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### Module Handbook

Module Name :	<i>Statistika Multivariat</i> Multivariate Statistics
Module level :	Bachelor degree/Undergraduate Program
Course Code :	4420103155
Abbreviation, if applicable:	-
Courses included in the module, if applicable:	Not Applicable
Semester/Term	7 <sup>th</sup> / fourth year
Module coordinator(s)	A'yunin Sofro, Ph.D
Lecturer(s):	A'yunin Sofro, Ph.D
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 (4.7 ECTS)
Requirements:	Statistical Method



<p>Learning goals/competencies:</p>	<p><b>Knowledge</b></p> <p>CLO-1 : Identifying and explaining Multivariate distribution, principal component analysis, factor analysis, clustering, multivariate multiple regression and multivariate analysis variance.</p> <p><b>Skill</b></p> <p>CLO-2 :Implementing principal component analysis, factor analysis, clustering, multivariate multiple regression and multivariate analysis variance.procedures in computer programs</p> <p><b>Competences</b></p> <p>CLO-3 : Communicate the concept and application principal component analysis, factor analysis, clustering, multivariate multiple regression and multivariate analysis variance to in scientific writing</p> <p>CLO-4 : Solving principal component analysis, factor analysis, clustering, multivariate multiple regression and multivariate analysis variance problems using technology</p> <p><b>Attitude and Social</b></p> <p>CLO-5 : Showing responsibility for work in the field of expertise independently.</p>
<p>Content</p>	<p>This course discusses Multivariate distribution, principal component analysis, factor analysis, clustering, multivariate multiple regression and multivariate analysis variance. 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>
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Study/exam achievements:	The final grade ( <i>NA</i> ) is calculated based on the following ratio:		
	Assessment Components	Percentage of contribution	
	Participation	20%	
	Assignment	30%	
	Mid-semester test	20%	
	Final semester test	30%	
	Grade conversion of 0-100 scale into 0-4 scale is set as below:		
	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	$0 \leq E < 40$
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. Alvin C. Recher. 2002. <i>Methods of Multivariate Analysis</i>. Canada: John Wiley &amp; Sons.</li><li>2. Richard A. Johnson and Dean W. Wichern. 2002. <i>Applied Multivariate Statistical Analysis</i>. New Jersey: Printice Hall.</li><li>3. Joseph F. Hair dkk, 2010. <i>Multivariate Data Analysis A. Global Perspective</i>. New Jersey: Pearson Prentice Hall.</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> <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>