COURSE PORTFOLIO

Study Program	:	MATHEMATICS - S1
Semester	:	EVEN 2024/2025
Course Code	:	23H01121103
Course Name	:	Operations Research
Coordinator	:	Prof. Dr. Aidawayati Rangkuti, MS.
Lecturer Team Member	:	Prof. Agustinus Ribal, S.Si.,M.Sc., Ph. D, Prof. Dr. Aidawayati Rangkuti, MS.

Implementation of Learning

Description of the implementation of the lecture, the suitability of what was planned in the RPS with what was done:

Number and percentage of lecturer and student attendance

(data source: monitoring the attendance of lecturers and students)

	Lecturer Attendance			Student Attendance
Operations Research A	Prof. Dr. Aidawayati Rangkuti, MS.	:	8 times	Number of students: 41 persons Presence ≥ 80% : 32 persons (78.05 %) Presence < 80% : 9 persons (21.95 %)
	Prof. Agustinus Ribal, S.Si.,M.Sc., Ph. D	:	8 times	
	Total Meeting : 16 times.			
Operations Research B	Prof. Dr. Aidawayati Rangkuti, MS.	:	8 times	Number of students: 32 persons Presence ≥ 80% : 30 persons (93.75 %) Presence < 80% : 3 persons (9.38 %)
	Prof. Agustinus Ribal, S.Si.,M.Sc., Ph. D	:	8 times	
	Total Meeting : 16 times.			

Materials/practicum provided

Convex set and formulation of linear programming problems (convex set and formulation of Linear Programming problems), Solving linear programming problems using the graphical method (Graphical method for solving linear programming problems), Solving linear programming problems using the simplex method (Simplex method for solving linear programming problems), Types of programming problem solutions linear (Special cases of the linear programming solution), Duality and its properties, Formulation of transportation problems and the VAM method (Formulation of linear programming problems and Vogel's approximation method), Stepping stone method and MODI (Stepping stone method and Modified distribution), Project management (Project management), PERT (Program evaluation and review technique)

The learning methods implemented

Small Group Discussion, Collaborative Learning

The assessment method implemented

1. Case Studies
2. Mid Test
3. Final Test

Supplementary information (if available)

None

2. Learning Outcomes

Measurement results of CLO

Assessment and Evaluation of Student Achievement of CLO[a]

LOs that are charged to the Course	CLO	Assessment Form	Weight	Average student score (0-100)
KU1	CLO-2	Final Test	20.00 %	12.12
KU1	CLO-2	Case Studies	15.00 %	10.59
KU1	CLO-2	Mid Test	20.00 %	9.08
KU1	CLO-3	Case Studies	15.00 %	5.59
KU1	CLO-3	Mid Test	20.00 %	9.08
KU1	CLO-4	Mid Test	20.00 %	9.08
KU1	CLO-4	Final Test	20.00 %	12.12
KU1	CLO-4	Case Studies	15.00 %	9.59
KU2	CLO-1	Final Test	20.00 %	12.12
KU2	CLO-1	Case Studies	15.00 %	12.25
KU2	CLO-1	Mid Test	20.00 %	9.08
KU2	CLO-2	Case Studies	15.00 %	10.59
KU2	CLO-2	Mid Test	20.00 %	9.08
KU2	CLO-2	Final Test	20.00 %	12.12
KU2	CLO-3	Mid Test	20.00 %	9.08
KU2	CLO-3	Case Studies	15.00 %	5.59
KU2	CLO-4	Case Studies	15.00 %	9.59
KU2	CLO-4	Final Test	20.00 %	12.12
KU2	CLO-4	Mid Test	20.00 %	9.08
KK2	CLO-2	Final Test	20.00 %	12.12
KK2	CLO-2	Mid Test	20.00 %	9.08
KK2	CLO-2	Case Studies	15.00 %	10.59
KK2	CLO-3	Mid Test	20.00 %	9.08
KK2	CLO-3	Case Studies	15.00 %	5.59

LOs that are charged to the Course	CLO	Assessment Form	Weight	Average student score (0-100)
KK3	CLO-3	Mid Test	20.00 %	9.08
KK3	CLO-3	Case Studies	15.00 %	5.59
KK3	CLO-4	Mid Test	20.00 %	9.08
KK3	CLO-4	Case Studies	15.00 %	9.59
KK3	CLO-4	Final Test	20.00 %	12.12

a: result criteria: very satisfactory if the average score is ≥ 80; satisfactory if the average score is 70 - 79.9; unsatisfactory if the average score is < 70.

Percentage of students who achieved a very satisfactory CLO score [b]

(data source: student scores per assessment according to CLOs)

CLO	% of students who achieved a CLO score of at least 80
CLO-1	15.07%
CLO-2	13.70%
CLO-3	9.59%
CLO-4	13.70%

b: result criteria: very satisfactory if ≥80% of students score ≥80; satisfactory if 70%-79.9% of students score ≥80; less satisfactory if < 70% of students score ≥80.

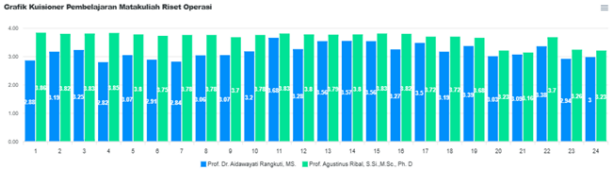
Course Grade

Course Grade	Number and Percentage of Students
A	9 (12.3%)
A-	3 (4.1%)
B+	10 (13.7%)
B	11 (15.1%)
B-	8 (11.0%)
C+	12 (16.4%)
C	8 (11.0%)
D	6 (8.2%)
E	6 (8.2%)

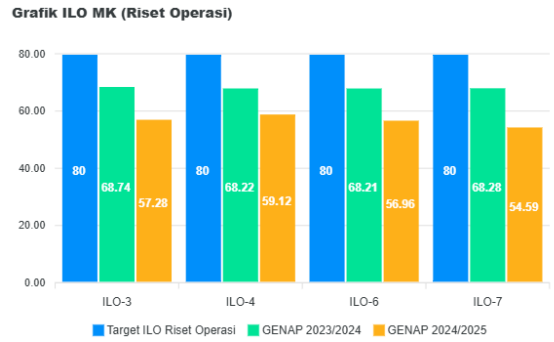
3. Learning evaluation (survey) results

(data source: items / narratives of the results of the MK evaluation questionnaire by students)

Hasil Evaluasi pembelajaran mata kuliah Riset Operasi



Hasil Pengukuran CPL Mata Kuliah Riset Operasi



4. Analysis and Reflection

Analysis

1. Chronic and Continuously Declining Low Performance

Data analysis shows that the Operations Research Course has a problem of chronic and continuing to worsen low performance. In the EVEN 2023/2024 period, the average achievement was already far below the target of 80, which was only around 68. This condition further decreased in the EVEN 2024/2025 period, where the average score fell even further to level 57, showing a clear and consistent negative trend.

2. Very Uniform Performance Patterns in All CPLs

The most striking fact is the very uniform performance patterns in all Graduate Learning Outcomes (CPLs) measured in both periods. No CPL is significantly higher or lower than the others; all show almost identical and equally low levels of achievement. This uniformity indicates that the problems that occur have an even impact on all aspects of the lecture material.

Reflection

1. Indication of Fundamental Problems in Course Design

The pattern of consistently low and uniform performance over two periods reflects the existence of very fundamental problems in the design or pedagogical approach of this course. This is not just a matter of difficulty on one or two topics, but rather the possibility of a misalignment between the complexity of the case study, the student's prerequisite knowledge, and the teaching methods applied as a whole.

2. The Need for Structural Intervention to Break the Negative Trend

A reflection of this fundamental and worsening problem is that partial or piecemeal improvements are unlikely to be effective. This course requires a comprehensive structural intervention to break the negative trend. This means that it is necessary to completely review the syllabus (RPS), the types of exercises and case studies provided, evaluation methods, as well as the addition of learning support systems (such as practicums or tutorials) to rebuild the foundations of student understanding.

5. Follow-up Plan

The follow-up that needs to be taken is to improve the quality of learning through the application of more interactive and applicable methods, such as Problem-Based Learning (PBL) or real case studies, so that students can more easily understand the concept and its application. Apart from that, it is necessary to provide additional practice questions arranged in stages from basic to advanced to help students learn independently and systematically. Remedial classes must also be held regularly for students whose ILO scores are still below the target, so that they receive special guidance. Regular monitoring and evaluation of achievements is also important so that learning strategies can be immediately adjusted if necessary. With these steps, it is hoped that CPL achievements in the Operations Research course can increase and meet the minimum target in the next semester.

6. Follow-up results on the previous semester's evaluation

Following up on the findings in the previous semester's evaluation regarding continuously declining performance in the Operations Research Course (from 68 to 57), a structural intervention has been implemented in the Odd Semester 2025/2026. This intervention includes changes to the RPS for solving case studies, and adjustments to assessments that focus more on project-based tasks. It is recommended that tutorial sessions and project-based assessments be made a permanent component to maintain the continuity of future improvements.

Makassar, 15 Oktober 2025

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