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:	Problem Solving Pemecahan Masalah
Module Level:	Sarjana (S-1) / Undergraduate
Abbreviation, if applicable:	8420202148
Sub-heading, if applicable:	-
Course included in the module, if applicable:	-
Semester/term:	4th / Second year
Module Coordinator(s):	Prof. Dr. Tatag Yuli Eko Siswono, M.Pd.
Lecturer(s):	Prof. Dr. Tatag Yuli Eko Siswono, S.Pd., M.Pd. Prof. Rooselyna Ekawati, Ph.D. Dr. Abdul Haris Rosyidi, S.Pd., M.Pd. Dr. Ali Shodikin, S.Pd., M.Pd. Nurus Saadah, S.Pd., M.Pd. Novita Vindri Harini, M.Pd.
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 = 90,67 hours = 3.1 ECTS*
Credit Point:	2
Requirements:	N/A

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Learning Goals:	**PLO-6**: Master the principles of mathematical knowledge to support mathematical thinking skills in solving mathematical problems. **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-10**: Make data-based decisions in completing student assignments and evaluating work done.
Content:	Studying the definition of problems, types of problems, problem-solving strategies, and stages of problem solving and their application through IT-assisted task-based active learning.
Study/exam achievements	• Students are considered competent and pass if the final score 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-6	5
2	CLO-1	PLO-6	5
3	CLO-1	PLO-6	5
4	CLO-1	PLO-6	5
5	CLO-1	PLO-6	5
6	CLO-2	PLO-7	5
7	CLO-2	PLO-7	5
8	CLO-2	PLO-7	10
9	CLO-2	PLO-7	5
10	CLO-3	PLO-10	5
11	CLO-3	PLO-10	5
12	CLO-3	PLO-10	5
13	CLO-3	PLO-10	5
14	CLO-4	PLO-10	5
15	CLO-4	PLO-10	5
16	CLO-4	PLO-10	20

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- Final index is defined as follow:

<table>
<tr><th>Index</th><th>Converted Score</th><th>Score Range</th></tr>
<tr><td>A</td><td>4.00</td><td>$85 \leq A \leq 100$</td></tr>
<tr><td>A-</td><td>3.75</td><td>$80 \leq A- < 85$</td></tr>
<tr><td>B+</td><td>3.50</td><td>$75 \leq B+ < 80$</td></tr>
<tr><td>B</td><td>3.00</td><td>$70 \leq B < 75$</td></tr>
<tr><td>B-</td><td>2.75</td><td>$65 \leq B- < 70$</td></tr>
<tr><td>C+</td><td>2.50</td><td>$60 \leq C+ < 65$</td></tr>
<tr><td>C</td><td>2.00</td><td>$55 \leq C < 60$</td></tr>
<tr><td>D</td><td>1.00</td><td>$40 \leq D < 55$</td></tr>
<tr><td>E</td><td>0.00</td><td>$0 \leq E < 40$</td></tr>
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<tr><td>Forms of Media</td><td>Slides and LCD projectors, whiteboard</td></tr>
<tr><td>Literature</td><td>

1. Polya, G. (2004). How to solve it: A new aspect of mathematical method (Vol. 85). Princeton university press.
2. Ekawati, R et.al (2024). Belajar dan Mengajar Pemecahan Masalah Matematika. Haura Utama
3. Siswono, Tatag Y.E.S, 2018. Pembelajaran Matematika Berbasis Pengajuan dan Pemecahan Masalah Untuk Meningkatkan Kemampuan Berpikir Kreatif. Bandung: Rosda Karya
4. Krulik, S. Rudnick, J.A (1989). Problem Solving: Hand Book for Senior High School Teachers, Toronto: Allyn and Bacon

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<tr><td>Note</td><td>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</td></tr>
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