	Universitas Negeri Surabaya Faculty of Education, Early Childhood Education Masters Study Program	Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
AUD Science and Mathematics Development	8610702014	Compulsory Study Program Subjects	T=1	P=1	ECTS=4.48	2	February 16, 2023

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	Dr. Nurul Khotimah, S.Pd., M.Pd.	Dr. Nurul Khotimah, S.Pd., M.Pd.	Dr. Ruqoyyah Fitri, S.Ag., M.Pd.

Learning model	**Project Based Learning**

Program Learning Outcomes (PLO)

PLO study program which is charged to the course

PLO-7	Synthesize theories of early childhood education and learning and conduct children's research with various innovative approaches; (Special Skills) (profile 1);

Program Objectives (PO)

PO - 1	Create a background description of the importance of science and mathematics education in the curriculum and early childhood education practices

PLO-PO Matrix

P.O	PLO-7
PO-1	

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																

Short Course Description

Science and mathematics are two aspects of learning content in the education curriculum for early childhood. These two areas must be viewed from three perspectives, namely the development perspective, the activity perspective and the subject matter perspective or the content of the learning material. From a developmental perspective, science and mathematics are fields that are used as vehicles for developing aspects of cognitive development and various other related aspects of development. In the activity perspective (science and mathematics as activity), both fields are activities or activities that are live and exist in children's daily lives. In the third perspective, science and mathematics can be viewed as content material (science and mathematics as subject matter) of learning activities in early childhood education institutions. This course will provide a number of competencies related to students' ability to understand, analyze, use and develop theoretical concepts about science and mathematics education in early childhood. Apart from that, students can also elaborate on various science and mathematics learning designs for early childhood by using various types and processes of play in various real life, meaningful and enjoyable contexts.

References

Main :

1. Arthur, L., et al. (2001). Programming and Planning in Early Childhood Settings. 2nd ed. Harcourt Australia: Pty Limited. Bentzen, Warren R. (2005).Seeing Young Children: A Guide to Observing and Recording Behavior. 5th edition. New York:Thomas Delmar Learning. Beaty, Janice J. (2010). Observing Development of Young Child. New Jersey: Pearson Education, Inc. Bennett., William, Chester E. Finn and John T.E. Cribb., (2007). The Educated Child. New York: The Free Press. Brewer, Jo An., (2007). Introduction to Early Childhood Education. Preschool through Primary Grade. Boston: Pearson Education, Inc Charlesworth, Rosalind and Karen K. Lind, (1995) Math and Science, New York: Delmar Publisher. Dodge, Diane Trister., Laura J.Colker (1999). The Creative Curricuum for Early Childhood. Washington DC: Teaching Strategies Inc.

Supporters:

Supporting lecturer	Dr. Ruqoyyah Fitri, S.Ag., M.Pd. Dr. Nurul Khotimah, 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	1. Summarize the position of science and mathematics in the PAUD unit curriculum 2. Describe the urgency of science and mathematics education 3. Map basic concepts and terminology in AUD science and mathematics education		**Criteria:** Quiz **Form of Assessment** : Project Results Assessment / Product Assessment	Discussion, Cooperative Learning.	Blended Learning Asynchronous learning at Vinesa		50%
2		Mhsw created a concept map of the urgency, position and terminology of AUD science and mathematics education in the PAUD curriculum	**Form of Assessment** : Project Results Assessment / Product Assessment	Discussion, Cooperative Learning.	Blended Learning Asynchronous learning at Vinesa	**Material:** The position of Science and Mathematics in the PAUD curriculum **Reference:** *Arthur, L., et al. (2001). Programming and Planning in Early Childhood Settings. 2nd ed. Harcourt Australia: Pty Limited. Bentzen, Warren R. (2005). Seeing Young Children: A Guide to Observing and Recording Behavior. 5th edition. New York: Thomas Delmar Learning. Beaty, Janice J. (2010). Observing Development of Young Children. New Jersey: Pearson Education, Inc. Bennett., William, Chester E. Finn and John TE Cribb., (2007). The Educated Child. New York: The Free Press. Brewer, Jo An., (2007). Introduction to Early Childhood Education. Preschool*	50%

						through Primary Grade. Boston: Pearson Education, Inc. Charlesworth, Rosalind and Karen K. Lind, (1995) Mathematics and Science, New York: Delmar Publisher. Dodge, Diane Trister., Laura J. Colker (1999). The Creative Curriculum for Early Childhood. Washington DC: Teaching Strategies Inc.	
3							0%
4						**Material:** The position of Science and Mathematics in the PAUD curriculum **Reference:** *Arthur, L., et al. (2001). Programming and Planning in Early Childhood Settings. 2nd ed. Harcourt Australia: Pty Limited. Bentzen, Warren R. (2005). Seeing Young Children: A Guide to Observing and Recording Behavior. 5th edition. New York: Thomas Delmar Learning. Beaty, Janice J. (2010). Observing Development of Young Children. New Jersey: Pearson Education, Inc. Bennett., William, Chester E. Finn and John TE Cribb., (2007). The Educated Child. New York: The Free Press. Brewer, Jo An., (2007). Introduction*	50%

						to Early Childhood Education. Preschool through Primary Grade. Boston: Pearson Education, Inc. Charlesworth, Rosalind and Karen K. Lind, (1995) Mathematics and Science, New York: Delmar Publisher. Dodge, Diane Trister., Laura J. Colker (1999). The Creative Curriculum for Early Childhood. Washington DC: Teaching Strategies Inc.	
5							0%
6							0%
7							0%
8							0%
9							0%
10							0%
11							0%
12							0%
13							0%
14							0%
15							0%
16							0%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Project Results Assessment / Product Assessment	100%
		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.