

# MODULE HANDBOOK

<b>Module Name:</b>	Foundations of Mathematics
<b>Module Level:</b>	Sarjana (S-1) / Bachelor
<b>Abbreviation, if applicable:</b>	8420203043
<b>Sub-heading, if applicable:</b>	-
<b>Course included in the module, if applicable:</b>	-
<b>Semester/term:</b>	1/ First year
<b>Module Coordinator(s):</b>	Budi Priyo Prawoto, M.Si
<b>Lecturer(s):</b>	Dr. Masriyah, M.Pd. Budi Priyo Prawoto, M.Si. Nina Rinda Prihartiwi, M.Pd.
<b>Language:</b>	Indonesia
<b>Classification within the curriculum:</b>	Compulsory course/ <del>elective studies</del>
<b>Teaching format/class hours per week during the semester</b>	Teaching format: lectures, tutorial assignment, and individual study. 3 x 170 minutes = 510 minutes = 8.5 hours lectures
<b>Workload:</b>	15 weeks per semester consisting of: <ul style="list-style-type: none"> <li>➤ 2.5 hours lectures (3 x 50 minutes) per week,</li> <li>➤ 3 hours tutorial assignments (3 x 60 minutes) per week,</li> <li>➤ 3 hours individual study (3 x 60 minutes) per week,</li> </ul> Total workload : 14x3x170 minutes = 7,140 minutes = 4.76 ECTS*
<b>Credit Point:</b>	3
<b>Requirements:</b>	-
<b>Learning Goals:</b>	<p><b>Knowledge</b> CLO-1: Explain the basic notions of mathematics as a deductive-axiomatic structure, structured thinking, reasoning, and rational-deductive logic, set, relationship, function, logic, quantor, conclusion, and validity of proof or conclusion.</p> <p><b>Skill</b> CLO-2: Mathematically state a statement problem in the form of a mathematical relation, function, or statement and solve it</p> <p><b>Competency</b> CLO-3: Prove mathematical statements using several suitable methods</p>

<b>Content:</b>	System and deductive-axiomatic structure, logical operation, quantifier, making a conclusion, set theory, relation, function, and POSET.																														
<b>Study/exam achievements</b>	<ul style="list-style-type: none"> <li>➤ 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.</li> <li>➤ Final score is calculated as follows:</li> <li>➤ 20% midterm exam + 30% assignments + 20% participation + 30% final exam</li> <li>➤ Final index is defined as follow:</li> </ul> <table border="1" data-bbox="662 695 1307 1178" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Index</th> <th>Converted Score</th> <th>Score Range</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>4.00</td> <td><math>85 \leq A \leq 100</math></td> </tr> <tr> <td>A-</td> <td>3.75</td> <td><math>80 \leq A- &lt; 85</math></td> </tr> <tr> <td>B+</td> <td>3.50</td> <td><math>75 \leq B+ &lt; 80</math></td> </tr> <tr> <td>B</td> <td>3.00</td> <td><math>70 \leq B &lt; 75</math></td> </tr> <tr> <td>B-</td> <td>2.75</td> <td><math>65 \leq B- &lt; 70</math></td> </tr> <tr> <td>C+</td> <td>2.50</td> <td><math>60 \leq C+ &lt; 65</math></td> </tr> <tr> <td>C</td> <td>2.00</td> <td><math>55 \leq C &lt; 60</math></td> </tr> <tr> <td>D</td> <td>1.00</td> <td><math>40 \leq D &lt; 55</math></td> </tr> <tr> <td>E</td> <td>0.00</td> <td><math>0 \leq E &lt; 40</math></td> </tr> </tbody> </table>	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	$0 \leq E < 40$
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<b>Forms of Media</b>	Video, Slides and LCD projectors, whiteboard																														
<b>Literature</b>	<p>[1] Stoll, R. R. 1979. <i>Set Theory and Logic</i>. New York: Dover Publication, Inc.</p> <p>[2] Masriyah, 2017. <i>Dasar-Dasar Matematika</i>, Surabaya: Unesa Press.</p> <p>[3] Yunus, M. 2007. <i>Logika: Suatu Pengantar</i>. Yogyakarta: Graha Ilmu.</p> <p>[4] Kunnen, K. 2009. <i>The Foundation of Mathematics Vol 19</i>. London: College Publications</p>																														
<b>Note</b>	<p>*Total hours per 1 credit in 1 semester = <math>\{(1 \text{ credit} \times 170 \text{ minutes} \times 14 \text{ weeks}) / 60 \text{ minutes}\} = 39,67 \text{ hours}</math>.</p> <p>Each ECTS equals with 25 hours therefore 1 credit in 1 semester equals 1,59 ECTS.</p>																														