



Module Handbook

Module Name :	<i>Matematika Diskrit</i> Discrete Mathematics
Module level :	Bachelor degree/Undergraduate Program
Course Code :	4426103074
Abbreviation, if applicable:	-
Courses included in the module, if applicable:	Not Applicable
Semester/Term	3 th / second year
Module coordinator(s)	Prof. Ketut Budayasa, PhD
Lecturer(s):	Prof. Ketut Budayasa, PhD Dr. Budi Rahadjeng
Language:	Bahasa Indonesia (Indonesian Language)
Classification within the curriculum:	Compulsory/ 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:	Differential Calculus



<p>Learning goals/competencies:</p>	<p>KNO-1: Demonstrating mathematical knowledge and mathematical insight. CLO-1 : Demonstrate the concepts of counting principles, permutations, combinations, generating functions, recursive relations, and inclusion-exclusion principles.</p> <p>SKI-1: Formulating and solving fundamental mathematical problems. CLO-2 : Able to formulate and solve simple principles of counting, permutations, and combinations problems.</p> <p>SKI-2: Applying the basic principles of mathematics to solve simple* mathematical problems CLO-3 : Able to apply the concept of generating function to solve the problem of recursive relations.</p> <p>COM-2: Generating ideas used for completing mathematical tasks and to communicate them either in writing or orally, in accordance with scientific principles. CLO-4: Able to generate ideas to solve problems combinatoric.</p> <p>SOC-2: Showing responsibility for work in the field of expertise independently, having a lifelong willingness to learn, and having the courage to make decisions. CLO-5: Be serious in completing each task</p>
<p>Content</p>	<p>This course discusses the basic rules in counting, permutations, combinations, generating functions, recursive relations, and principles inclusion-exclusion. Lecture activities are carried out in a student center with discussions, observations, project assignments, and presentations.</p>

<p>Attribute Soft skill:</p>	<p>Active communication; Discipline; Collaboration; Responsibility; and Argumentation in class.</p>											
<p>Study/exam achievements:</p>	<p>The final grade (<i>NA</i>) is calculated based on the following ratio:</p> <table border="1" data-bbox="539 1653 1347 1977"> <thead> <tr> <th>Assessment Components</th> <th>Percentage of contribution</th> </tr> </thead> <tbody> <tr> <td>Participation</td> <td>20%</td> </tr> <tr> <td>Assignment</td> <td>30%</td> </tr> <tr> <td>Mid-semester test</td> <td>20%</td> </tr> <tr> <td>Final semester test</td> <td>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"><thead><tr><th>Letter</th><th>Number</th><th>Grade Interval</th></tr></thead><tbody><tr><td>A</td><td>4,00</td><td>$85 \leq A \leq 100$</td></tr><tr><td>A-</td><td>3,75</td><td>$80 \leq A- < 85$</td></tr><tr><td>B+</td><td>3,50</td><td>$75 \leq B+ < 80$</td></tr><tr><td>B</td><td>3,00</td><td>$70 \leq B < 75$</td></tr><tr><td>B-</td><td>2,75</td><td>$65 \leq B- < 70$</td></tr><tr><td>C+</td><td>2,50</td><td>$60 \leq C+ < 65$</td></tr><tr><td>C</td><td>2,00</td><td>$55 \leq C < 60$</td></tr><tr><td>D</td><td>1,00</td><td>$40 \leq D < 55$</td></tr><tr><td>E</td><td>0,00</td><td>$0 \leq E < 40$</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">1. Budayasa, I. K. 2016. Matematika Diskret. Surabaya: Unesa University Press.2. Mattson, Jr. 1993. Discrete Mathematics with Applications. Singapore: John Wiley&Sons, Inc.3. Towsend M. 1987. Discrete Mathematics Combinatoric and Graph Theory. Canada: Benjamin/Cummings Publishing Company, Inc.4. K.H. Rosen. 2011. Discrete Mathematics with Applications, 7th edition. New York: Mc GrawHill.																														
Notes:	*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.																														



MINISTRY OF EDUCATION, CULTURE, RESEARCH, AND TECHNOLOGY

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