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### Module Handbook

Module Name :	<i>Teori Koding</i> Coding Theory
Module level :	Bachelor degree/Undergraduate Program
Course Code :	4420103141
Abbreviation, if applicable:	-
Courses included in the module, if applicable:	Not Applicable
Semester/Term	8 <sup>th</sup> / fourth year
Module coordinator(s)	Dr. Agung Lukito, M.S.
Lecturer(s):	Dr. Agung Lukito, M.S.
Language:	Bahasa Indonesia (Indonesian Language)
Classification within the curriculum:	<del>Compulsory</del> / Elective
Teaching format/class hours per week during the semester:	3 contact hours of lectures ( <i>sks</i> or credit unit*)
Workload :	3 x 50 minutes lectures, 3 x 60 minutes structured activity, and 3 x 60 minutes individual activity per week, 14 weeks per semester 119 total hours per semester ~ 4.77 ECTS**
Credit Unit:	3 credit unit (4.77 ECTS)
Requirements:	Elementary Linear Algebra



Learning goals/competencies:	<p><b>Knowledge (KNO-2)</b></p> <p>CLO-1: Demonstrate basic concepts of coding for problem solving through a mathematical approach.</p> <p><b>Skill (SKI-4)</b></p> <p>CLO-2: Implement simple coding techniques in computer programs.</p> <p><b>Competences (COM-1)</b></p> <p>CLO-3: Prove mathematical properties/statements related to coding by various methods.</p>
Content	<p>This course discusses the concepts and techniques of encoding messages over a channel that is not immune to interference: covers the concepts of encoding and coding, some code constructions and their coding techniques. Lecture activities are carried out in a student center with discussions, observations, project assignments, and presentations.</p>

Attribute Soft skill:	Active communication; Discipline; Collaboration; Responsibility; and Argumentation in class.											
Study/exam achievements:	<p>The final grade (<i>NA</i>) is calculated based on the following ratio:</p> <table border="1" data-bbox="539 1413 1347 1736"> <thead> <tr> <th data-bbox="539 1413 943 1480">Assessment Components</th> <th data-bbox="943 1413 1347 1480">Percentage of contribution</th> </tr> </thead> <tbody> <tr> <td data-bbox="539 1480 943 1547">Participation</td> <td data-bbox="943 1480 1347 1547">20%</td> </tr> <tr> <td data-bbox="539 1547 943 1615">Assignment</td> <td data-bbox="943 1547 1347 1615">30%</td> </tr> <tr> <td data-bbox="539 1615 943 1682">Mid-semester test</td> <td data-bbox="943 1615 1347 1682">20%</td> </tr> <tr> <td data-bbox="539 1682 943 1736">Final semester test</td> <td data-bbox="943 1682 1347 1736">30%</td> </tr> </tbody> </table>		Assessment Components	Percentage of contribution	Participation	20%	Assignment	30%	Mid-semester test	20%	Final semester test	30%
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	<p>Grade conversion of 0-100 scale into 0-4 scale is set as below:</p> <table border="1" data-bbox="549 349 1418 815"> <thead> <tr> <th>Letter</th> <th>Number</th> <th>Grade Interval</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>	Letter	Number	Grade Interval	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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Learning Methods :	Student-centered approach; project-based learning; lecturer and discussion; and presentations (structured activities)																														
Form of Media:	Power point slides; video; worksheets, and textbooks																														
Literature (primary references):	<ol style="list-style-type: none"> <li>1. Pless, V. 1989. <i>Introduction to The Theory of Error-Correcting Codes</i>. New York: John Wiley and Sons</li> </ol>																														
Notes:	<p>*1 credit unit or <i>sks</i> in learning process = three periods consist of: (a) scheduled instruction in a classroom or laboratory (50 minutes); (b) structured activity (60 minutes); and (c) individual activity (60 minutes) according to the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 44 Year 2015 jo. the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 50 Year 2018.</p>																														



**MINISTRY OF EDUCATION, CULTURE, RESEARCH, AND TECHNOLOGY**

**UNIVERSITAS NEGERI SURABAYA**

**FACULTY OF MATHEMATICS AND NATURAL SCIENCE**

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<p><b>**1 credit unit or <i>sks</i> = 1.59 ECTS according to Rector Decree Of Universitas Negeri Surabaya No. 598/UN38/HK/AK/2019</b></p>
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