

Riset Operasional

Course Brief Description:	Introduction to Operations Research helps in solving problems using a quantitative approach to get the best possible solution under any given constraints. The course covers several topics that include: Linear Programming, Network, Transportation, Assignment, CPM/ PERT, and Inventory.
Course Learning Objectives:	<p>[1] Students will be able to formulate agricultural engineering related problems into operations research model.</p> <p>[2] Students will be able to apply quantitative methods for effective decisions-making.</p>
Related Expected Learning Outcomes (ELOs):	<ul style="list-style-type: none"> • ELO-3: Apply knowledge of mathematics, sciences, and engineering principles in agricultural fields. • ELO-4: Use quantitative analysis, information technology and critical thinking in agricultural engineering profession. • ELO-8: Demonstrate capacity in operating agricultural engineering related business either as producer or service provider.
Teaching Method	<ul style="list-style-type: none"> • Lecture and in-depth discussion • Tutorial • Independent Assignment.
Grading Policy	<ul style="list-style-type: none"> • Quiz and Assignment : 20% • Exams : 80%
Reference	Introduction to Operations Research 7th Edition by Hiller & Lieberman
Lecturer Name	<ul style="list-style-type: none"> • Prof. Dr. Ir. Junaedi Muhidong, M.Sc. • Ir. Helmi A. Koto, M.Si • Prof. Dr. Ir. Ahmad Munir, M.Eng • Dr. Ir. Abdul Waris, MT • Dr. Ir. Mahmud Achmad, MP. • Dr. Suhardi, STP., MP. • Muhammad Tahir Sapsal, STP., M.Si

Course Outline

Lecture:	Topic:	
1	Introduction & Linear Programming	
2	Linear Programming – Graphical Method	Quiz 1
3	Linear Programming – Simplex Method (Maximization)	
4	Linear Programming – Simplex Method (Minimization)	
5	Linear Programming – Big M Method	
6	Linear Programming – Big M Method	

Lecture:	Topic:	
	Exam 1	
7	Shortest Route	Assignment 1
8	Maximum Flow	
9	CPM	Quiz 2
10	PERT	
11	PERT	
	Exam 2	
12	Transportation	Assignment 2
13	Transportation	
14	Assignment	
15	Inventory	Quiz 3
16	Inventory	
	Final Exam	