



MINISTRY OF EDUCATION, CULTURE, RESEARCH, AND TECHNOLOGY
UNIVERSITAS NEGERI JAKARTA
FACULTY OF MATHEMATICS AND NATURAL SCIENCE

Jl. Rawamangun Muka, RT 11/RW14, Rawamangun, Pulo Gadung
 East Jakarta City, Special Capital Region Of Jakarta 13220
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Elementary School Mathematics Teaching and Learning

Module Name	Course Module
Module Level	Bachelor Degree of Mathematics Education
Code, if applicable	
Sub-title, if applicable	
Courses, if applicable	Elementary School Mathematics Teaching and Learning
Semester(s) in which the module is taught	3 th semester
Person responsible for the module	Lecturer of Courses
Lecturer (s)	Dr. Lukman El Hakim, M.Pd.
Language	Bahasa Indonesia
Relation to Curriculum	This course is a compulsory course.
Type of teaching, contact hours	Teaching methods used in this course are: <ul style="list-style-type: none"> • Lecture (i.e., grup investigation, small grup discussion, dan video-based learning) • Structured assignments (i.e., essai and case study)
Workload	For this course, students required to meet a minimum of 135,99 hours in one semester, which consist of: 39,99 hours for lecture, 48 hours for structured assignments, 48 hours for independent study,
Credit Points	2 CP



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Requirements according to the examination regulations	Students must attend all lectures and submit all individual and group assignments scheduled before the final exam.
Recommended prerequisites	-
Program intended learning outcomes	<p>PLO 7: Able to analyze research findings to improve the process of learning mathematics.</p> <p>PLO 8 : Able to plan, implement, and evaluate learning in learning mathematics</p>
Course Learning Objectives	<p>CLO 1: Students are able to analyze the content and objectives of the elementary mathematics curriculum and its implementation at school;</p> <p>CLO 2: Students are able to identify the problems of learning elementary mathematics in schools in general;</p> <p>CLO 3: Students are able to use the latest and innovative mathematics learning theories in designing elementary mathematics learning to be able to answer these problems in accordance with the content and objectives of the curriculum.</p>
Content	<p>Students will learn about:</p> <ol style="list-style-type: none"> 1. The essential mathematics topics in the elementary mathematics curriculum; 2. The relationship and sequence of learning between elementary mathematics topics; 3. The objectives of the elementary mathematics curriculum; 4. The process of learning mathematics in elementary school;



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	<ol style="list-style-type: none"> 5. The content and presentation of mathematics in elementary mathematics textbooks; 6. The problems in the practice of learning elementary mathematics; 7. The relationships between theories of learning mathematics; 8. How to design a mathematical model in accordance with the subject matter of elementary mathematics; 9. How to design elementary mathematics problem solving problems; 10. How to make predictions about students' thinking processes; 11. How to analyze student work (oral or written answers) to obtain information on the level of student understanding of the subject being studied; 12. How to design innovative mathematics learning activities complete with learning tools; 13. How to carry out learning that has been designed in a teaching experiment; <p>How to reflect and evaluate the learning that has been implemented and make recommendations for improvement for further learning.</p>
<p>Forms of Assessment</p>	<p>Assessment of the learning process according to the following components:</p> <p>Presentation 20%, Project paper 60 %, Discussion and reflection paper 20%</p>
<p>Study and examination requirements and forms of examination</p>	<ul style="list-style-type: none"> - Attend face-to-face lectures at least 80% of the ideal number of meetings; - Every student must be active and participatory in lectures; - Be present at the class on time according to the set/agreed time; - Delay tolerance is 10 minutes; - There is a notification if you are not present in face-to-face lectures; - During lectures, cellphones are in the off or silent position; - Ask permission (by raising your hand) if you want to



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	<p>Speak, ask questions, answer questions, leave class or other needs;</p> <ul style="list-style-type: none"> - Respect each other and not make noise/disorder/damage in class; - No plagiarism and other forms of violation of norms are permitted; - Always keep the class clean; <p>It is forbidden to wear T-shirts/collarless clothes, flip-flops and the like during lectures.</p>
<p>Media employed</p>	<p>Laptop, Internet, LCD, Whiteboard, Zoom/GoogleTemui/Tim Microsoft, LMS.</p> <p style="text-align: center;">-</p>
<p>Reading list</p>	<ol style="list-style-type: none"> 1. Dossey, J. A., McCrone, S., Giordano, F. R., & Weir, M. D. (2002), <i>Mathematics Methods and Modeling for Today's Mathematics Classroom. A Contemporary Approach to Teaching Grade 7- 12</i>, Brooks/Cole, USA; 2. Fortuny, J. M., Gimenez, J., & Alsina, C. (1994), <i>Integrated Assessment on Mathematics 12-16</i>, <i>Educational Studies In Mathematics</i> 27, pp. 401 – 412; 3. Franke, M. F., & Kazemi, E., (2001), <i>Learning to Teach Mathematics: Focus On Student Thinking, Theory Into Practice</i> Vol. 40, No. 2; 4. Gravemeijer, K. (1999), <i>How Emergent Models May Foster the Constitution of Formal Mathematics</i>, <i>Mathematical Thinking and Learning</i> 1(2), pp. 155 – 177; 5. Johnson, M., & Johnson, T. (2000), <i>How to Solve Word Problems in Algebra Proven Techniques from an Expert</i>, McGraw Hill, USA; 6. Kulm, G. (1994), <i>Mathematics Assessment What Works in the Classroom</i>, Jossey-Bass Inc., USA; 7. Lian, N., <i>Teaching and Learning Geometry: Problems and Prospects</i>, <i>Masalah Pendidikan</i> 27, pp. 165 – 178 Program Studi S1 Pendidikan Matematika – 820; 8. Mousley, J., Sullivan, P., & Zevenbergen, R. (...). <i>Alternative Learning Trajectory</i>; 9. Morrow, L. J, & Kenney, M. J. (1998), <i>The Teaching and Learning of Algorithms in School Mathematics</i>, National Council of Teachers of Mathematics, USA; 10. Pappas, T. (2001), <i>The Joy of Mathematics Discovering Mathematics All Around You, Wide World Publishing/Tetra</i>, USA; 11. Sembiring, R. K., (2008), <i>Apa dan Mengapa PMRI</i>, <i>Majalah PMRI</i> Vol. VI No. 4;



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	<ol style="list-style-type: none">12. Simon, M. A. (1995), <i>Reconstructing Mathematics Pedagogy from a Constructivist Perspective</i>, <i>Journal for Research in Mathematics Education</i> Vol. 26, No. 2, pp. 114 – 145;13. Stacey, K. (...), <i>The Transition from Arithmetic Thinking to Algebraic Thinking</i>;14. Uzel, D. (2006), <i>Attitudes of 7th Class Students Toward Mathematics in Realistic Mathematics Education</i>, <i>International Mathematical Forum</i>, 1, No. 39, pp 1951 – 1959;15. Van De Walle, J. A., & Folk, S. (2005), <i>Elementary and Middle School Mathematics Teaching Developmentally</i>, Pearson Education Canada, Toronto;16. Van den Heuvel-Panhuizen, M. (1996), <i>Assessment and Realistic Mathematics Education</i>, CD- Press, Center for Science and Mathematics Education, Utrecht;17. Webb, N. L., & Coford, A. F. (1993), <i>Assessment in the Mathematics Classroom</i>, National Council of Teachers of Mathematics, USA;18. Weber, K., Maher, C., & Powell, A. (2008), <i>Learning Opportunities from Group Discussion: Warrant Become the Objects of Debate</i>, <i>Educ Stud Math</i> 68, pp. 247 – 261; <p>Yee, L. P. (2006), <i>Teaching Secondary School Mathematics A Resource Book</i>, McGraw Hill, Singapore.</p>
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