

SYLLABUS & COURSE OUTLINES

ODD SEMESTER 2026/2027



Master of Agribusiness Management
Department of Agricultural Socio-Economics
Agribusiness Operations Research
(PNMM265119/3 credits)

Course Team:

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GADJAH MADA UNIVERSITY
FACULTY OF AGRICULTURE
2026

	Gadjah Mada University Faculty of Agriculture Master of Agribusiness Management Study Program Odd Semester 2026/2027					Document Code:	
							
SYLLABUS & COURSE OUTLINES							
Course Code	Course Name	Credit Weight (sks)		Semester	Course Status	Prerequisite Course	
PNMM265119	Agribusiness Operations Research	T: 3	P: -	Odd	Elective	Economic Mathematics (Matriculation)	
Brief Course Description	Operations research is a problem-solving technique related to making the best decisions when faced with limited resource constraints. It covers linear programming (LP) graphical solutions, linear programming simplex solutions, transportation, assignment, transshipment, integer programming, quadratic programming, PERT (project evaluation and review technique) and CPM (critical path method), optimal inventory, queuing theory, and DEA. After completing this course, students are able to formulate mathematical models to make the best decisions when faced with limited resource constraints, particularly in the field of Agribusiness Management, interpret the results of the analysis, and prepare working instructions.						
Graduate Learning Outcomes (CPL) Assigned to the Course	CPL1	P1. Able to explain and relate management theory and application comprehensively and inter/multidisciplinarily in the field of agribusiness.					
	CPL2	KU 2. Able to carry out studies through an inter/multi-disciplinary approach and make decisions to solve problems in the field of agribusiness management..					
	Indonesian National Qualification Framework (KKNI) Level 8						
Course Learning Outcomes (CPMK)	After completing this course, students are expected to be able to:						
	CPMK1	Students are able to explain the theory and formulation of Operations Research (OR) models for making the best decisions when faced with limited resource constraints					
	CPMK2	Students are able to use operations research software to analyze various optimization problems in the field of agribusiness management and interpret the results.					
	CPMK3	Students are able to translate the interpretation results into operational instructions.					
Relationship between CPMK and Learning Materials, Learning Methods, and Time Allocation		Learning Materials			Learning Methods		Time Allocation
		Introduction, Scope of Operations Research (OR)			Lecture		3x50 minutes
		LP Graphical Solution			Case-based learning and lecture		3x50 minutes
		Sensitivity of the objective function & constraints of the graphical solution			Case-based learning and lecture		3x50 minutes
		LP Simplex Solution			Case-based learning and lecture		3x50 minutes
		Sensitivity of the objective function & constraints of the simplex solution			Case-based learning and lecture		3x50 minutes
		Transportation			Case-based learning and lecture		3x50 minutes
	Midterm Exam/Project Task Results/Case Analysis Results						
		PERT and CPM			Case-based learning and lecture		3x50 minutes
		Inventory			Case-based learning and lecture		3x50 minutes
		Queuing Model			Case-based learning and lecture		3x50 minutes
		DEA			Case-based learning and lecture		3x50 minutes
	Final Exam/ Project Task Results/Case Analysis Results						
	Learning Method	SCL: Learning based on Case based learning/Project based					

Student Learning Experience	Students provide alternative solutions to the various cases given, in accordance with the most appropriate resolution method					
Learning Media Access/ LMS and Percentage of Offline & Online	Google classroom Offline: 100%					
Assessment Method and Alignment with CPMK	Technique Assessment	Percentage Assessment	Criteria/ Indicator	CPMK 1	CPMK 2	CPMK 3
	Case-based learning in practicum	50	Accuracy in resolving cases according to the method	v	v	v
	Cognitive					
	UTS	25	Accuracy in answering questions	v	v	
	UAS	25	Accuracy in answering questions			v
	Total	100				
*) can also be obtained from the Midterm or Final Exam that results from participatory activities or <i>project/case study</i> results. In accordance with IKU 7, the total percentage of participatory activities and project/case study/PBL results is a minimum of 50%.						
Reference List	Operation Research an Introduction, written by Hamdy A. Taha, published by Prentice Hall International Edition, 1992. Quantitative System for Business Plus, written by Yih Long Chan and Robert S. Sullivan, published by Prentice Hall Englewood Cliff, 1989. Cooper, William W.; Lawrence M. Seiford; and Kaoru Tone. Introduction to Data Envelopment Analysis and Its Uses. Springer Science+Business Media, Inc. 2006. Taha, Hamdy A. Operation Research an Introduction, Fifth Edition. Riptanti, E. W., Masyhuri, I., & Suryantini, A. (2022). The sustainability model of dryland farming in food-insecure regions: structural equation modeling (SEM) approach. International Journal of Sustainable Development and Planning, 17(7), 2033-2043.					
Name of Course Lecturer (Team Teaching)	Dr. Jamhari, S.P., M.P. Dr. Ir. Any Suryantini, M.Sc.					
Authorization	Date of Preparation	Course Coordinator		Field of Expertise Coordinator (If Any)		Head of Study Program
	July 2026	Ir. Any Suryantini, M.M., Ph.D.		Signature Full Name		Dr. Lestari Rahayu Waluyati, S.P., M.P