



**INSTITUT TEKNOLOGI SEPULUH NOPEMBER
FACULTY OF SCIENCE AND DATA ANALYTICS
DEPARTMENT OF STATISTICS
STATISTICS UNDERGRADUATE PROGRAM**

Course	Course Name	:	Operations Research
	Course Code	:	SS234745
	Credit	:	3 SKS
	Semester	:	VII

COURSE DESCRIPTION

Operation Research is a discipline that applies analytical tools based on quantitative methods in better decision making. In this course presented several fundamental methods and applications in various fields. Students are given an understanding of the theory and basic concepts of Operation Research along with examples of real applications and their completion. In addition, students are also equipped with advanced optimization concepts and procedures and apply them in management issues. The materials provided include Linear Program, SimplexMethod, Duality, Sensitivity, Queue, Transportation Issues, Problems and Analysis of network work and Goal Programming. Materials delivered through interactive lectures, discussions, exercises, and Problem Based Learning

PROGRAM LEARNING OUTCOME

- PLO-5 Able to apply statistical theory to statistical methods
- PLO-9 Able to apply statistical methods to analyze theoretical and real problems

COURSE LEARNING OUTCOME

- CLO-1 Understand the concept of risk management in finance
- CLO-2 Able to Analyze the Financial Statement (Report) of Corporate
- CLO-3 Understand the Concept of Risk and Return
- CLO-4 Able to analyze and optimize portfolio

MAIN SUBJECT

1. Linear Programming, Simplex Method, Duality and Sensitivity,
2. Transportation Issues, Assignment Issues, Queuing Theory,
3. Project Work Network, Goal Programming

PREREQUISITE

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REFERENCES

1. Bazaraa, M., Jarvis, J., dan Sherali, H. Linear Programming and Network Flows, 3rd Ed. John Wiley dan Sons, USA. 2005.
2. Hillier, F. S. And Lieberman, G. J. Introduction to Operations Research, 6th Ed. McGraw-Hill, Inc. New York, USA. 1995.
3. Taha, H. A. Operations Research: An Introduction, 8th Ed. Pearson Prentice Hall. New York, USA. 2007.
4. Wayne, W. Operations Research, Fourth Edition, Brooks/Cole-Thomson Learning, USA. 2004.

5. Montgomery, D.C., 2012. An Introduction to Optimization. 4th edition. USA: John Wiley and Sons Inc.