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MODULE HANDBOOK
Master in Mathematics

Module name:	**Optimal Resource Allocation** **(*Optimalisasi Pengalokasian Sumberdaya*)**
Module level, if applicable:	**Master Program**
Code, if applicable:	
Semester(s) in which the module is taught:	**I (first year)**
Person responsible for the module:	**Chair of Applied Mathematics Research Group** Dr. Irwan Endrayanto A., S.Si., M.Sc
Lecturer(s):	Dr. Irwan Endrayanto A., S.Si., M.Sc
Language:	Bahasa Indonesia
Relation to curriculum:	Master Degree in Mathematics, Elective, 1st semester
Credit points:	3
Type of teaching, contact hours:	**3x50 minutes** lectures, **3x50 minutes** structured activities.
Workload:	• **3x50 minutes lectures,** • **3x50 minutes structured activities,** • **3x50 minutes individual study,** • **In 16 weeks per semester (including mid-term and final examinations).** • **Total: 144x50 minutes per semester.**
Requirements according to the examination regulations:	75% attanding the class
Recommended prerequisites:	Analysis, Optimization, Stochastics Processes
Module objectives/intended learning outcomes:	After completing the course, the student will have : CO1. ability to develop original mathematics model based on comprehensive literature studies independently. CO2. ability to analyze and solve the model analytically or numerically CO3. ability to interprete the mathematical model and to communicate the results to intended users/audiences, both in oral and written languange.
Content:	• Concept of mathematical modelling in healthcare • Knapsack Problems in Healthcare • Travelling Salesman Problems in Healthcare: Reonteering Problems • Vehicle Routing Problems in Healthcare: Pickup and Delivery Problems
Study and examination requirements and forms of examination:	The final mark will be weighted as follows: No — Assessment methods (components, activities) — Weight (percentage) 1 — Final Examination — 30% 2 — Mid-Term Examination — 30% 3 — Class Activities: Presentation, etc — 15% 4 — Quiz, Homework, etc — 15% 5 — Peer Assesment — 10%

	Final grade will be determined as follows: Grade Criteria A 90 ≤ final mark ≤ 100 A - 85 ≤ final mark < 90 A/B 80 ≤ final mark < 85 B + 75 ≤ final mark < 80 B 70 ≤ final mark < 75 B - 65 ≤ final mark < 70 C 50 ≤ final mark < 64 D 30 ≤ final mark < 49 E 0 ≤ final mark < 30
Media employed:	Board, LCD Projector, Laptop/Computer
Reading List:	. S. Boyd, and L. Vandenberghe, 2004, "*Convex Optimization*", Cabridge University Press, United Kingdom. . C.H. Papadimitriou, and K. Steiglitz, 1998, "*Combinatorial Optimization"* Dover Publications, United States. . S. M. Ross, 1996, "*Stochastics Processes*", Second Edition, John Wiley and Sons, Inc., United States. .

Mapping of The COs and PLOs

	PLO – 1 S2 Mat	**PLO – 2 S2 Mat**	**PLO – 3 S2 Mat**	**PLO – 4 S2 Mat**	**PLO – 5 S2 Mat**	**PLO –6 S2 Mat**
CO 1			V			
CO 2			V		V	
CO 3					V	