

COURSE PORTFOLIO

Study Program	: MATHEMATICS - S1
Semester	: EVEN 2024/2025
Course Code	: 23H01121203
Course Name	: Mathematical Model
Coordinator	: Prof. Dr. Kasbawati, S.Si., M.Si.
Lecturer Team Member	: Prof. Dr. Syamsuddin Toaha, M.Sc., Dr. Khaeruddin, M.Sc., Prof. Dr. Kasbawati, S.Si., M.Si.

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
Mathematical Model A	Prof. Dr. Syamsuddin Toaha, M.Sc.	: 5 times	Number of students: 40 persons Presence $\geq 80\%$: 36 persons (90.00 %) Presence $< 80\%$: 4 persons (10.00 %)
	Prof. Dr. Kasbawati, S.Si., M.Si.	: 6 times	
	Dr. Khaeruddin, M.Sc.	: 5 times	
	Total Meeting : 16 times.		
Mathematical Model B	Prof. Dr. Syamsuddin Toaha, M.Sc.	: times	Number of students: 32 persons Presence $\geq 80\%$: 31 persons (96.88 %) Presence $< 80\%$: 1 person (3.12 %)
	Prof. Dr. Kasbawati, S.Si., M.Si.	: 6 times	
	Dr. Khaeruddin, M.Sc.	: 3 times	
	Total Meeting : 10 times.		

Materials/practicum provided

Mathematical modeling, namely mass spring and pendulum systems, population dynamics, and modeling traffic flow problems.

The learning methods implemented

Problem based learning, small group discussions, cooperative learning

The assessment method implemented

1. Project Report
2. Presentation
3. Independent Assignment

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)
KK1	CLO-2	Presentation	8.37 %	84.88
KK1	CLO-2	Project Report	20.06 %	89.59
KK1	CLO-2	Project Report	8.31 %	84.00
KK1	CLO-2	Presentation	6.66 %	84.44
KK1	CLO-2	Presentation	4.99 %	86.25
KK1	CLO-2	Presentation	8.36 %	96.25
KK1	CLO-2	Project Report	8.32 %	92.31
KK1	CLO-2	Project Report	9.99 %	87.34
KK1	CLO-2	Project Report	4.99 %	85.31
KK1	CLO-2	Project Report	6.66 %	83.12
KK2	CLO-3	Project Report	3.32 %	95.12
KK2	CLO-3	Presentation	8.36 %	96.25
KK2	CLO-3	Presentation	8.31 %	83.50
KK2	CLO-3	Project Report	8.32 %	92.31
KK2	CLO-3	Presentation	4.99 %	80.96
KK2	CLO-3	Project Report	20.06 %	89.59
KK2	CLO-3	Presentation	3.33 %	97.53
KK2	CLO-3	Project Report	4.99 %	88.56
KK2	CLO-3	Presentation	20.09 %	81.70
KK2	CLO-3	Project Report	9.99 %	87.34
KK2	CLO-3	Project Report	9.98 %	86.67
KK3	CLO-1	Presentation	8.36 %	96.25
KK3	CLO-1	Project Report	9.99 %	87.34
KK3	CLO-1	Project Report	4.99 %	88.56

LOs that are charged to the Course	CLO	Assessment Form	Weight	Average student score (0-100)
KK3	CLO-1	Independent Assignment	8.32 %	80.31
KK3	CLO-1	Project Report	20.06 %	89.59
KK3	CLO-1	Independent Assignment	6.66 %	78.26
KK3	CLO-1	Presentation	4.99 %	86.25
KK3	CLO-1	Independent Assignment	5.02 %	74.79
KK3	CLO-1	Project Report	8.32 %	92.31
KK3	CLO-1	Independent Assignment	8.31 %	70.25
S1	CLO-1	Project Report	20.06 %	89.59
S1	CLO-1	Presentation	8.36 %	96.25
S1	CLO-1	Presentation	4.99 %	86.25
S1	CLO-1	Project Report	8.32 %	92.31
S1	CLO-1	Project Report	9.99 %	87.34
S1	CLO-1	Independent Assignment	8.31 %	70.25
S1	CLO-1	Project Report	4.99 %	88.56
S1	CLO-1	Independent Assignment	5.02 %	74.79
S1	CLO-1	Independent Assignment	6.66 %	78.26
S1	CLO-1	Independent Assignment	8.32 %	80.31
S2	CLO-2	Project Report	8.31 %	84.00
S2	CLO-2	Presentation	8.37 %	84.88
S2	CLO-2	Presentation	4.99 %	86.25
S2	CLO-2	Project Report	9.99 %	87.34
S2	CLO-2	Project Report	8.32 %	92.31
S2	CLO-2	Project Report	20.06 %	89.59
S2	CLO-2	Project Report	4.99 %	85.31
S2	CLO-2	Presentation	6.66 %	84.44
S2	CLO-2	Presentation	8.36 %	96.25
S2	CLO-2	Project Report	6.66 %	83.12
S2	CLO-3	Presentation	4.99 %	80.96

LOs that are charged to the Course	CLO	Assessment Form	Weight	Average student score (0-100)
S2	CLO-3	Project Report	3.32 %	95.12
S2	CLO-3	Project Report	9.98 %	86.67
S2	CLO-3	Project Report	8.32 %	92.31
S2	CLO-3	Presentation	20.09 %	81.70
S2	CLO-3	Project Report	20.06 %	89.59
S2	CLO-3	Presentation	8.31 %	83.50
S2	CLO-3	Presentation	8.36 %	96.25
S2	CLO-3	Presentation	3.33 %	97.53
S2	CLO-3	Project Report	9.99 %	87.34
S2	CLO-3	Project Report	4.99 %	88.56

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	65.28%
CLO-2	90.28%
CLO-3	93.06%

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

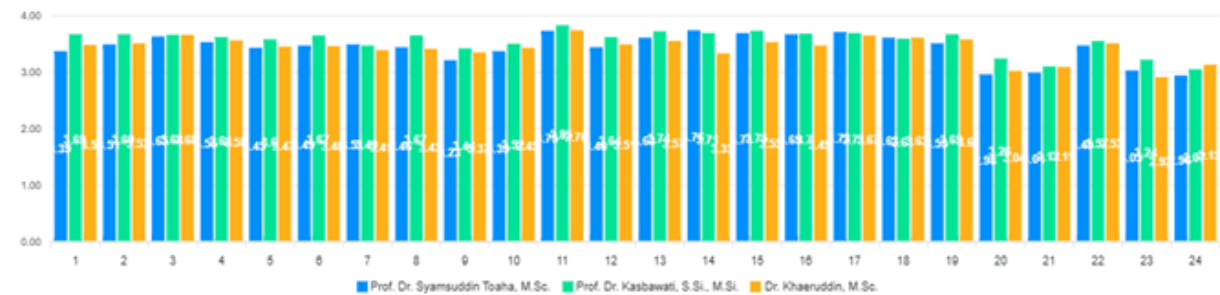
Course Grade	Number and Percentage of Students
A	63 (87.5%)
A-	1 (1.4%)
B+	2 (2.8%)
B	0 (0.0%)
B-	1 (1.4%)
C+	1 (1.4%)
C	0 (0.0%)
D	1 (1.4%)
E	3 (4.2%)

3. Learning evaluation (survey) results

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

Hasil Evaluasi pembelajaran mata kuliah Model Matematika

Grafik Kuisioner Pembelajaran Matakuliah Model Matematika

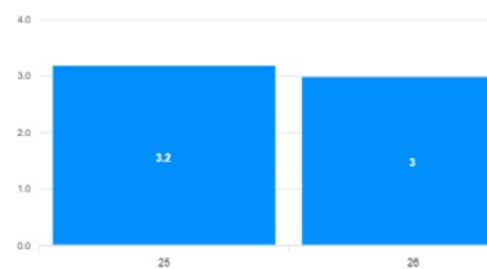


Keterangan Nilai

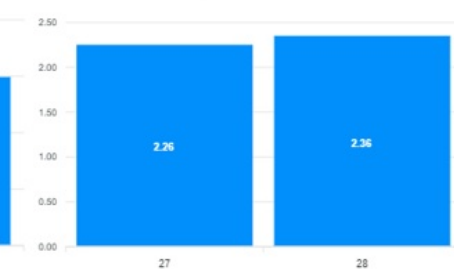
Pertanyaan 1-24:

- 4 : Sangat Setuju/ Sangat Baik
- 3 : Setuju / Baik
- 2 : Ragu-ragu / Cukup
- 1 : Tidak Setuju / Kurang

Grafik Kuisioner Pembelajaran



Grafik Kuisioner Pembelajaran



Pertanyaan 25 dan 26: (WE = Waktu Efektif)

- 5 : WE > 200 menit
- 4 : 180 menit < WE <= 200 menit
- 3 : 120 menit < WE <= 180 menit
- 2 : 60 menit < WE <= 120 menit
- 1 : 1WE <= 60 menit

Pertanyaan 27:

- 3 : Lebih Banyak
- 2 : Sama
- 1 : Lebih Sedikit

Pertanyaan 28:

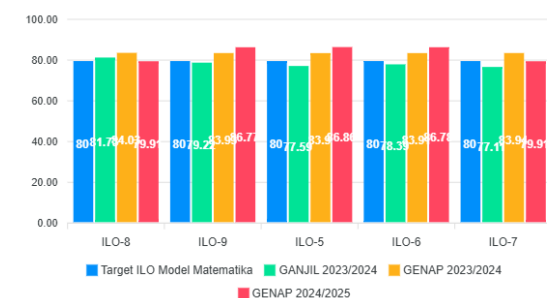
- 3 : Sama
- 2 : Cukup Sesuai
- 1 : Kurang Sesuai

Informasi Pertanyaan Kuisioner

1. Dosen Menyampaikan Rancangan Pembelajaran Semester (RPS) dan kontrak Perkuliahan di awal Perkuliahan dengan jelas
2. Dosen Menjelaskan Proses Pembelajaran yang berpusat pada mahasiswa (Student Centered Learning)
3. Dosen Menyampaikan materi Pembelajaran dan sumber daya pendukung pembelajaran (Buku, slide, kasus, tugas, bahan ajar, dll)
4. Dosen menyampaikan materi dengan baik dan jelas
5. Dosen memberikan materi setiap minggu sesuai dengan Rancangan Pembelajaran Semester (RPS) matakuliah
6. Dosen menyampaikan materi dengan baik dan memberikan komentar secara lengkap
7. Dosen memberikan Penilaian dengan jelas dan sesuai dengan kontrak perkuliahan yang telah ditetapkan
8. Dosen memberikan Penilaian dengan baik dan memberikan komentar secara lengkap
9. Dosen menyampaikan materi dengan baik dan memberikan komentar secara lengkap
10. Matakuliah yang diberikan memotivasi kemampuan intelektual
11. Target keahlihan saya dalam matakuliah ini sangat tinggi (lebih dari 80% pertemuan)
12. Dosen memberikan kuis sesuai dengan jadwal kuliah yang telah ditetapkan
13. Terkadang keahlihan saya dalam matakuliah ini sangat tinggi (lebih dari 80% pertemuan)
14. Dosen memberikan kuis sesuai dengan jadwal kuliah yang telah ditetapkan
15. Dosen menyampaikan materi dengan baik dan memberikan komentar secara lengkap
16. Dosen menyampaikan materi dengan baik dan memberikan komentar secara lengkap
17. Terkadang keahlihan saya dalam matakuliah ini sangat tinggi (lebih dari 80% pertemuan)
18. Dosen memberikan kuis sesuai dengan jadwal kuliah yang telah ditetapkan
19. Dosen menyampaikan materi dengan baik dan memberikan komentar secara lengkap
20. Dosen menyampaikan materi dengan baik dan memberikan komentar secara lengkap
21. Dosen menyampaikan materi dengan baik dan memberikan komentar secara lengkap
22. Dosen menyampaikan materi dengan baik dan memberikan komentar secara lengkap
23. Dosen menyampaikan materi dengan baik dan memberikan komentar secara lengkap
24. Dosen menyampaikan materi dengan baik dan memberikan komentar secara lengkap
25. Dosen menyampaikan materi dengan baik dan memberikan komentar secara lengkap
26. Dosen menyampaikan materi dengan baik dan memberikan komentar secara lengkap
27. Dosen menyampaikan materi dengan baik dan memberikan komentar secara lengkap
28. Dosen menyampaikan materi dengan baik dan memberikan komentar secara lengkap

Hasil Pengukuran CPL Mata Kuliah Model Matematika

Grafik ILO MK (Model Matematika)



4. Analysis and Reflection

Analysis

1. Consistent and Sustained Superior Performance

Data analysis shows that the Mathematical Model Course has consistently demonstrated excellent and sustained performance over the three evaluation periods. For the majority of Graduate Learning Outcomes (CPL), the average student score is stably around or exceeds the target of 80, which indicates a very effective and mature learning and evaluation process.

2. There is an Increasing Trend in the Latest Period

Apart from being consistent, data for the latest period (EVEN 2024/2025 - red) shows a positive increasing trend. Performance on ILO-9, ILO-5, and ILO-6 was successfully pushed even higher to reach the highest score level of ~86. This shows that there are continuous improvement efforts that have been successfully implemented.

Reflection

1. Strong Indication of the Existence of Established Good Practices

Performance that is not only high but also stable and even increases over time reflects that this course has established and tested good practices (best practices). This includes the possibility of solid curriculum design, engaging and effective teaching methodologies, and well-aligned and calibrated evaluation systems. This course can be used as a pilot model (benchmark).

2. Focus Shifts from Improvement to Optimization

With excellent achievements, the follow-up focus for this course is no longer on "improving" problems, but rather on "optimization" to achieve higher excellence. The reflection is that, despite the lead, there is still some room for improvement on ILO-8 and ILO-7 (score 79). Strategies that succeeded in improving the performance of ILO-9, 5, and 6 in the last period can be analyzed and adapted to improve these two areas so that all CPLs can reach level 85+.

5. Follow-up Plan

For the next semester, planned follow-up includes optimizing innovative learning methods such as blended learning and interactive simulations to deepen understanding of Mathematical Models. Mentoring and coaching programs will be strengthened to provide personal support for students who have not achieved ILO targets. In addition, the development of project-based modules that encourage the collaborative application of theory to real cases will be carried out, accompanied by formative evaluation and regular feedback so that learning can be adjusted quickly. Integration of the latest mathematical software will also be improved to help visualize complex models, and collaboration between lecturers will be strengthened to share the best teaching strategies. With these steps, it is hoped that CPL achievements will not only meet targets but also increase sustainably.

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

Following up on the results of the previous semester's evaluation for the Mathematics Model Course, which showed superior performance and consistently exceeding targets, an action plan that focuses on optimizing and standardizing good practices has been implemented. The plan includes documentation of proven successful teaching methods as well as providing additional reinforcement focused on ILO-8 and ILO-7 to standardize levels of excellence across all outcomes. In the evaluation of the 2025/2026 Odd semester, this strategy proved to be very successful; not only was overall superior performance maintained, but outcomes for ILO-8 and ILO-7 were significantly improved to be on par with other CPLs, with average scores leveling at 86. This success confirms the effectiveness of continuous improvement cycles even in high-performing courses, and it is now recommended that good practice from these courses be disseminated as a pilot model at study program level.

Makassar, 15 Oktober 2025

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