

Module Descriptions

A **module** is a self-contained **learning unit** within a higher education program that includes thematically related courses and is assigned a **fixed number of credits**. It follows specific **learning objectives**, includes an **assessment component**, and contributes to achieving the qualifications of a degree program. In some countries, “modules” are also named “courses”.

Please provide a module description for each module. In addition to the compulsory and elective modules, this also includes credited internships and the final thesis.

Please summarize all module descriptions in one document (Module Handbook) and create a table of contents so that the modules can be found easily.

Module designation	<i>Ethnomathematics</i>
Semester(s) in which the module is taught	2
Person responsible for the module	<i>Prof. Dr. Marsigit M.A. Endah Retnowati, S.Pd., M.Ed., Ph.D.</i>
Language	<i>Indonesian.</i>
Relation to curriculum	<i>Elective.</i>
Teaching methods	<i>Lectures, discussions, presentations, and experiments.</i>
Workload (incl. contact hours, self-study hours)	<i>Total workload is 90.67 hours per semester which consists of 100 minutes lectures, 120 minutes structured activities, and 120 minutes self-study per week for 16 weeks.</i>
Credit points	2
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	<i>After taking this course the students have ability to:</i> <i>CO1. Explain the principles of preliminary research related to ethnomathematics at artifact sites within the context of mathematics education.</i> <i>CO2. Simulate mathematics instruction based on ethnomathematics.</i> <i>CO3. Conduct advanced research on ethnomathematics.</i> <i>CO4. Write and publish ethnomathematics articles in academic journals.</i>

Content	<i>This course explores the principles of mathematics instruction grounded in ethnomathematics, emphasizing culturally relevant approaches to teaching and learning. It includes the exploration of local ethnomathematical practices and their potential use as instructional media in school mathematics. Students will examine and utilize ethnomathematical artifacts as tools to enhance mathematical understanding and engagement. Additionally, the course addresses empirical research on the use and development of ethnomathematics, enabling students to investigate its application in educational settings and contribute to scholarly work in the field.</i>
Examination forms	<i>Presentations and written examinations.</i>
Study and examination requirements	<i>The course assessment is divided into two main components:</i> 1. Cognitive Assessment (40%) <i>This includes the following elements:</i> ○ Attendance: 5% ○ Quiz: 0% ○ Assignment: 15% ○ Midterm Exam (UTS): 10% ○ Final Exam (UAS): 10% 2. Participatory Assessment (60%) <i>This includes:</i> ○ Case Study: 30% ○ Team-Based Project: 30% Total: 100%

Reading list	1. D'Ambrosio, U. 1991. 'Ethnomathematics and its place in the history and pedagogy of mathematics', in M. Harris (ed.). <i>Schools, Mathematics and Work</i>. TheFalmer Press. London. pp. 15–25. 2. D'Ambrosio, U.: 1994. 'Cultural framing of mathematics teaching and learning', in R. Biehler, R.W. Scholz, R. Sträßer and B. Winklelmann (eds.). <i>Didacticsof Mathematics as a Scientific Discipline</i>. Kluwer Academic Publishers. Dordrecht. pp. 443–455 3. Rosa & Orey. 2011. <i>Ethnomathematics: the cultural aspect of mathematics</i>. http://dialnet.unirioja.es/descarga/articulo/3738356.pdf. 4. Iluno, C. and Taylor, J.I. 2013. <i>Ethnomathematics: The Key to Optimizing Learning and Teaching of Mathematics</i>. Lagos: IOSR Journal of Research &Method in Education (IOSR-JRME). 5. Favilli, F. 2011. <i>Ethnomathematics And Mathematics Education. Proceedings of the 10th International Congress of Mathematics Education Copenhagen</i>.Copenhagen: PISA. 6. Polya, G. (1957). <i>How to solve it</i>. New York: Doubleday & Company, Inc. 7. Cockcroft, W.H. (Ed.) (1982). <i>Mathematics Counts. Report of the Committee of Inquiry into the Teaching of Mathematics in Schools</i>, London: Her Majesty'sStationery Office Katagiri, S., (2006). <i>Mathematical Thinking and How to Teach it. Paper presented at the APEC-Tsukuba International Conference onInnovative Teaching of Mathematics through Lesson Study</i>. Sapporo, Japan. 8. Freudenthal, H. (1991). <i>Revisiting Mathematics Education. China Lectures</i>. Dordrecht: Kluwer Academic Publishers. 9. Gravemeijer, K.P.E. (1994). <i>Developing Realistic Mathematics Education</i>. Utrecht: CD10. soda, M. (2006). <i>First Announcement : APEC-Tsukuba International Conference on Innovative Teaching Mathematics Through Lesson Study (II) –Focussing on Mathematical Thinking- December 2-7, 2006, Tokyo & Sapporo, Japan</i> 11. Lange, J. de (2006). <i>Mathematical Literacy for Living From OECD-PISA Perspective</i>, Tokyo: <i>Symposium on International Cooperation</i> 12. Freudenthal, H. (1991). <i>Revisiting Mathematics Education. China Lectures</i>. Dordrecht: Kluwer Academic Publishers. 13. Gravemeijer, K.P.E. (1994). <i>Developing Realistic Mathematics Education</i>. Utrecht: CD-β 14. Isoda, M. (2006). <i>First Announcement : APEC-Tsukuba International Conference onInnovative Teaching Mathematics Through Lesson Study (II) –Focussing on Mathematical Thinking- December 2-7, 2006, Tokyo & Sapporo, Japan</i> 15. Lange, J. de (2006). <i>Mathematical Literacy for Living From OECD-PISA Perspective</i>, Tokyo: <i>Symposium on International Cooperation</i> 16. Freudenthal, H. (1991). <i>Revisiting Mathematics Education. China Lectures</i>. Dordrecht: Kluwer Academic Publishers. 17. <i>Ethnomathematics Journal</i>. https://journal.uny.ac.id/index.php/ethnomath 18. Ubiratan D'Ambrosio and <i>Mathematics Education</i>. 2023. https://link.springer.com/book/10.1007/978-3-031-31293-9 19. D'Ambrosio, U., 1985, <i>Ethnomathematics and its Place in the History and Pedagogy of Mathematics</i>, FIM Publishing Association, Montreal, Quebec Canada.
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	20. Machaba, F., Dhlamini, J. (2021). <i>Ethnomathematics as a Fundamental Teaching Approach</i>. In: Luneta, K. (eds) <i>Mathematics Teaching and Professional Learning in sub-Sahara Africa. Research in Mathematics Education</i>. Springer, Cham. https://doi.org/10.1007/978-3-030-82723-6_5 21. <i>Mathematical Thinking</i> Marsigit, (2023). <i>Melalui Cognitive Load Theory Pada Pembelajaran Geometri Bidang Berbasis Etnomatematika: Studi Hermeneutika</i>
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