Master Program of Mathematics Education   **Module Handbook**

Module Name:	Mathematics Problem Solving
Module Level:	Master (S-2)
Abbreviation, if applicable:	
Sub-heading, if applicable:	-
Course included in the module, if applicable:	-
Semester/term:	3/Second year
Module Coordinator(s):	Prof. Dr. Manuharawati, M. Si.
Lecturer(s):	1. Prof. Dr. Manuharawati, M. Si. 2. Dr. Raden Sulaiman, M. Si.
Language:	Indonesian
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. 2×240 minutes = 480 minutes = 8 hours lectures
Workload:	15 weeks per semester consisting of: • 1 hour lecture (1×50 minutes) per week, • 2 hours assignments (2×45 minutes) per week, • 2 hours individual study (2×50 minutes) per week, Total workload: $14 \times 2 \times 240$ minutes = 6,720 minutes $\approx$ 4.48 ECTS*
Credit Point:	2
Requirements:	N/A
Learning Goals:	**Knowledge (KNO-1)** CLO-1: able to explore various strategies for solving mathematics problems. **Skill (SKI-1)** CLO-2: able to apply different methods for mathematics problems. **Competency (COM-2)** CLO-3: able to work independently on and share ideas of solutions to

	mathematics problems, both written and orally. **Social (SOC-1)** CLO-4: able to collaborate and be responsible professionally and ethically in completing tasks
Content:	Problem-solving problems related to mathematical logic, discrete mathematics, algebra, analysis, geometry, probability theory, and statistics, which support learning mathematics in secondary education and for further studies.
Study/exam achievements	• Students are considered competent and pass if the final score calculated from the scores of midterm exam, assignments, participation, and final exam is at least 55 or C. • Final score is calculated as follows: 20% midterm exam + 30% assignments + 20% participation + 30% final exam • Final index is defined as follows: |Index|Converted Score|Score Range
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A	4.00	$85 \le A \le 100$
A-	3.75	$80 \le A\text{-} < 85$
B+	3.50	$75 \le B\text{+} < 80$
B	3.00	$70 \le B < 75$
B-	2.75	$65 \le B\text{-} < 70$
C+	2.50	$60 \le C\text{+} < 65$
C	2.00	$55 \le C < 60$
D	1.00	$40 \le D < 55$
E	0.00	$0 \le E < 40$	
Media employed	Slides and LCD projectors, white board
Reading list	[1] Polya, G. (2004). *How to solve it: A new aspect of mathematical method* (Vol. 85). Princeton University Press. [2] Djukic, D., Jankovic, V., Matic, I., & Petrovic, N. (2011). *The IMO compendium: a collection of problems suggested for the international mathematical olympiads:* 1959-2009. Springer. [3] Linker, D., & Sultan, A. (2016). *Mathematics Problem-Solving Challenges for Secondary School Students and Beyond.* World Scientific Publishing, Co., Pte., Ltd. [4] Grieser, D. (2018). *Exploring Mathematics: Problem-Solving and Proof.* Springer International Publishing AG. [5] Relevant web resources.

Note	*Total hours per 1 credit in 1 semester = {(1 credit × 240 minutes × 14 weeks)/60 minutes} = 56 hours. Each ECTS equals 25 hours, so 1 credit in 1 semester is equivalent to 2.24 ECTS.
Last amendment	January 2023