Module designation	*Linear Programming*
Semester(s) in which the module is taught	*3*
Person responsible for the module	*Eminugroho Ratna Sari, M.Sc.*
Language	*Bahasa Indonesia*
Relation to curriculum	*Compulsory course*
Teaching methods	*150 minutes lectures and 180 minutes structured activities per week.*
Workload (incl. contact hours, self-study hours)	*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*
Required and recommended prerequisites for joining the module	*MAT6306 Elementary Linear Algebra*
Module objectives/intended learning 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* *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*

<table>
<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>Examination forms</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.</td></tr>
<tr><td>Study and examination requirements</td><td>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.

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>CO 1</td><td>a. Presentation
b. Discussion</td><td>Observation</td><td>5%
10%</td></tr>
<tr><td>2</td><td>CO 2, CO 3, CO 4</td><td>a. Individual assignment
b. Group assignment
c. Quiz
d. Midterm
e. Final test</td><td>Written</td><td>10%
10%
20%
20%
25%</td></tr>
<tr><td colspan="4">Total</td><td>100%</td></tr>
</table></td></tr>
<tr><td>Reading list</td><td>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</td></tr>
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