		Universitas Negeri Surabaya Faculty of Mathematics and Natural Sciences Biology Education Undergraduate Study Program		**Document Code**

SEMESTER LEARNING PLAN

Courses		CODE		Course Family		Credit Weight			SEMESTER	Compilation Date
HOTS Assessment		8420502026				T=2	P=0	ECTS=3.18	7	July 15, 2023

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	....	....	Dr. Rinie Pratiwi Puspitawati, M.Si.

Learning model	**Project Based Learning**	
Program Learning Outcomes (PLO)	**PLO study program which is charged to the course**	
	Program Objectives (PO)	
	PO - 1	Developing instruments to access the learning process and learning outcomes in the affective, cognitive and psychomotor domains including literacy and HOTs (high level thinking skills) and being able to develop assessment instructions or guidelines
	PO - 2	Demonstrate critical thinking skills in choosing approaches, methods, and assessment techniques or strategies in accordance with the indicators or competencies being measured.
	PO - 3	Competent in managing and analyzing various assessment results to carry out evaluations and formulate feedback, including for students with special needs
	PO - 4	Utilize various learning sources, research results, media and ICT to develop assessments.

PLO-PO Matrix

P.O
PO-1
PO-2
PO-3
PO-4

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
PO-1																
PO-2																
PO-3																
PO-4																

Short Course Description

Study of the meaning, objectives, functions and principles of assessment, taxonomy of cognitive, affective and psychomotor learning outcomes, including literacy and HoTs, various approaches, methods and assessment strategies/techniques, forms of instruments, assessment rubrics/guidelines, analysis and interpretation of assessment results, as well as their use in the world of education.

References

Main :

1. Anderson, L.W., & Krathwohl, D.R. (Eds). (2001). A taxonomy for learning, teaching, and assessing: A revision of Bloom&rsquos taxonomy of educational objectives. New York: Longman.
2. Brookhart, Susan M. (2010). How to assess higher-order thinking skills in your classroom. Alexandria: ASCD.
3. Cohen, R.J., Swerdlik, M.E., & Sturman, E.D. (2013). Psychological Testing and Assessment: An Introduction to test and measurement. New York: McGraw Hill Comp.
4. Glencoe Series. (tt). Performance Assessment in The Science Classroom. New York: McGraw- Hill Company.
5. Gronlund, N.E. (2003). Assessment of student achievement (7th ed.). Boston: Allyn and Bacon.
6. Gronlund, N.E. (2004). Writing instructional objectives for teaching and learning. (7th ed.). New Jersey: Pearson Merrill Prentice Hall.
7. Johnson, D.W. & Johnson, R.T. (2002). Meaningful assessment: A manageable and cooperative process. Boston: Allyn and Bacon..
8. Wright, R.J. (2008). Educational assessment. Los Angeles: Sage Publications.

Supporters:

1. Oosterhof, A. (2003). Developing and Using Classroom Assessments. New Jersey: Merrill Prentice Hall.

Supporting lecturer	MUSLIMIN IBRAHIM Dr. Raharjo, M.Si. Prof. Dr. Endang Susantini, M.Pd. Dr. Muji Sri Prastiwi, S.Pd., M.Pd. Dr. Pramita Yakub, S.Pd., M.Pd. Eva Kristinawati Putri, 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	Understand the concepts, approaches, principles, types and functions of assessment	1. Describe measurement, assessment, and evaluation 2. Compare various approaches, principles, types and functions of assessment	**Criteria:** Observation of student activities in class/in the LMS **Form of Assessment** : Participatory Activities	Students and lecturers ask questions regarding the concepts of measurement, assessment and evaluation Lecturers present various approaches, principles, types and functions of assessment Students discuss and compare them 3 X 50	Students brainstorm ideas on the chat feature in Vinesa regarding comparisons of approaches, principles, types and functions of assessment. 1x50	**Material:** concepts, approaches, principles, types and functions of Learning and Learning Evaluation **References:** *Anderson, LW, & Krathwohl, DR (Eds). (2001). A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives. New York: Longman.*	0%

| 2 | Analyze the implementation of assessments | 1. Analyzing assessment characteristics as a function of Assessment as/of/for Learning (AaL, AofL, AfL). 2. Express critical responses to the application of assessments based on research results | **Criteria:** Observation of student activities in class/in the LMS

Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment | Learning is carried out in the following PBL stages: 1. Problem Orientation for students regarding the characteristics of assessment as a function of AaL, AofL, AfL, AaM, AaP, and AaL and the tasks that must be completed 2. Organizing students: Helping understand the problem and the things needed . 3. Guiding group investigations: gathering information and discussing critically the implementation of assessments in accordance with the applicable curriculum (Kurikulum Merdeka, curriculum 2013) 4. Developing and presenting work: compiling group reports and preparing presentations of the results in the form of video presentations. 5. Analyze and evaluate the modeling process: monitor and provide input at each stage of the 3 X 50 modeling | Students submit submissions regarding the implementation of assessments based on the results of 1x50 research | **Material:** application of learning and learning evaluation **References:** *Anderson, LW, & Krathwohl, DR (Eds). (2001). A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives. New York: Longman.* | 5% |
| 3 | Developing cognitive domain assessment instrument constructs | 1. Analyzing Bloom & Andersen's cognitive taxonomy including cognitive levels (C1-C6) and dimensions of science (factual, conceptual, procedural and metacognitive) in Biology 2. Analyzing various thinking skills (Ex: HoTs, Scientific Literacy, Science Process) | **Criteria:** Observation of student activities in class/in the LMS

Form of Assessment : Participatory Activities | Students explore various references to analyze the cognitive domain of Bloom & Andersen's taxonomy. Students discover and explain the characteristics or characteristics of thinking levels and knowledge domains according to Bloom's revised taxonomy. Students explore various references about HoTs, scientific literacy, and science process thinking skills. 2 X 50 | Synchronous discussion via 1x50 webmeeting | **Material:** cognitive domain assessment instrument constructs **References:** *Anderson, LW, & Krathwohl, DR (Eds). (2001). A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives. New York: Longman.* | 0% |

| 4 | Develop assessment grids and cognitive domain assessment instruments (tests) | 1.Analyzing competencies
2.Formulate indicators of competency achievement
3.Create an assessment grid
4.Create question items and scoring guidelines according to the revised Bloom's taxonomy | **Criteria:** Product assessment for making assessment grids, question items and cognitive domain assessment rubrics

Form of Assessment : Project Results Assessment / Product Assessment | Students develop a cognitive domain assessment grid with the following PjBL stages:
1. Basic question: what is the form of cognitive domain assessment, containing literacy and HOTs.
2. Design and Development
3. Determine the deadline for project completion
4. Monitoring: monitor the progress of student group work
5. Test results: peer-review the results of group work
6. Evaluation: reflect and revise based on input in peer-review
7. Publication: Prepare videos presentation of results and reports on group work and discussing them in the 3 X 50 discussion forum | Students submit cognitive assessment tasks through the assignment feature and record video presentations. | **Material:** assessment grids and cognitive domain assessment instruments (tests)
References: *Cohen, RJ, Swerdlik, ME, & Sturman, ED (2013). Psychological Testing and Assessment: An Introduction to test and measurement. New York: McGraw Hill Comp.* | 20% |
| 5 | Develop assessment grids and cognitive domain assessment instruments (tests) | 1.Analyzing competencies
2.Formulate indicators of competency achievement
3.Create an assessment grid
4.Create question items and scoring guidelines according to the revised Bloom's taxonomy | **Criteria:** Product assessment for making assessment grids, question items and cognitive domain assessment rubrics

Form of Assessment : Project Results Assessment / Product Assessment | Students develop a cognitive domain assessment grid with the following PjBL stages:
1. Basic question: what is the form of cognitive domain assessment, containing literacy and HOTs.
2. Design and Development
3. Determine the deadline for project completion
4. Monitoring: monitor the progress of student group work
5. Test results: peer-review the results of group work
6. Evaluation: reflect and revise based on input in peer-review
7. Publication: Prepare videos presentation of results and reports on group work and discussing them in the 3 X 50 discussion forum | Students submit cognitive assessment tasks through the assignment feature and record video presentations. | **Material:** assessment grids and cognitive domain assessment instruments (tests)
References: *Cohen, RJ, Swerdlik, ME, & Sturman, ED (2013). Psychological Testing and Assessment: An Introduction to test and measurement. New York: McGraw Hill Comp.* | 20% |

| 6 | Developing psychomotor assessment instruments | 1. Describe Harrow's psychomotor taxonomy (P1-P6)
2. Comparing psychomotor and science process skills
3. Create psychomotor assessment instruments and science process skills
4. Develop an assessment rubric | **Criteria:** Observation of student activities in class/in the LMS

Form of Assessment : Participatory Activities | Students develop assessment instruments in the psychomotor domain with the PjBL stages as follows:
1. Basic questions: what is the form of assessment in the affective domain, especially spiritual and social attitudes
2. Design and Development
3. Determine the deadline for project completion
4. Monitoring: monitor the progress of student group work
5. Test results: peer-review of group work results
6. Evaluation: reflection and revision based on input in peer-review
7. Publication: Prepare video presentations of group work results and reports about and discuss them in discussion forums
3 X 50 | Students submit cognitive assessment tasks through the assignment feature and record video presentations. | **Material:** psychomotor assessment instrument
Reference: *Glencoe Series. (tt). Performance Assessment in The Science Classroom. New York: McGraw-Hill Company.* | 5% |

7	Developing an affective domain assessment instrument	1. Describe Kratwohl's affective domain taxonomy (A1-A5) 2. Create affective assessment instruments, especially spiritual and social attitudes 3. Develop an assessment rubric	**Criteria:** Make good affective assessment instruments, especially spiritual and social attitudes **Form of Assessment** : Project Results Assessment / Product Assessment	Students develop an affective domain assessment instrument with the PjBL stages as follows: 1. Basic questions: what is the form of assessment in the affective domain, especially spiritual and social attitudes 2. Design and Development 3. Determine the deadline for project completion 4. Monitoring: monitor the progress of student group work 5. Results test: peer-review of group work results 6. Evaluation: reflection and revision based on input in peer-review 7. Publication: Prepare video presentations of group work results and reports about and discuss them in discussion forums 2 X 50	Students submit cognitive assessment tasks through the assignment feature and record video presentations. 1x50	**Material:** Development of affective domain assessment instruments **References:** *Cohen, RJ, Swerdlik, ME, & Sturman, ED (2013). Psychological Testing and Assessment: An Introduction to test and measurement. New York: McGraw Hill Comp.*	10%
8	Midterm exam	-	**Criteria:** - **Form of Assessment** : Test	- 2 X 50	-	**Material:** - **Library:**	15%
9	Develop authentic assessments	1. Comparing traditional, alternative, performance/performance, and authentic assessments 2. Describe the advantages and disadvantages of authentic assessment	**Criteria:** Observation of student activities in class/in the LMS **Form of Assessment** : Participatory Activities	Students develop authentic assessment instruments with the PjBL stages as follows: 1. Basic questions: what form of assessment in the affective domain, especially spiritual and social attitudes 2. Design and Development 3. Determine the deadline for project completion 4. Monitoring: monitor the progress of student group work 2 X 50	Brainstorm on the chat feature on Vinesa about authentic 1x5 assessments	**Material:** authentic assessment **Reference:** *Glencoe Series. (tt). Performance Assessment in The Science Classroom. New York: McGraw-Hill Company.*	5%

10	Develop authentic assessments	1.Comparing traditional, alternative, performance/performance, and authentic assessments 2.Describe the advantages and disadvantages of authentic assessment	**Criteria:** Observation of student activities in class/in the LMS **Form of Assessment** : Participatory Activities	Students develop authentic assessment instruments with the PjBL stages as follows: 1. Basic questions: what form of assessment in the affective domain, especially spiritual and social attitudes 2. Design and Development 3. Determine the deadline for project completion 4. Monitoring: monitor the progress of student group work 2 X 50	Brainstorm on the chat feature on Vinesa about authentic 1x5 assessments	**Material:** authentic assessment **Reference:** *Glencoe Series. (tt). Performance Assessment in The Science Classroom. New York: McGraw-Hill Company.*	0%
11	Developing computer-based tests (Computer based Test)	1.Describe the meaning of CBT, principles and procedures for developing CBT 2.Create computer-based tests with various software	**Criteria:** Observation of student activities in class/in the LMS **Form of Assessment** : Participatory Activities	1. Students download the electronic question making application 2. Students make questions in electronic form (CBT) 2 X 50	Students submit CBT assessment tasks through the assignment feature and provide feedback to each other via the forum feature in Vinesa 1x50	**Material:** computer-based test (Computer based Test) **References:** *Brookhart, Susan M. (2010). How to assess higher-order thinking skills in your classroom. Alexandria: ASCD.*	5%
12	Analyze the quality of the instrument	1.Describe validity and reliability 2.Determining the validity of assessment instruments 3.Calculating the reliability of questions, tests, and SE	**Criteria:** Observation of student activities in class/in the LMS **Form of Assessment** : Participatory Activities	1. Students and lecturers ask questions regarding the concepts of validity, reliability and SE 2. Students look for examples of test data and analyze the validity, reliability and SE 2 X 50	Students submit instrument quality analysis assessment assignments through the assignment feature in Vinesa 1x50	**Material:** instrument quality **References:** *Johnson, DW & Johnson, RT (2002). Meaningful assessment: A manageable and cooperative process. Boston: Allyn and Bacon..*	0%
13	Determine scores, grades and Test Item Parameters	1.Calculates scores and grades 2.Describe the different power, level of difficulty, and item sensitivity index 3.Calculating power difference 4.Calculate the level of difficulty 5.Calculate the item sensitivity index 6.Skilled in using question item analysis software	**Form of Assessment** : Participatory Activities	1. Students and lecturers ask questions regarding the concept of differential power, level of difficulty, and sensitivity index of items. 2. Students look for examples of test data on questions and analyze the differential power, level of difficulty, and item sensitivity index. 3. Students carry out item analysis with/or without software. 3 X 50	Students submit instrument quality analysis assessment assignments through the assignment feature in Vinesa 1x50		5%

No							
14	Determine scores, grades and Test Item Parameters	1.Calculates scores and grades 2.Describe the different power, level of difficulty, and item sensitivity index 3.Calculating power difference 4.Calculate the level of difficulty 5.Calculate the item sensitivity index 6.Skilled in using question item analysis software	**Form of Assessment** : Participatory Activities	1. Students and lecturers ask questions regarding the concept of differential power, level of difficulty, and sensitivity index of items. 2. Students look for examples of test data on questions and analyze the differential power, level of difficulty, and item sensitivity index. 3. Students carry out item analysis with/or without software. 2 X 50	Students submit instrument quality analysis assessment assignments through the assignment feature in Vinesa 1x50	**Material:** scores, values and Test Item Parameters **References:** *Johnson, DW & Johnson, RT (2002). Meaningful assessment: A manageable and cooperative process. Boston: Allyn and Bacon..*	5%
15	Communicate and utilize assessment results	1.Make a report on learning outcomes using assessments in the affective, cognitive and psychomotor domains. 2.Describe the use of assessment results	**Criteria:** Observation of student activities in class/in the LMS **Form of Assessment** : Project Results Assessment / Product Assessment	☐Students describe processing and reporting assessment results after discussing learning resources Students discuss the use of learning and learning evaluation results 3 X 50	Students submit the task of communicating and utilizing evaluation results through the assignment feature and recording video presentations. 1x50		5%
16				- 2x50	- -		5%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	27.5%
2.	Project Results Assessment / Product Assessment	57.5%
3.	Test	15%
		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** 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.