



UNIVERSITAS NEGERI YOGYAKARTA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF MATHEMATICS EDUCATION

Jalan Colombo Nomor 1 Yogyakarta 55281
Telepon(0274)565411 Pesawat 217, (0274)565411(TU),fax (0274)548203
Laman :fmipa.uny.ac.id, E-mail :humas_fmipa@uny.ac.id

Bachelor of Science in Mathematics

MODULE HANDBOOK

Module name:	Operation Research
Module level,ifapplicable:	Undergraduate
Code:	MAT6329
Sub-heading,ifapplicable:	-
Classes,ifapplicable:	-
Semester:	5 th
Module coordinator:	Eminugroho Ratna Sari, M.Sc.
Lecturer(s):	Eminugroho Ratna Sari, M.Sc.
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 Programming (MAT6319)
course outcomse:	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. Explain the description of applied operations research,

	<p>including transshipment problem, assignments, shortest routes, traveling salesmen, minimal spanning tree, maximal flow, PERT / CPM, dynamic programming</p> <p>CO4. formulate a mathematical model regarding operation research problems</p> <p>CO5.Resolve problems using appropriate algorithms and using operating research software</p>																												
<p>Content:</p>	<p>The course contains discussion on modeling and completion techniques for transportation and transshipment problems, assignment, and traveling salesman problems. The basic algorithms for the shortest path network, PERT / CPM, minimal spanning trees, maximal flow and the solution of dynamic programming problems are also discussed in the course.</p>																												
<p>Study/exam achievements:</p>	<p>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 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" data-bbox="620 1459 1416 1873"> <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,and CO4</td> <td>a. Individual assessment</td> <td rowspan="5">Presentation/ Written</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>25%</td> </tr> <tr> <td>e. Final exam</td> <td>30%</td> </tr> <tr> <td>2</td> <td>CO5</td> <td>Ability using software</td> <td>Observation</td> <td>5%</td> </tr> <tr> <td colspan="4">Total</td> <td>100%</td> </tr> </tbody> </table>	No	CO	Assessment Object	Assessment Technique	Weight	1	CO2, CO3,and CO4	a. Individual assessment	Presentation/ Written	10%	b. Group assessment (including presentation)	20%	c. Quiz	10%	d. Mid exam	25%	e. Final exam	30%	2	CO5	Ability using software	Observation	5%	Total				100%
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