- Digitizing the base map - Editing the base map - Transforming the base map - Creating labeling on the base map	**Criteria:** 1. Assessment sheet 2 is used to assess students' mastery in using Arcview/ArcGIS software, students' skills in applying the software to carry out digital map analysis. 2. Assessment sheet 2 is used to observe students' responsibilities in carrying out/completing each task given and observing students' resilience in the Basic Analysis GIS practicum. 3. The assessment in Assessment Sheet 2 is carried out during lectures in the GIS Basic Analysis course.	- Assignment - 8 X 50 Performance			0%
7	Create digital maps	- Digitizing the base map - Editing the base map - Transforming the base map - Creating labeling on the base map	**Criteria:** 1. Assessment sheet 2 is used to assess students' mastery in using Arcview/ArcGIS software, students' skills in applying the software to carry out digital map analysis. 2. Assessment sheet 2 is used to observe students' responsibilities in carrying out/completing each task given and observing students' resilience in the Basic Analysis GIS practicum. 3. The assessment in Assessment Sheet 2 is carried out during lectures in the GIS Basic Analysis course.	- Assignment - 8 X 50 Performance			0%
8	UTS			2 X 50			0%

9	Apply buffer analysis techniques	- Perform line buffer analysis - Perform polygon buffer analysis - Perform buffer analysis	**Criteria:** 1. Assessment sheet 2 is used to assess students' mastery in using Arcview/ArcGIS software, students' skills in applying the software to carry out digital map analysis. 2. Assessment sheet 2 is used to observe students' responsibilities in carrying out/completing each task given and observing students' resilience in the Basic Analysis GIS practicum. 3. The assessment in Assessment Sheet 2 is carried out during lectures in the GIS Basic Analysis course.	- Demonstration - Performance 2 X 50			0%
10	Apply overlay analysis techniques	- Applying overlay analysis techniques - Analyzing overlay analysis results	**Criteria:** 1. Assessment sheet 2 is used to assess students' mastery in using Arcview/ArcGIS software, students' skills in applying the software to carry out digital map analysis. 2. Assessment sheet 2 is used to observe students' responsibilities in carrying out/completing each task given and observing students' resilience in the Basic Analysis GIS practicum. 3. The assessment in Assessment Sheet 2 is carried out during lectures in the GIS Basic Analysis course.	- Demonstration - Performance 2 X 50			0%
11	Apply query analysis techniques	- Apply query analysis techniques - Create conformity tables - Analyze query analysis results	**Criteria:** The assessment contained in Assessment Sheet 3 is carried out during the Final Semester Examination (UAS) in the form of a performance test in making digital maps	- Demonstration - Performance 4 X 50			0%

12	Apply query analysis techniques	- Apply query analysis techniques - Create conformity tables - Analyze query analysis results	**Criteria:** 1. Assessment sheet 2 is used to assess students' mastery in using Arcview/ArcGIS software, students' skills in applying the software to carry out digital map analysis. 2. Assessment sheet 2 is used to observe students' responsibilities in carrying out/completing each task given and observing students' resilience in the Basic Analysis GIS practicum. 3. The assessment in Assessment Sheet 2 is carried out during lectures in the GIS Basic Analysis course.	- Demonstration - Performance 4 X 50			0%
13	Applying NNA analysis	- Applying NNA analysis techniques - Measuring centograms of growth/activity centers - Reviewing NNA analysis results	**Criteria:** 1. Assessment sheet 2 is used to assess students' mastery in using Arcview/ArcGIS software, students' skills in applying the software to carry out digital map analysis. 2. Assessment sheet 2 is used to observe students' responsibilities in carrying out/completing each task given and observing students' resilience in the Basic Analysis GIS practicum. 3. The assessment in Assessment Sheet 2 is carried out during lectures in the GIS Basic Analysis course.	- Demonstration - Performance 4 X 50			0%

14	Applying NNA analysis	- Applying NNA analysis techniques - Measuring centograms of growth/activity centers - Reviewing NNA analysis results	**Criteria:** 1. Assessment sheet 2 is used to assess students' mastery in using Arcview/ArcGIS software, students' skills in applying the software to carry out digital map analysis. 2. Assessment sheet 2 is used to observe students' responsibilities in carrying out/completing each task given and observing students' resilience in the Basic Analysis GIS practicum. 3. The assessment in Assessment Sheet 2 is carried out during lectures in the GIS Basic Analysis course.	- Demonstration - Performance 4 X 50			0%
15	Applying trend analysis and NA analysis (Networking Analysis)	- Apply "trend" analysis techniques - Create charts/diagrams - Apply NA analysis techniques. - Finding alternative routes - Finding places/study centers in spatial studies - Analyzing the results of NA analysis	**Criteria:** 1. Assessment sheet 2 is used to assess students' mastery in using Arcview/ArcGIS software, students' skills in applying the software to carry out digital map analysis. 2. Assessment sheet 2 is used to observe students' responsibilities in carrying out/completing each task given and observing students' resilience in the Basic Analysis GIS practicum. 3. The assessment in Assessment Sheet 2 is carried out during lectures in the GIS Basic Analysis course.	- Demonstration - Performance - presentation 2 X 50			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.