



UNIVERSITAS NEGERI YOGYAKARTA

FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF MATHEMATICS EDUCATION

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Bachelor of Education in Mathematics

MODULE HANDBOOK

Module name:	Linear Programming
Module level, if applicable:	Undergraduate
Code:	MAT6319
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	4 th
Module coordinator:	Eminugroho Ratna Sari, M.Sc.
Lecturer(s):	Rosita K, M.Sc; Eminugroho, MSc.
Language:	Bahasa Indonesia
Classification within the curriculum:	Compulsory course
Teaching format / class hours per week during 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.
Credit points:	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 assignments CO2. Communicate ideas in solving mathematical problems in writing or verbally 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																							
Content:	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.																							
Study / exam achievements:	<p>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 attitude if they show it significantly compared to other students in general. The result of attitude assessment is not a component of the final grades, but as one of the requirements to pass the course. Students will pass from this course if at least have a good attitude.</p> <p>The final mark will be weight as follow:</p> <table border="1"> <thead> <tr> <th>No</th> <th>CO</th> <th>Assessment Object</th> <th>Assessment Technique</th> <th>Weight</th> </tr> </thead> <tbody> <tr> <td rowspan="5">1</td> <td rowspan="5">CO2, CO3, CO4, and CO5</td> <td>a. Individual assessment</td> <td rowspan="5">Presentation/ Written test</td> <td>10%</td> </tr> <tr> <td>b. Group assessment (including presentation)</td> <td>20%</td> </tr> <tr> <td>c. Quiz</td> <td>10%</td> </tr> <tr> <td>d. Mid exam</td> <td>30%</td> </tr> <tr> <td>e. Final exam</td> <td>30%</td> </tr> <tr> <td colspan="4">Total</td> <td>100%</td> </tr> </tbody> </table>	No	CO	Assessment Object	Assessment Technique	Weight	1	CO2, CO3, CO4, and CO5	a. Individual assessment	Presentation/ Written test	10%	b. Group assessment (including presentation)	20%	c. Quiz	10%	d. Mid exam	30%	e. Final exam	30%	Total				100%
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		e. Final exam		30%																				
Total				100%																				
Forms of media:	Board, LCD Projector, Laptop/Computer																							
Literature:																								

PLO and CO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
CO1		✓										
CO2			✓									
CO3					✓							
CO4							✓					
CO5										✓		