MINISTRY OF HIGHER EDUCATION, SCIENCE, AND TECHNOLOGY
UNIVERSITAS NEGERI SURABAYA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
UNDERGRADUATE PROGRAM OF MATHEMATICS EDUCATION
Ketintang Campus, Jalan Ketintang, C8 C9 Building, Surabaya 60231
Phone: +62 895335466373, email: s1-pmat@unesa.ac.id
Website: https://pendidikan-matematika.fmipa.unesa.ac.id/

Module Name:	Realistic Mathematics Education
Module Level:	Sarjana (S-1) / Undergraduate
Abbreviation, if applicable:	8420202004
Sub-heading, if applicable:	-
Course included in the module, if applicable:	-
Semester/term:	2 / First year
Module Coordinator(s):	Prof. Rooselyna Ekawati, Ph.D
Lecturer(s):	Dr. Rini Setianingsih, M.Kes. Prof. Rooselyna Ekawati, Ph.D. Dr. Lestariningsih, S.Pd., M.Pd. Evangelista Lus Windyana Palupi, S.Pd., M.Sc. Dr. Yurizka Melia Sari, M.Pd. Dr. Mukhtamilatus Sa'diyah, M.Pd. Liza Puspita Yanti, S.Pd., MAE.
Language:	Indonesia
Classification within the curriculum:	Compulsory course~~/elective studies~~
Teaching format/class hours per week during the semester	Teaching format: lectures, tutorial assignment, and individual Study/2 x 170 minutes = 340 minutes = 5.7 hours lectures
Workload:	16 weeks per semester consisting of: • 1 hour lectures (1 x 50 minutes) per week, • 1 hours assignments (1 x 60 minutes) per week, ➢ 1 hours individual study (1 x 60 minutes) per week, Total workload : 16 x 2 x 170 minutes = 5,440 minutes = 90.7 hours= 3.2 ECTS*
Credit Point:	2
Requirements:	N/A

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Learning Goals :	**PLO-3**: Develop logical, critical, systematic, and creative thinking in performing specific work within their field of expertise and in accordance with the relevant field's work competency standards. **PLO-7**: Master pedagogical knowledge in teaching and evaluation in accordance with transformative curriculum developments and technological developments oriented towards realistic mathematics education and edupreneur-leadership. **PLO-8**: Demonstrate skills in designing, implementing, and evaluating adaptive and innovative technology-based, realistic mathematics learning. **PLO-10**: Make data-based decisions in completing student assignments and evaluating work done. **PLO-11**: Communicate research ideas and results rationally, effectively, and innovatively.
Content:	Explain the principles and characteristics of Realistic Mathematics Education (RME) as an instructional approach, including the types of contexts used and their applications in the teaching–learning process. Describe the development of a hypothetical learning trajectory (HLT) within the framework of realistic mathematics teaching. Design hypothetical learning trajectories and evaluate mathematics learning in elementary and secondary schools using the principles of Realistic Mathematics Education, supported by ICT-based presentations. Communicate ideas and research findings related to Realistic Mathematics Education effectively, both orally and in written form, based on scholarly sources. Identify appropriate context types derived from real-life phenomena relevant to number, algebra, measurement and geometry, probability and statistics, calculus, and combinatorics, and apply them to mathematics teaching in elementary and secondary education. Critically evaluate mathematics lessons developed within the RME framework based on its underlying principles and characteristics.

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Study/exam achievements

Students are considered competent and pass if the final score calculated from the score of midterm exam, assignments, participation, and final exam is at least 55 or C.

- Final score is calculated as follows:

Week	Course Learning Outcomes (CLO)	Programme Learning Outcomes (PLO)	Evaluation (%)
1	CLO-1	PLO-3	5
2	CLO-6	PLO-3	5
3	CLO-6	PLO-7	5
4	CLO-6	PLO-7	10
5	CLO-6	PLO-7	5
6	CLO-1	PLO-10	5
7	CLO-1	PLO-10	5
8	CLO-1	PLO-10	10
9	CLO-1	PLO-10	5
10	CLO-3	PLO-8	10
11	CLO-3	PLO-8	5
12	CLO-3	PLO-8	5
13	CLO-3	PLO-8	5
14	CLO-6	PLO-11	5
15	CLO-4	PLO-11	5
16	CLO-4	PLO-11	10

- Final index is defined as follow:

Index	Converted Score	Score Range
A	4.00	$85 \leq A \leq 100$
A-	3.75	$80 \leq A- < 85$
B+	3.50	$75 \leq B+ < 80$
B	3.00	$70 \leq B < 75$
B-	2.75	$65 \leq B- < 70$
C+	2.50	$60 \leq C+ < 65$
C	2.00	$55 \leq C < 60$
D	1.00	$40 \leq D < 55$
E	0.00	$0 \leq E < 40$

Forms of Media	Slides and LCD projectors, whiteboard
Literature	1. Hadi,S. (2017).Pendidikan Matematika Realistik. PT Raja Grafindo Persada. 2. Holt, Rinehart, Winston.2006. Mathematics in Context. Chicago: Encyclopædia Britannica,Inc. 3. Johnson, Elanie B. 2002. Contextual Teaching and Learning. California: Corwin Press,Inc. 4. Vanden Heuvel, M.& Wijers,M.2005. Mathematics Standards and Curricula in the Netherlands.ZDMvol37(4) 5. Hadi,S.2016. Realistic Mathematics Education: Theory, Development and Implementation. 6. Vanden Heuvel, M.1996. Assessmentand Realistic Mathematics Education.Technipress Culemborg,Utrecht 7. Teaching books developed by the PMRI (Indonesian Realistic Mathematics Education)t eam 8. Almuna Salgado, F. (2016). Developing a Theoretical Framework for Classifying Levels of Context Use for Mathematical Problems. Mathematics Education Research Group of Australasia. 9. Clements,D.H.,&Sarama,J.(2004). Learning trajectories in mathematics education. Mathematical thinking and learning,6(2),81-89.
Note	based on the regulation of the minister of education and culture of Indonesia number 3 of 2020 concerning national higher education standards, it is state 1 CU equals to 170 minutes per week. Therefore, in one semester (16 weeks, including midterm a final exam) 1 CU = 170 X 16 = 2.720 minutes or 45.3 hours. Therefore, workhours in 144 CU x 45.3 hours = 6.523,2 hours. Unesa decided that 1 ECTS with 144 CU, 6.523,2/229 ECTS = 28.48 hours, so that 1 CU = 1.59 ECTS