

COURSE PORTFOLIO

Study Program	: MATHEMATICS - S1
Semester	: EVEN 2024/2025
Course Code	: 23H01121003
Course Name	: Partial Differential Equations
Coordinator	: Naimah Aris, S.Si.,M.Math.
Lecturer Team Member	: Naimah Aris, S.Si.,M.Math., Prof. Agustinus Ribal, S.Si.,M.Sc., Ph. D, Prof. Dr. Jeffry Kusuma

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
Partial Differential Equations A	Prof. Dr. Jeffry Kusuma	: 8 times	Number of students: 42 persons
	Naimah Aris, S.Si.,M.Math.	: 8 times	Presence $\geq 80\%$: 37 persons (88.10 %)
	Total Meeting : 16 times.		Presence $< 80\%$: 5 persons (11.90 %)
Partial Differential Equation B	Prof. Dr. Jeffry Kusuma	: 8 times	Number of students: 35 persons
	Prof. Agustinus Ribal, S.Si.,M.Sc., Ph. D	: 8 times	Presence $\geq 80\%$: 31 persons (88.57 %)
	Total Meeting : 16 times.		Presence $< 80\%$: 5 persons (14.29 %)

Materials/practicum provided

Classification of partial differential equations, periodic functions, Fourier series, PDP trichotomy, initial value problems, boundary values, method of separating variables for 1D heat equations, transformation of variables to other variables, several other methods for solving 1D heat equations, transformation to canonical (standard) form, 1D wave equation, D'Alembert solution to 1D wave equation, 2D Laplace equation in Cartesian coordinates, Laplace equation 2D in polar coordinates, Poisson solution for annulus problems, 2D heat equation, 2D wave equation, as well as numerical methods for solving partial differential equations

The learning methods implemented

Cooperative learning

Case Study

The assessment method implemented

1. Case Studies

2. Final Test
3. Independent Assignment

Supplementary information (if available)

Assessments are Independent Assignments, Reports, Quizzes, Mid Tests, and Final Tests.

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)
ILO 1	CLO-1	Independent Assignment	8.33 %	67.38
ILO 1	CLO-1	Independent Assignment	8.34 %	56.07
ILO 1	CLO-1	Independent Assignment	25.00 %	52.17
ILO 1	CLO-1	Case Studies	5.00 %	74.88
ILO 1	CLO-1	Independent Assignment	5.00 %	83.26
ILO 1	CLO-1	Independent Assignment	10.00 %	69.02
ILO 1	CLO-1	Final Test	20.00 %	47.85
ILO 1	CLO-1	Independent Assignment	8.33 %	76.91
ILO 1	CLO-1	Case Studies	8.33 %	61.76
ILO 1	CLO-1	Case Studies	8.34 %	65.00
ILO 1	CLO-1	Case Studies	25.00 %	61.24
ILO 1	CLO-1	Case Studies	7.50 %	55.15
ILO 1	CLO-1	Independent Assignment	7.50 %	36.47
ILO 1	CLO-1	Independent Assignment	15.00 %	91.47
ILO 1	CLO-1	Final Test	20.00 %	56.15
ILO 1	CLO-2	Independent Assignment	8.33 %	67.38
ILO 1	CLO-2	Independent Assignment	8.34 %	56.07
ILO 1	CLO-2	Independent Assignment	25.00 %	52.17
ILO 1	CLO-2	Case Studies	5.00 %	74.88

LOs that are charged to the Course	CLO	Assessment Form	Weight	Average student score (0-100)
ILO 1	CLO-2	Independent Assignment	5.00 %	76.68
ILO 1	CLO-2	Independent Assignment	10.00 %	69.02
ILO 1	CLO-2	Final Test	20.00 %	47.85
ILO 1	CLO-2	Independent Assignment	8.33 %	76.91
ILO 1	CLO-2	Case Studies	8.33 %	61.76
ILO 1	CLO-2	Case Studies	8.34 %	65.00
ILO 1	CLO-2	Case Studies	25.00 %	61.24
ILO 1	CLO-2	Case Studies	7.50 %	55.15
ILO 1	CLO-2	Independent Assignment	7.50 %	36.47
ILO 1	CLO-2	Final Test	20.00 %	56.15
P2	CLO-1	Independent Assignment	8.33 %	67.38
P2	CLO-1	Independent Assignment	8.34 %	56.07
P2	CLO-1	Independent Assignment	25.00 %	52.17
P2	CLO-1	Case Studies	5.00 %	74.88
P2	CLO-1	Independent Assignment	5.00 %	83.26
P2	CLO-1	Independent Assignment	10.00 %	69.02
P2	CLO-1	Final Test	20.00 %	47.85
P2	CLO-1	Independent Assignment	8.33 %	76.91
P2	CLO-1	Case Studies	8.33 %	61.76
P2	CLO-1	Case Studies	8.34 %	65.00
P2	CLO-1	Case Studies	25.00 %	61.24
P2	CLO-1	Case Studies	7.50 %	55.15
P2	CLO-1	Independent Assignment	7.50 %	36.47
P2	CLO-1	Independent Assignment	15.00 %	91.47
P2	CLO-1	Final Test	20.00 %	56.15

LOs that are charged to the Course	CLO	Assessment Form	Weight	Average student score (0-100)
P2	CLO-2	Independent Assignment	8.33 %	67.38
P2	CLO-2	Independent Assignment	8.34 %	56.07
P2	CLO-2	Independent Assignment	25.00 %	52.17
P2	CLO-2	Case Studies	5.00 %	74.88
P2	CLO-2	Independent Assignment	5.00 %	76.68
P2	CLO-2	Independent Assignment	10.00 %	69.02
P2	CLO-2	Final Test	20.00 %	47.85
P2	CLO-2	Independent Assignment	8.33 %	76.91
P2	CLO-2	Case Studies	8.33 %	61.76
P2	CLO-2	Case Studies	8.34 %	65.00
P2	CLO-2	Case Studies	25.00 %	61.24
P2	CLO-2	Case Studies	7.50 %	55.15
P2	CLO-2	Independent Assignment	7.50 %	36.47
P2	CLO-2	Final Test	20.00 %	56.15
P2	CLO-4	Independent Assignment	8.34 %	56.07
P2	CLO-4	Case Studies	5.00 %	74.88
P2	CLO-4	Independent Assignment	5.00 %	96.43
P2	CLO-4	Final Test	20.00 %	47.85
P2	CLO-4	Case Studies	8.33 %	61.76
P2	CLO-4	Case Studies	8.34 %	65.00
P2	CLO-4	Case Studies	25.00 %	61.24
P2	CLO-4	Case Studies	7.50 %	55.15
P2	CLO-4	Independent Assignment	15.00 %	91.47
P2	CLO-4	Final Test	20.00 %	56.15
P2	CLO-5	Independent Assignment	5.00 %	88.17
P2	CLO-5	Independent Assignment	10.00 %	69.02

LOs that are charged to the Course	CLO	Assessment Form	Weight	Average student score (0-100)
P2	CLO-5	Final Test	20.00 %	47.85
P2	CLO-5	Independent Assignment	7.50 %	36.47
P2	CLO-5	Independent Assignment	15.00 %	91.47
P2	CLO-5	Final Test	20.00 %	56.15
KU2	CLO-3	Independent Assignment	8.33 %	67.38
KU2	CLO-3	Independent Assignment	8.34 %	56.07
KU2	CLO-3	Independent Assignment	25.00 %	52.17
KU2	CLO-3	Final Test	20.00 %	47.85
KU2	CLO-3	Independent Assignment	8.33 %	76.91
KU2	CLO-3	Case Studies	8.33 %	61.76
KU2	CLO-3	Final Test	20.00 %	56.15
KU2	CLO-4	Independent Assignment	8.34 %	56.07
KU2	CLO-4	Case Studies	5.00 %	74.88
KU2	CLO-4	Independent Assignment	5.00 %	96.43
KU2	CLO-4	Final Test	20.00 %	47.85
KU2	CLO-4	Case Studies	8.33 %	61.76
KU2	CLO-4	Case Studies	8.34 %	65.00
KU2	CLO-4	Case Studies	25.00 %	61.24
KU2	CLO-4	Case Studies	7.50 %	55.15
KU2	CLO-4	Independent Assignment	15.00 %	91.47
KU2	CLO-4	Final Test	20.00 %	56.15
KU2	CLO-5	Independent Assignment	5.00 %	88.17
KU2	CLO-5	Independent Assignment	10.00 %	69.02
KU2	CLO-5	Final Test	20.00 %	47.85

LOs that are charged to the Course	CLO	Assessment Form	Weight	Average student score (0-100)
KU2	CLO-5	Independent Assignment	7.50 %	36.47
KU2	CLO-5	Independent Assignment	15.00 %	91.47
KU2	CLO-5	Final Test	20.00 %	56.15
KK1	CLO-3	Independent Assignment	8.33 %	67.38
KK1	CLO-3	Independent Assignment	8.34 %	56.07
KK1	CLO-3	Independent Assignment	25.00 %	52.17
KK1	CLO-3	Final Test	20.00 %	47.85
KK1	CLO-3	Independent Assignment	8.33 %	76.91
KK1	CLO-3	Case Studies	8.33 %	61.76
KK1	CLO-3	Final Test	20.00 %	56.15
KK1	CLO-4	Independent Assignment	8.34 %	56.07
KK1	CLO-4	Case Studies	5.00 %	74.88
KK1	CLO-4	Independent Assignment	5.00 %	96.43
KK1	CLO-4	Final Test	20.00 %	47.85
KK1	CLO-4	Case Studies	8.33 %	61.76
KK1	CLO-4	Case Studies	8.34 %	65.00
KK1	CLO-4	Case Studies	25.00 %	61.24
KK1	CLO-4	Case Studies	7.50 %	55.15
KK1	CLO-4	Independent Assignment	15.00 %	91.47
KK1	CLO-4	Final Test	20.00 %	56.15
KK1	CLO-6	Independent Assignment	5.00 %	76.68
KK1	CLO-6	Independent Assignment	10.00 %	69.02
KK1	CLO-6	Final Test	20.00 %	47.85
KK1	CLO-6	Independent Assignment	7.50 %	36.47
KK1	CLO-6	Final Test	20.00 %	56.15

LOs that are charged to the Course	CLO	Assessment Form	Weight	Average student score (0-100)
KU1	CLO-3	Independent Assignment	8.33 %	67.38
KU1	CLO-3	Independent Assignment	8.34 %	56.07
KU1	CLO-3	Independent Assignment	25.00 %	52.17
KU1	CLO-3	Final Test	20.00 %	47.85
KU1	CLO-3	Independent Assignment	8.33 %	76.91
KU1	CLO-3	Case Studies	8.33 %	61.76
KU1	CLO-3	Final Test	20.00 %	56.15
KU1	CLO-4	Independent Assignment	8.34 %	56.07
KU1	CLO-4	Case Studies	5.00 %	74.88
KU1	CLO-4	Independent Assignment	5.00 %	96.43
KU1	CLO-4	Final Test	20.00 %	47.85
KU1	CLO-4	Case Studies	8.33 %	61.76
KU1	CLO-4	Case Studies	8.34 %	65.00
KU1	CLO-4	Case Studies	25.00 %	61.24
KU1	CLO-4	Case Studies	7.50 %	55.15
KU1	CLO-4	Independent Assignment	15.00 %	91.47
KU1	CLO-4	Final Test	20.00 %	56.15
KU1	CLO-5	Independent Assignment	5.00 %	88.17
KU1	CLO-5	Independent Assignment	10.00 %	69.02
KU1	CLO-5	Final Test	20.00 %	47.85
KU1	CLO-5	Independent Assignment	7.50 %	36.47
KU1	CLO-5	Independent Assignment	15.00 %	91.47
KU1	CLO-5	Final Test	20.00 %	56.15
KK2	CLO-3	Independent Assignment	8.33 %	67.38
KK2	CLO-3	Independent Assignment	8.34 %	56.07

LOs that are charged to the Course	CLO	Assessment Form	Weight	Average student score (0-100)
KK2	CLO-3	Independent Assignment	25.00 %	52.17
KK2	CLO-3	Final Test	20.00 %	47.85
KK2	CLO-3	Independent Assignment	8.33 %	76.91
KK2	CLO-3	Case Studies	8.33 %	61.76
KK2	CLO-3	Final Test	20.00 %	56.15
KK2	CLO-6	Independent Assignment	5.00 %	76.68
KK2	CLO-6	Independent Assignment	10.00 %	69.02
KK2	CLO-6	Final Test	20.00 %	47.85
KK2	CLO-6	Independent Assignment	7.50 %	36.47
KK2	CLO-6	Final Test	20.00 %	56.15

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	0.00%
CLO-2	0.00%
CLO-3	0.00%
CLO-4	0.00%
CLO-5	0.00%
CLO-6	0.00%

b: result criteria: very satisfactory if $\geq 80\%$ 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	3 (3.9%)
A-	4 (5.2%)
B+	16 (20.8%)
B	10 (13.0%)
B-	9 (11.7%)
C+	19 (24.7%)

Course Grade	Number and Percentage of Students
C	3 (3.9%)
D	3 (3.9%)
E	9 (11.7%)

3. Learning evaluation (survey) results

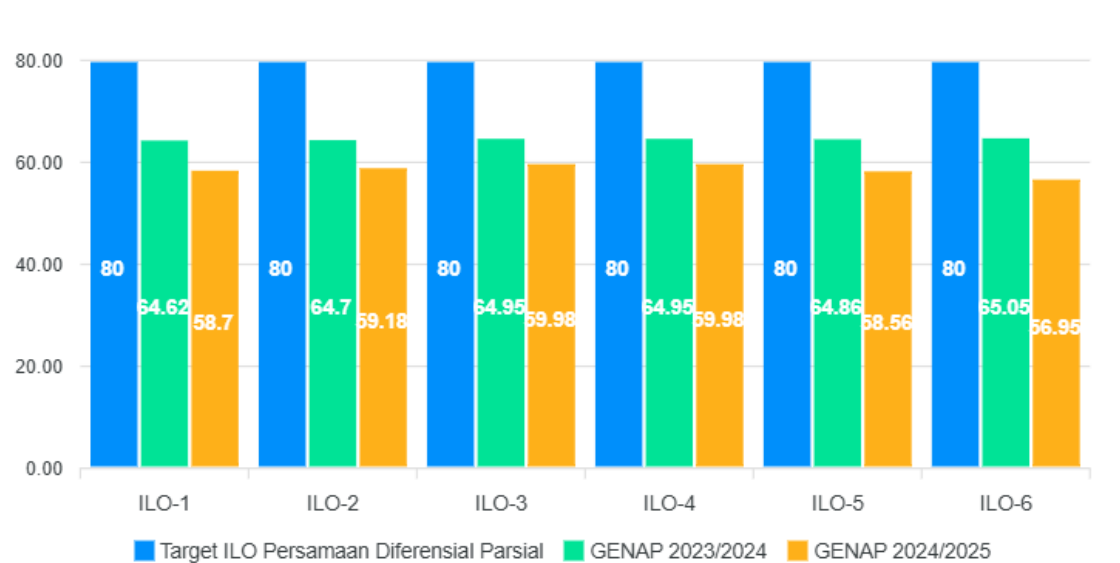
(data source: items / narratives of the results of the MK evaluation questionnaire by students)

Hasil Evaluasi pembelajaran mata kuliah Persamaan Diferensial Parsial



Hasil Pengukuran CPL Mata Kuliah Persamaan Diferensial Parsial

Grafik ILO MK (Persamaan Diferensial Parsial)



4. Analysis and Reflection

Analysis

1. Student Survey Results

Based on the results of the evaluation of the implementation of the learning process, data from the learning survey results show that the level of student satisfaction with the implementation of the learning process is quite satisfactory. Starting from the delivery of learning plans, delivery of material, satisfaction with the lecturer's competence in teaching, satisfaction with the lecturer in providing good feedback, and student satisfaction in the organization of lecture time by the teaching lecturer. Some aspects that students feel need to be improved are learning facilities, such as library services and the organization of the completion time given to students.

2. Continuously Declining CPL Achievement

Data analysis shows that the Partial Differential Equations Course has a problem of low performance that is chronic and continues to get worse. In the EVEN 2023/2024 period, the average achievement was already far below the target, namely only around 65. This condition further decreased in the EVEN 2024/2025 period, where the average score fell even further to level 58, showing a clear negative trend.

2. Very Uniform Performance Pattern in All CPLs

The most striking fact is the very uniform performance pattern in all Graduate Learning Outcomes (CPL) 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 lecture material.

Reflection

1. Indication of Fundamental Problems in Course Design

The pattern of consistently low and uniform performance over two periods reflects a very fundamental problem 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 level of difficulty of the material, the student's prerequisite knowledge, and the teaching methods applied as a whole. In this MK, the Case Study learning method is applied, but seeing that achievement has not increased, the use of this method in learning will be improved.

2. The Need for Structural Intervention, Not Partial Repair

A reflection of this fundamental problem is that partial or piecemeal repairs will most likely not be effective. This course requires a comprehensive structural intervention. This means that it is necessary to carry out a total review of the syllabus (RPS), teaching materials, evaluation methods, as well as additional learning support systems (such as tutorials or intensive responses) to rebuild the foundations of student understanding from the basics.

5. Follow-up Plan

Based on the graph of CPL measurement results in the Partial Differential Equations course, it can be seen that there has been a decline in achievement in all ILOs, where none of them met the minimum target of 80. Therefore, the follow-up plan will focus on providing additional practice questions on a massive and structured basis. Apart from holding additional (remedial) classes for students with low scores, graded question practice modules (basic, intermediate, advanced) will also be prepared which can help students practice independently and systematically. The use of the Problem-Based Learning (PBL) method will be increased so that students are more accustomed to facing and solving real problems.

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

The results of improvements from the previous reflection have not shown good effectiveness as indicated by the survey results obtained. However, from the results of measuring CPL achievement, improvements

still need to be made in the next semester.

Makassar, 15 Oktober 2025

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