



**UNIVERSITAS NEGERI PADANG**  
 FACULTY OF MATHEMATICS AND NATURAL SCIENCES  
 MATHEMATICS DEPARTMENT, MATHEMATICS EDUCATION STUDY PROGRAM  
 Main Campus Universitas Negeri Padang.  
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**Bachelor of Mathematics Education**

**MODULE HANDBOOK**

Module name:	Psychology of Mathematical Instructions
Module level, if applicable:	Bachelor
Code:	MAT1.61.3303
Sub-heading, if applicable:	-
Classes, if applicable:	Psychology of Mathematical Instructions
Semester:	3rd (third)
Module coordinator:	Dr. Armiami, M.Pd.
Lecturer(s):	Dr. Armiami, M.Pd., and Team
Language:	Bahasa Indonesia and English
Classification within the curriculum:	Study Program Compulsory Course
Teaching format / class hours per week during the semester:	<p>Teaching format:</p> <ul style="list-style-type: none"> <li>• Lectures (face to face activities): Project Based Learning with Presentations, Group and Class Discussion methods,</li> <li>• Structured assignment,</li> <li>• Independent activities</li> </ul> <p>2 x 170 minutes = 340 minutes = 5.67 hours lectures</p>
Workload:	<p>16 weeks per semester include Midterm and Final Exam which consist of:</p> <ul style="list-style-type: none"> <li>• 1.67 hours lectures (2 x 50 minutes) per week,</li> <li>• 2 hours structured assignment (2 x 60 minutes) per week,</li> <li>• 2 hours independent activities (2 x 60 minutes) per week</li> </ul> <p>16 x 170 x 2 = 5440 Minute = 90.67 hours = 3.02 ECTS</p>
Credit points:	2 SKS (3.02 ECTS)
Prerequisite's course(s):	-
Course outcomes:	<p>After taking this course the students have ability to:</p> <p>CO1 : Explain the notion of psychology, learning psychology, mathematics learning psychology, character education in mathematics learning; individual characteristics based on learning styles, gender, heredity, and environment; the nature of mathematics, the characteristics of mathematics, and the objectives of learning</p>

	<p>mathematics; the characteristics of constructivist-based learning, procedures for forming mathematical concepts and schema ideas in understanding mathematical concepts; the meaning of each noticing, anxiety, authoritarian, democratic, in mathematics learning; interpersonal and emotional factors, various types of imagery; the ability to relate to the school environment</p> <p>CO2 : Distinguish various learning theories based on cognitive psychology, behavior, and its application in mathematics; between intuitive and reflective intelligence, short term memory, long term memory, and metacognition</p> <p>CO 3 : Show the responsibility attitude in own works</p> <p>CO 4 : Maintain the responsibility attitude in team works</p>
Content:	<p>This course discusses:</p> <ol style="list-style-type: none"> <li>1. the definition of the psychology of learning mathematics</li> <li>2. the essence of mathematics</li> <li>3. character education</li> <li>4. individual characteristics</li> <li>5. the learning theory based on behavioral psychology and cognitive psychology, constructivism in mathematics learning</li> <li>6. the formation of concepts and schema ideas in mathematics</li> <li>7. intuitive and reflective intelligence</li> <li>8. symbols in mathematics</li> <li>9. various types of imagery (parable)</li> <li>10. interpersonal and emotional factors</li> <li>11. short term memory and long term memory</li> <li>12. noticing, anxiety, metacognition in mathematics learning</li> <li>13. democratic, authoritarian, thorough mathematics learning</li> <li>14. improving mathematics teacher skills related to the school environment</li> </ol>
Study/exam achievements:	<p>Total Score = (35% x Midterm Exam score) + (35% x Final Exam Score) + (20% x assignments/project) + (10% x Affective Assessment)</p> <p>The initial cut - off points for grades A, A-, B+, B, B-, C+, C, C-, and D should not be less than 85, 80, 75, 70, 65, 60, 55, 50, and 40 out of 100 respectively.</p> <p><b>Explanation:</b></p> <ol style="list-style-type: none"> <li><b>1. Midterm Exam</b> <ul style="list-style-type: none"> <li>✓ Midterm Exam will be conducted in the 8<sup>th</sup> meeting</li> <li>✓ Midterm Exam is in the form of a written test (essay) and will be conducted in the classroom</li> <li>✓ The time allocation is 100 minutes according to the module schedule</li> </ul> </li> <li><b>2. Final Exam</b> <ul style="list-style-type: none"> <li>✓ Final Exam will be conducted in the 16<sup>th</sup> meeting.</li> </ul> </li> </ol>

	<ul style="list-style-type: none"> <li>✓ Final Exam is in the form of a written test (essay) and will be conducted in the classroom.</li> <li>✓ The time allocation is 100 minutes which follows the Final Exam schedule provided by the Department.</li> </ul> <p><b>3. Project/Assignment</b></p> <ul style="list-style-type: none"> <li>✓ Projects are given as group task and it is in form paper and presentation and it is assessed by rubric assessment</li> <li>✓ Project is about making essay/report of the content that students read from any references.</li> <li>✓ The project/assignment is carried out to see the achievements of the PLO and CO which are in accordance with the characteristics of Psychology of mathematical instruction module.</li> </ul> <p><b>4. Affective Assessment</b></p> <ul style="list-style-type: none"> <li>✓ Affective assessment is held in every meeting by observing students' attitude in the classroom.</li> <li>✓ The assesment is based on the observation sheet by using the given scoring rubrics.</li> </ul>
Forms of media:	Board, LCD Projector
Literature	<ol style="list-style-type: none"> <li>1. Amir, Z, &amp; Risnawati. (2016). Psikologi Pembelajaran Matematika. Yogyakarta: Aswaja Pressindo.</li> <li>2. Rivera, F. (2013). Teaching and Learning Patterns in School Mathematics: Psychological and Pedagogical Considerations. Germany: Springer Netherlands.</li> <li>3. Resnick, L. B., Ford, W. W. (2012). Psychology of Mathematics for Instruction. United States: Taylor &amp; Francis.</li> <li>4. Dewanti Sintha Sih. (2010). Diktat Psikologi Belajar Matematika, Yogyakarta. Program Studi Pendidikan Matematika Fakultas Sains dan Teknologi, UIN Sunan Kali Jaga</li> <li>5. Brosnan, Patricia., Diana B. Erchick., &amp; Lucia Fleveres (eds). (2010). Proceedings of the Thirty Second Annual Meeting of the North American Chapter of the International Group for The Psychology of Mathematics Education. Columbus, OH: Ohio State University.</li> </ol>

### PLO and CO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
CO1					✓							
CO2					✓							
CO3										✓		
CO4										✓		