	Universitas Negeri Surabaya Faculty of Mathematics and Natural Sciences, Mathematics Education Masters Study Program	Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Ethnomathematics (Ethnomathematics)	8410200127		T=2	P=0	ECTS=4.48	2	July 18, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	.....	.....	Dr. Agung Lukito, M.S.

Learning model	**Case Studies**
Program Learning Outcomes (PLO)	**PLO study program that 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	This course provides students with insight, knowledge and skills in utilizing Indonesian culture in mathematics education. The material coverage includes the concept of ethnomathematics, integration of culture and mathematics, the use of culture or traditions in Indonesia that have ethnomathematics value, studying various recent articles on ethnomathematics, and using them in designing mathematics learning. Learning for this course is presented through literature study activities, searching for the latest ethnomathematics articles on the internet and assignments to design learning by utilizing Indonesian culture.
References	**Main :**

1. Mengaji pengertian etnomatematika, mengaji berbagai artikel tentang etnomatematika, menggali budaya atau tradisi di Indonesia yang bernilai matematika dalam pembelajaran matematika.

[1] Abbas, S. A. (2000). *Ethnomathematics* and teaching of mathematics in primary schools: a new perspective. *Kano Studies* , *1* (1), 135–144.
[2] Abdullah, A. S. (2017). *Ethnomathematics* in perspective of sundanese culture. *Journal on Mathematics Education* , *8* (1), 1–16.
[3] Ascher, M. (1991). *Ethnomathematics: a multicultural view of mathematical ideas* . Cole Publishing Company, California.
[4] Ascher, M., & Ascher, R. (1986). *Ethnomathematics* . *History of Science* , *24* (2), 125–144.
[5] Barton. (1985). *Ethnomathematics* and curriculum change. *Unpublished Manuscript* .
[6] Barton, B. (1996). *Ethnomathematics: Exploring cultural diversity in mathematics* . ResearchSpace@ Auckland.
[7] Borba, M. de C. (1990). *Ethnomathematics* and Education. *For the Learning of Mathematics* , *10* , 1.
[8] Borba, M. de C. (1992). Teaching mathematics: *Ethnomathematics* , the voice of sociocultural groups. *The Clearing House* , *65* (3), 134–135.
[9] D'Ambrosio, U. (1985). *Ethnomathematics* and its place in the history and pedagogy of mathematics. *For the Learning of Mathematics* , *5* (1), 44–48.

[10] D'Ambrosio, U. (1989). On *ethnomathematics* . *Philosophia Mathematica* , *2* (1), 3–14.
[11] D'Ambrosio, U. (1990). Etnomatemática [*Ethnomathematics*] . *São Paulo, SP, Brazil: Editora Ática* .
[12] D'Ambrosio, U. (1993). Etnomatemática: um programa. *A Educacao Matematica Em Revista* , *1* (1), 5–11.
[13] D'Ambrosio, U. (1997). *Ethnomathematics* and its place in the history and pedagogy of mathematics. *Ethnomathematics: Challenging Eurocentrism in Mathematics Education* , 13–24.
[14] D'Ambrosio, U. (1998). In focus... mathematics, history, *ethnomathematics* and education: A comprehensive program. *The Mathematics Educator* , *9* (2).
[15] D'Ambrosio, U. (1999a). *Ethnomathematics* and its first international congress. *ZDM* , *31* (2), 50–53.
[16] D'Ambrosio, U. (1999b). Literacy, matheracy, and technocracy: A trivium for today. *Mathematical Thinking and Learning* , *1* (2), 131–153.
[17] D'Ambrosio, U. (2007). Peace, sosial justice and *ethnomathematics* . *The Montana Mathematics Enthusiast, Monograph* , *1* (2007), 25–34.
[18] D'Ambrosio, U. (2000). Etnomatemática e modelagem [*Ethnomathematics* and modeling]. *Anais Do Primeiro Congresso Brasileiro de Etnomatemática--CBEm-1. São Paulo: FE-USP* , *142* .
[19] D'Ambrósio, U. (2006). *Ethnomathematics: Link between traditions and modernity* . BRILL.
[20] Gerdes, P. (1994). Reflections on *ethnomathematics* . *For the Learning of Mathematics* , *14* (2), 19–22.
[21] Gerdes, P. (1996). *Ethnomathematics* and mathematics education. In A. J. Bishop, M. A. (Ken) Clements, K. Clements, C. Keitel, J. Kilpatrick, & C. Laborde (Eds.), *International handbook of mathematics education* (pp. 909–943). Kluwer Academic Publishers.
[22] Gerdes, P. (1998). On culture and mathematics teacher education. *Journal of Mathematics Teacher Education* , *1* (1), 33–53.
[23] Gerdes, P. (2001). *Ethnomathematics* as a New Research Field, Illustrated by Studies of Mathematical Ideas in African History. *Science and Cultural Diversity: Filing a Gap in the History of Sciences. Cuadernos de Quipu, 5* , 10–34. https://doi.org/10.1.1.551.2369
[24] Franscois, Karen and Van Kerkhove, Bart. 2011. *Ethnomathematics and The Philosophy of Mathematics (Education)* . In Benedikt Lowe, Thomas Muller (eds). *PhiMSAMP. Philosophy of Mathematics: Sociological Aspects and Mathematical Practice* . College Publications, London. 2010. Texs in Philosophy 11; pp.121-154.
[25], Mesquita, Monica, Restivo, Sal. & D'Ambrosio, Ubiratan. 2011. *Asphalt Children and City Streets: A Life, A City, and A Case Study of History, Culture, and Ethnomathematics in Sao Paulo* . ROTTERDAM: SENSE PUBLISHER.
[26] Powell, Arthur B. & Frankenstein, Marilyn (Eds). 1997. *Ethnomathematics: Challenging Eurocentrism in Mathematics Education* . New York: State University of New York Press.
[27] Ascher, Marcia. 1991. *Ethnomathematics: A Multicultural View of Mathematics Ideas* . Pasific Grove: Brooks/Cole Publishing Company
[28] Orey, D. C., & Rosa, M. (2006). *Ethnomathematics* : Cultural assertions and challenges towards pedagogical action. *The Journal of Mathematics and Culture* , *1* (1), 57–78.
[29] Orey, D. C., & Rosa, M. (2014). The borrowers: using transportation, addresses, and paralelep{\'\i}pedos to prompt creativity using *ethnomodeling* . *Technology, Creativity and Affect in Mathematical Problem Solving* , 168.
[30] Palhares, P. (2012). Mathematics Education and *Ethnomathematics* . A Connection in Need of Reinforcement. *REDIMAT-Journal of Research in Mathematics Education* , *1* (1), 79–92.
[31] Rosa, M., & Orey, D. C. (2011). *Ethnomodeling* : a pedagogical action for uncovering ethnomathematical practices. *Journal of Mathematical Modelling and Application* , *1* (3), 58–67.
[32] Rosa, M., & Orey, D. C. (2013c). The mathematics of the curves on the wall of the Colégio Arquidiocesano and its mathematical models: a case for *ethnomodeling* . *Journal of Mathematical Modelling and Application* , *1* (8), 42–62.

Supporters:	

Supporting lecturer	Prof. Dr. Mega Teguh Budiarto, 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							0%
2							0%
3							0%
4							0%
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: 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.