COURSE PORTFOLIO

Study Program	:	MATHEMATICS - S1
Semester	:	ODD 2024/2025
Course Code	:	23H01120204
Course Name	:	Advanced Mathematics
Coordinator	:	Dr. Muhammad Zakir, M.Si.
Lecturer Team Member	:	Dr. Muhammad Zakir, M.Si., Dr. Andi Muhammad Anwar, 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
Advanced Mathematics A	Dr. Muhammad Zakir, M.Si.	:	times	Number of students: 37 persons
	Dr. Andi Muhammad Anwar, S.Si., M.Si	:	times	
	Total Meeting : times.			Presence ≥ 80% : Presence < 80% :
Advanced Mathematics B	Dr. Muhammad Zakir, M.Si.	:	times	Number of students: 43 persons
	Dr. Andi Muhammad Anwar, S.Si., M.Si	:	times	
	Total Meeting : times.			Presence ≥ 80% : Presence < 80% :

Materials/practicum provided

1. Vector Functions: Parametric Functions, Vector Functions and Space Curves, Derivatives and Integrals of Vector Functions, Arc Length and Curvature, Motion in Space

2. Calculus Vector: vectors fields, line integrals,The Fundamental Theorem for Line Integrals, Green's theorem, curl and divergence, Surface integrals, Stokes Theorem

3. Line Integrals and Surface Integrals

4. Sequence and Series

5. Series and Integral Fourier

6. Gamma and Beta Functions

The learning methods implemented

Case Study and Discussion

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)
ILO 1	CLO-1	Case Studies	5.00 %	50.59
ILO 1	CLO-1	Case Studies	15.00 %	58.01
ILO 1	CLO-1	Mid Test	20.00 %	48.14

LOs that are charged to the Course	CLO	Assessment Form	Weight	Average student score (0-100)
ILO 1	CLO-1	Final Test	20.00 %	56.50
P2	CLO-3	Case Studies	10.00 %	64.83
P2	CLO-3	Case Studies	5.00 %	44.21
P2	CLO-3	Mid Test	20.00 %	48.14
P2	CLO-3	Final Test	20.00 %	56.50
KU1	CLO-3	Case Studies	10.00 %	64.83
KU1	CLO-3	Case Studies	5.00 %	44.21
KU1	CLO-3	Mid Test	20.00 %	48.14
KU1	CLO-3	Final Test	20.00 %	56.50

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)

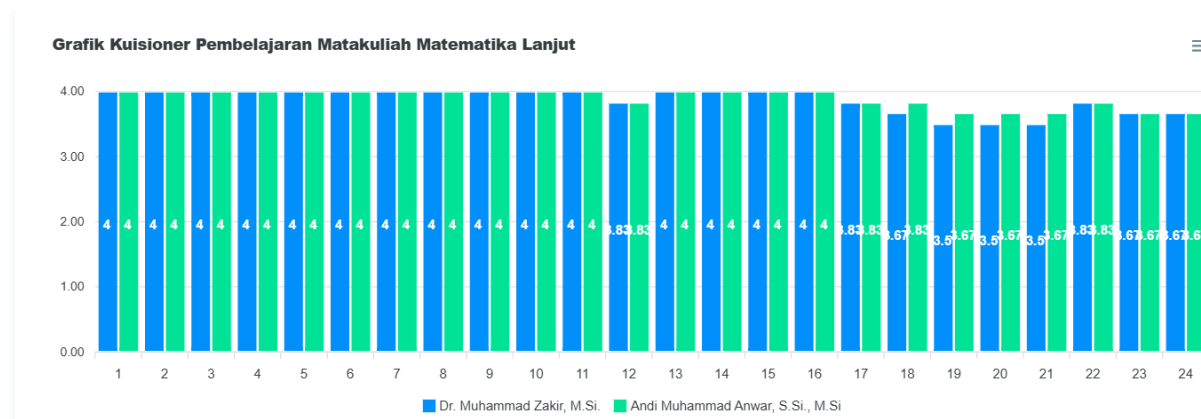| CLO	% of students who achieved a CLO score of at least 80
CLO-1	6.25%
CLO-2	0.00%
CLO-3	11.25%

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

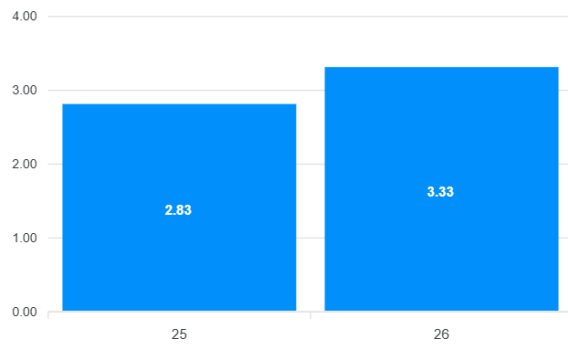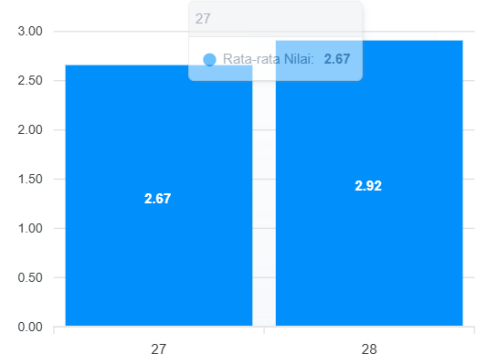| Course Grade	Number and Percentage of Students
A	4 (5.0%)
A-	4 (5.0%)
B+	2 (2.5%)
B	4 (5.0%)
B-	9 (11.2%)
C+	17 (21.2%)
C	26 (32.5%)
D	3 (3.8%)
E	11 (13.8%)

3. Learning evaluation (survey) results

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

Grafik Kuisioner Pembelajaran Matakuliah Matematika Lanjut

Grafik Kuisioner Pembelajaran

	25	26
Nilai	2.83	3.33

Grafik Kuisioner Pembelajaran

27
● Rata-rata Nilai: 2.67

	27	28
Nilai	2.67	2.92

Keterangan Nilai

Pertanyaan 1-24:
- 4 : Sangat Setuju/ Sangat Baik
- 3 : Setuju / Baik
- 2 : Ragu-ragu / Cukup
- 1 : Tidak Setuju / Kurang

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 : 1:WE <= 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 Menjalankan Proses Pembelajaran yang berpusat pada mahasiswa (Student Centered Learning)

3. Dosen Menyiapakan materi Pemebelajaran dan sumber daya pensukung pwmbelajaran (diktat, slide, kasus, tugas, bahan ujian, dsb)

4. Dosen menjelaskan materi dengan baik dan jelas

5. Dosen memberikan materi setiap minggu sesuai dengan Rancangan Pembelajaran Semester (RPS) matakuliah

6. Dosen mempunyai kepedulian dan membantu mahasiswa dalam pemahaman dan penguasaan suatu materi

7. Dosen Memberikan Penilaian dengan jelas dan sesuai dengn kontrak perkuliahan yang telah disepakati

8. Dosen memberikan umpan balik dengan memberikan komentar secara lengkap

9. Saya memahami materi kuliah setelah menyelesaikan perkuliahan ini

10. Matakuliah yang diberikan menstimulasi kemampuan intelektual saya

11. Tingkat kehadiran saya dalam matakuliah ini sangat tinggi (lebih dari 80% pertemuan)

12. Dosen menggunakan lebih dari satu metode penilaian (Assessment Method)

13. Jadwal matakuliah telah diinformasikan di SIM secara jelas sebelum perkuliahan dimulai

14. Dosen memberikan kuliah sesuai dengan jadwal kuliah yang telah ditetapkan

15. Dosen hadir tepat waktu sesuai dengan jadwal kuliah yang telah ditetapkan

16. Dosen menyelesaikan perkuliahan tepat waktu sesuai dengan jadwal kuliah yang telah ditetapkan

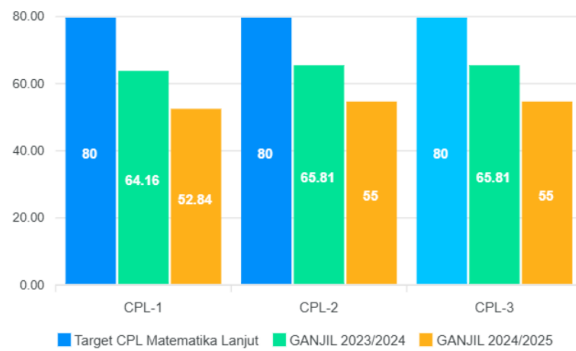**17.** Tersedia buku acuan/modul/ringkasan materi/slide matakuliah untuk semua materi yang diberikan

18. Buku acuan/modul/ringkasan materi/slide matakuliah yang diberikan bermanfaat dan uptodate dangan perkembangan yang ada

19. Selama Kualiah daring, fasilitas perkuliahan cukup memadai

20. Saya menggunakan SIKOLA sebagai wadah pembelajaran

21. Layanan Perpustakaan Prodi/Departemen/Fakultas/Universitas sangat membantu dalam proses pembelajaran

22. Beban sks matakuliah ini sudah sesuai dengan kompetensi yang akan dicapai (Catatan : 1 sks setara dngan 170 menit kegiatan belajar setiap pekan per semester)

23. Saya menggunakan SIKOLA sebagai wadah pembelajaran

24. Layanan Perpustakaan Prodi/Departemen,Universitas sangat membantu dalam proses pembelajaran

25. Rata-rata Waktu Efektif (dalam menit) yang anda habiskan dalam seminggu (di luar jam perkuliahan)untuk menyelesaikan tugas terstrukturpada matakuliah ini

26. Rata-rata Waktu Efektif (dalam menit) yang anda habiskan dalam seminggu (di luar jam perkuliahan) unuk belajar mandiri pada matakuliah ini

27. Dibandingkan dengan matakuliah yang lainnya, jumlah waktu yang anda habiskan khusus untuk matakuliah ini

28. Alokasi waktu yang digunakan untuk menyelesaikan tugas yang diberikan matakuliah ini

Grafik CPL MK (Matematika Lanjut)

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Hasil Pengukuran CPL MK Matematika Lanjut

4. Analysis and Reflection

Analysis

1. Chronic and Persistent Low Performance

Data analysis for two consecutive periods shows that this course consistently shows very low performance and far below the target of 80. In the Odd semester 2023/2024, the average score was already at a very low level (65), and this condition continued in the Odd semester 2024/2025 with an average score falling even further to level 54.

2. There is a worsening downward trend

In addition to chronically low performance, the data also shows a downward trend that is getting worse. Each CPL experienced a further decline in the last period. The most significant decline occurred in CPL-1, which fell more than 11 points from 64.16 to 52.84, indicating that problems in this course are increasingly escalating.

Reflection

1. Indication of Fundamental Problems in Course Design

Performance that is persistently very low and even continues to decline over two years reflects the high possibility that there is a very fundamental problem in the design or pedagogical approach of this course. These results indicate a serious misalignment between the level of difficulty of the material, students' prerequisite knowledge, and the teaching methods currently applied.

2. Urgent Need for Structural Intervention

This critical situation that continues to worsen reflects that minor adjustments or partial improvements will not be effective. This subject requires an urgent and comprehensive structural intervention. This should include a complete review of the syllabus, the addition of intensive learning support systems (such as mandatory tutorials), and possibly a complete change in evaluation methods to break the long-standing cycle of failure.

5. Follow-up Plan

Responding to the achievements in the Advanced Mathematics Course, which shows quite low CPL achievements. This step will focus on a total evaluation of the RPS, such as an evaluation of the learning methods or materials programmed each week. Simultaneously, intensive student support programs will be implemented, such as mandatory tutorials or additional response sessions, to bridge wide gaps in understanding. The main goal is to stop this downward trend immediately and rebuild the learning foundations of the course so that it can systematically raise student achievement from critical levels and start moving towards the expected targets.

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

Following the findings of the previous semester's evaluation for the Advanced Mathematics Course, which identified chronic and steadily declining low performance (from 65 in Odd 2023/2024 to 54 in Odd 2024/2025), a comprehensive structural intervention has been implemented. The plan centers on a fundamental review of course design, the introduction of mandatory intensive tutorial sessions to strengthen understanding of concepts, and an overhaul of the evaluation system to make it more supportive. A structural intervention is needed to break the cycle of persistent failure, and is recommended so that learning outcomes increase according to targets.

Makassar, 24 Oktober 2025

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