UNIVERSITAS NEGERI YOGYAKARTA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF MATHEMATICS EDUCATION
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Bachelor of Science in Mathematics **MODULE HANDBOOK**

Module name:	Linear Programming
Module level,if applicable:	Undergraduate
Code:	MAT6319
Sub-heading,if applicable:	-
Classes,if applicable:	-
Semester:	4th
Module coordinator:	Eminugroho Ratna Sari, M.Sc.
Lecturer(s):	1. Rosita K, M.Sc 2. Eminugroho, MSc.
Language:	Bahasa Indonesia
Classification within the curriculum:	Compulsory course
Teaching format / class hoursperweekduring the semester:	150 minutes lectures and 180 minutes structured activities per week.
Workload:	Total workload is 136 hours per semester which consists of 150 minutes lectures, 180 minutes structured activities, and 180 minutes self-study per week for 16 weeks.
Creditpoints:	3
Prerequisites course(s):	Linear Algebra (MAT6308)
course outcomes:	After taking this course the students have ability to: CO1. demonstrate collaborative attitude and independence to do individual or group assigntments CO2.Communicate ideas in solving mathematical problems in writing or verbally

<table>
<tr><td></td><td>CO3. solve linear programming problems using graph and simplex method, and solve special problems regarding linear programming
CO4. formulate a mathematical model regarding linear programming
CO5. Resolve problems using appropriate algorithms and use linear programming software</td></tr>
<tr><td>Content:</td><td>The course contains discussion on modeling real problems into the linear programming model. Furthermore, the definition of the convex set, the feasible set, the extreme point, the optimum solution in hyper plane will be discussed. Solving linear programming problems with graphical methods and primal simplex methods, simplex methods with common constraints, two-stage simplex method, duality, simplex method theory, sensitivity analysis, some special occurrences of linear programming problems, integer programming and transportation problem.</td></tr>
<tr><td>Study/exam achievements:</td><td>CO1: Attitude assessment is carried out at each meeting by observation and / or self-assessment techniques using the assumption that basically every student has a good attitude. The student is given a value of very good or not good attitudeif they show it significantlycompared to other students in general. The result of attitude assessment is not a component of the final grades, but as one of therequirements to pass the course. Students will pass from this course if at least have a good attitude.

The final mark will be weight as follow:

<table>
<tr><th>No</th><th>CO</th><th>Assessment Object</th><th>Assessment Technique</th><th>Weight</th></tr>
<tr><td>1</td><td>CO2, CO3,and CO4</td><td>a. Individual assessment
b. Group assessment (including</td><td>Presentation/ Written test</td><td>10%

20%</td></tr>
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			presentation) c. Quiz d. Mid exam e. Final exam		10% 25% 30%
	2	CO5	Ability using software	Observation	5%
				Total	100%
Formsof media:	Board, LCD Projector, Laptop/Computer				
Literature:	1. Susanto, B. *Program Linier*. UGM. Yogyakarta 2. Himmawati P.L. 2012. *Handout of Linear Programming* 3. Taha, Hamdi. *Operation Research* 4. Kolman, Bernard and Beck, R.E. 1995. *Elementary Linear Programming with Application.* Elsevier Science & Technology Books				

PLO and CO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10
CO1		✓								
CO2			✓							
CO3					✓					
CO4							✓			
CO5										✓