COURSE PORTFOLIO

Study Program	:	MATHEMATICS - S1
Semester	:	ODD 2024/2025
Course Code	:	23H01120703
Course Name	:	Introduction to Real Analysis
Coordinator	:	Jusmawati Massalesse, S.Si.,M.Si.
Lecturer Team Member	:	Naimah Aris, S.Si.,M.Math., Prof. Dr. Budi Nurwahyu, MS., Dr. Muh. Nur, S.Si., M.Si., Jusmawati Massalesse, 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
Introduction to Real Analysis A	Prof. Dr. Budi Nurwahyu, MS.	:	8 times	Number of students: 33 persons
	Dr. Muh. Nur, S.Si., M.Si.	:	8 times	Presence ≥ 80% : 27 persons (81.82 %)
	Total Meeting : 16 times.			Presence < 80% : 6 persons (18.18 %)
Introduction to Real B Analysis	Jusmawati Massalesse, S.Si.,M.Si.	:	8 times	Number of students: 43 persons
	Naimah Aris, S.Si.,M.Math.	:	8 times	Presence ≥ 80% : 40 persons (93.02 %)
	Total Meeting : 16 times.			Presence < 80% : 3 persons (6.98 %)

Materials/practicum provided

1. Real Number System: Algebraic Properties, Sequence Properties and Completeness Properties of Numbers Real.
2. Topology: Open Sets, Closed Sets and Their Properties
3. Real Number Sequences
4. Function Limits
5. Continuity

The learning methods implemented

Meeting 1

Lecture: Cooperative learning (Cooperative learning) 3 x 50 minutes

2-4 Meetings

Lecture: Learning collaborative (Collaborative Learning)

Learning activities: Lecture, work task. learn to be independent by reading references that have been given. TM: 2x3x50; PT: 2x3x60; BM: 2x3x50;

5-6 Meetings

Lecture: Learning collaborative (Collaborative Learning)

Learning Activities: Studying, doing task. learn to be independent for Quiz preparation. TM: 2x3x50; PT: 2x3x60; BM: 2x3x50.

7-8 Meetings

Lecture: Learning collaborative (Collaborative Learning)

Learning Activities: Studying, doing assignments. self-study for Mid test preparation. TM: 2x3x50; PT: 2x3x60; BM: 2x3x50.

9-10 Meetings

Lecture: Case Study (Case Study)

Learning Activities: College, student read that reference given and discussed with his group about that case given. TM: 2x3x50; PT: 2x3x60; BM: 2x3x50.

11-13 Meeting

Lecture: Case Study (Case Study)

Learning Activities: College, student read that reference given and discussed with his group about that case given. TM: 3x3x50; PT: 3x3x60; BM: 3x3x50.

14-16 Meeting

Lecture: Case Study (Case Study)

Learning Activities: College, student read the references as well discuss with group about the case which are given. TM: 3x3x50; PT: 3x3x60; BM: 3x3x50.

The assessment method implemented

1. Quiz
2. Case Studies
3. Final Test
4. Mid Test
5. 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)
ILO 1	CLO-1	Independent Assignment	10.00 %	8.22
ILO 1	CLO-1	Quiz	15.00 %	7.30
ILO 1	CLO-1	Independent Assignment	5.00 %	4.42
ILO 1	CLO-1	Mid Test	20.00 %	9.62
ILO 1	CLO-1	Mid Test	20.00 %	59.98
ILO 1	CLO-1	Quiz	15.00 %	67.35
ILO 1	CLO-1	Independent Assignment	15.00 %	74.88
ILO 1	CLO-1	Final Test	20.00 %	9.45
P2	CLO-2	Case Studies	30.00 %	80.95
P2	CLO-2	Case Studies	10.00 %	54.77
P2	CLO-2	Mid Test	20.00 %	59.98
P2	CLO-2	Final Test	20.00 %	9.45
P2	CLO-2	Independent Assignment	10.00 %	7.82
P2	CLO-2	Quiz	15.00 %	11.04
P2	CLO-2	Independent Assignment	5.00 %	4.35
P2	CLO-2	Mid Test	20.00 %	9.62
KU1	CLO-3	Independent Assignment	10.00 %	7.82
KU1	CLO-3	Independent Assignment	5.00 %	4.35
KU1	CLO-3	Mid Test	20.00 %	59.98
KU1	CLO-3	Mid Test	20.00 %	9.62
KU1	CLO-3	Case Studies	10.00 %	54.77
KU1	CLO-3	Quiz	15.00 %	9.17

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]

CLO	% of students who achieved a CLO score of at least 80
(data source: student scores per assessment according to CLOs)	
CLO-1	7.89%
CLO-2	15.79%
CLO-3	9.21%

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.
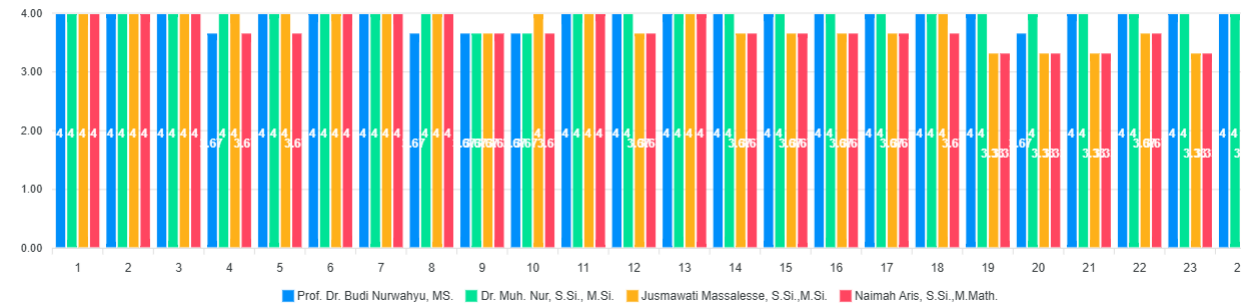
Course Grade

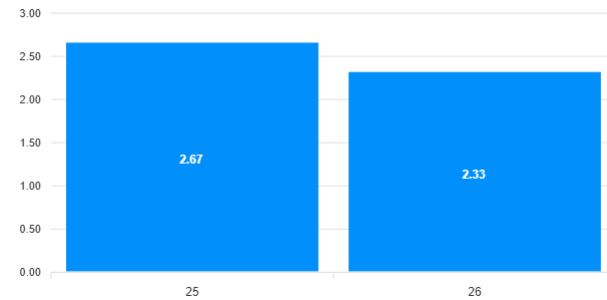| Course Grade	Number and Percentage of Students
A	8 (10.5%)
A-	10 (13.2%)
B+	10 (13.2%)
B	13 (17.1%)
B-	12 (15.8%)
C+	9 (11.8%)
C	5 (6.6%)
D	1 (1.3%)
E	8 (10.5%)

3. Learning evaluation (survey) results

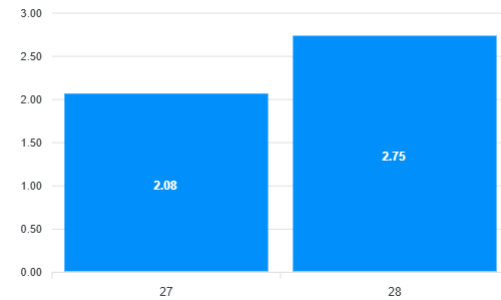*(data source: items / narratives of the results of the MK evaluation questionnaire by students)*

Grafik Kuisioner Pembelajaran Matakuliah Pengantar Analisis Riil

Legend: ■ Prof. Dr. Budi Nurwahyu, MS. ■ Dr. Muh. Nur, S.Si., M.Si. ■ Jusmawati Massalesse, S.Si.,M.Si. ■ Naimah Aris, S.Si.,M.Math.

Grafik Kuisioner Pembelajaran

Grafik Kuisioner Pembelajaran

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 pemahama 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 Metho

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 ditetapka

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 berr 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 me 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 d 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 h khusus untuk matakuliah ini

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

Grafik CPL MK (Pengantar Analisis Riil)
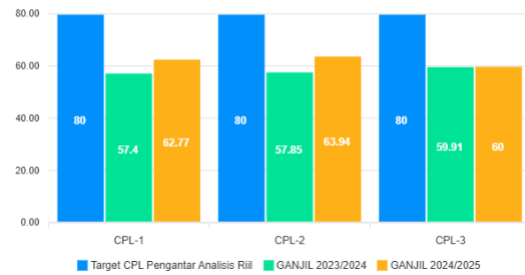
Hasil Pengukuran CPL MK Pengantar Analisis Riil

4. Analysis and Reflection

Analysis and Reflection

Analysis

1. Chronic and Consistent Low Performance

Data analysis for two consecutive periods shows that this course consistently shows very low performance and is far below the target of 80. In the Odd semester 2023/2024, the average score was at the level of 58, and in the Odd semester 2024/2025, although there was a slight increase, the average score was still at a very low level, namely 62.

2. Uneven Minor Improvements and Stagnation

Even though in general there is a slight improvement trend, the increase is not evenly distributed. CPL-1 and CPL-2 show a small increase of around 5-6 points. However, CPL-3 showed a state of stagnation, where its performance almost did not change at all (from 59.91 to 60.00), indicating no significant improvement in this area.

Reflection

1. Indication of Fundamental Problems in Course Design

Chronically very low performance over two years reflects the possibility of a very fundamental problem in the design or pedagogical approach of this course. Considering that "Real Analysis" is a very abstract course, these results may indicate a misalignment between the level of difficulty of the material, student knowledge prerequisites, and the teaching methods currently applied.

2. Need for Structural Intervention, Not Just Adjustments

There are very minor improvements to CPL-1 & 2 as well as total stagnation in CPL-3 reflect that the minor adjustments that may have been made have not been effective enough. This course requires a more comprehensive structural intervention, not just a partial repair. This could take the form of an overhaul of the syllabus, the addition of intensive tutorial or response sessions, or a complete change in evaluation methods to solve the problem of persistent learning difficulties.

5. Follow-up Plan

Responding to the CPL achievements of the Introduction to Real Analysis course which are consistently far below the target even though they show slight improvement. This needs to include adding hours of tutorials or intensive responses to strengthen understanding of abstract concepts and implementing more frequent formative assessment systems, such as weekly quizzes, to ensure gradual mastery of the material and provide early intervention. Special attention will be given to CPL-3 which shows stagnation, with the main aim of systematically improving the foundation of student understanding and raising the average score significantly and sustainably so that it can approach the expected achievement targets.

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

Following up on the findings of the previous semester's evaluation for the Introduction to Real Analysis course. The results in the Even semester 2024/2025 showed significant improvements, where the average achievement was raised substantially from level 57 to 64. This success proves that structural and supportive interventions are very effective for difficult basic courses, so it is recommended that this new framework be maintained permanently.

Makassar, 24 Oktober 2025

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