COURSE PORTFOLIO

Study Program	:	MATHEMATICS - S1
Semester	:	ODD 2024/2025
Course Code	:	23H01120503
Course Name	:	Numerical Methods
Coordinator	:	Prof. Agustinus Ribal, S.Si.,M.Sc., Ph. D
Lecturer Team Member	:	Prof. Agustinus Ribal, S.Si.,M.Sc., Ph. D, Prof. Dr. Syamsuddin Toaha, M.Sc.

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
Numerical Method B	Prof. Dr. Syamsuddin Toaha, M.Sc.	:	8 times	Number of students: 32 persons
	Prof. Agustinus Ribal, S.Si.,M.Sc., Ph. D	:	8 times	Presence ≥ 80% : 31 persons (96.88 %)
	Total Meeting : 16 times.			Presence < 80% : 1 person (3.12 %)
Numerical Methods A	Prof. Dr. Syamsuddin Toaha, M.Sc.	:	8 times	Number of students: 44 persons
	Prof. Agustinus Ribal, S.Si.,M.Sc., Ph. D	:	8 times	Presence ≥ 80% : 42 persons (95.45 %)
	Total Meeting : 16 times.			Presence < 80% : 2 persons (4.55 %)

Materials/practicum provided

1. Error Transmission
2. Roots of Non-Linear Equations,
3. Systems of Linear Equations
4. Interpolation
5. Numerical Derivatives
6. Numerical Differential Equations
7. Numerical Integrals

The learning methods implemented

Meeting 1

Lecture: Group discussion (Small Group Discussion)

TM:3x2x50

2-4 Meetings

Lecture: Group discussion (Small Group Discussion)

TM:3x2x50

Meetings 5-7

Lecture: Group discussion (Small Group Discussion)

TM:3x2x50

Meeting 8

Midterm Exam

Meeting 9-10

Lecture: Group discussion (Small Group Discussion)

TM:2x2x50

Meeting 11

Lecture: Group discussion (Small Group Discussion)

TM:1x2x50

12-13 Meeting

Lecture: Group discussion (Small Group Discussion)

TM:2x2x50

14-15 Meeting

Lecture: Group discussion (Small Group Discussion)

TM:2x2x50

Meeting 16

Midterm Exam

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)
P2	CLO-1	Case Studies	15.00 %	8.41
P2	CLO-1	Case Studies	5.00 %	3.34
P2	CLO-1	Case Studies	10.00 %	7.39
P2	CLO-1	Final Test	25.00 %	14.26
P2	CLO-1	Mid Test	25.00 %	11.60
P2	CLO-2	Case Studies	5.00 %	3.49
P2	CLO-2	Mid Test	25.00 %	11.60
P2	CLO-2	Final Test	25.00 %	14.26
P2	CLO-2	Case Studies	10.00 %	3.69
P2	CLO-3	Final Test	25.00 %	14.26
P2	CLO-3	Case Studies	10.00 %	5.54
P2	CLO-3	Case Studies	15.00 %	8.41
P2	CLO-3	Mid Test	25.00 %	11.60
P2	CLO-3	Case Studies	5.00 %	3.39
P2	CLO-4	Final Test	25.00 %	14.26
P2	CLO-4	Case Studies	10.00 %	5.54
P2	CLO-4	Case Studies	15.00 %	8.41
P2	CLO-4	Case Studies	5.00 %	3.39
P2	CLO-4	Mid Test	25.00 %	11.60
KU1	CLO-1	Case Studies	10.00 %	7.39
KU1	CLO-1	Final Test	25.00 %	14.26
KU1	CLO-1	Case Studies	5.00 %	3.34
KU1	CLO-1	Case Studies	15.00 %	8.41
KU1	CLO-1	Mid Test	25.00 %	11.60
KU1	CLO-2	Case Studies	10.00 %	3.69
KU1	CLO-2	Mid Test	25.00 %	11.60
KU1	CLO-2	Case Studies	5.00 %	3.49
KU1	CLO-2	Final Test	25.00 %	14.26
KK2	CLO-3	Case Studies	15.00 %	8.41
KK2	CLO-3	Case Studies	5.00 %	3.39
KK2	CLO-3	Mid Test	25.00 %	11.60
KK2	CLO-3	Case Studies	10.00 %	5.54
KK2	CLO-3	Final Test	25.00 %	14.26
KK3	CLO-4	Case Studies	10.00 %	5.54
KK3	CLO-4	Case Studies	15.00 %	8.41

LOs that are charged to the Course	CLO	Assessment Form	Weight	Average student score (0-100)
KK3	CLO-4	Final Test	25.00 %	14.26
KK3	CLO-4	Case Studies	5.00 %	3.39
KK3	CLO-4	Mid Test	25.00 %	11.60
S2	CLO-2	Case Studies	10.00 %	3.69
S2	CLO-2	Final Test	25.00 %	14.26
S2	CLO-2	Mid Test	25.00 %	11.60
S2	CLO-2	Case Studies	5.00 %	3.49

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	11.84%
CLO-2	10.53%
CLO-3	10.53%
CLO-4	10.53%

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.
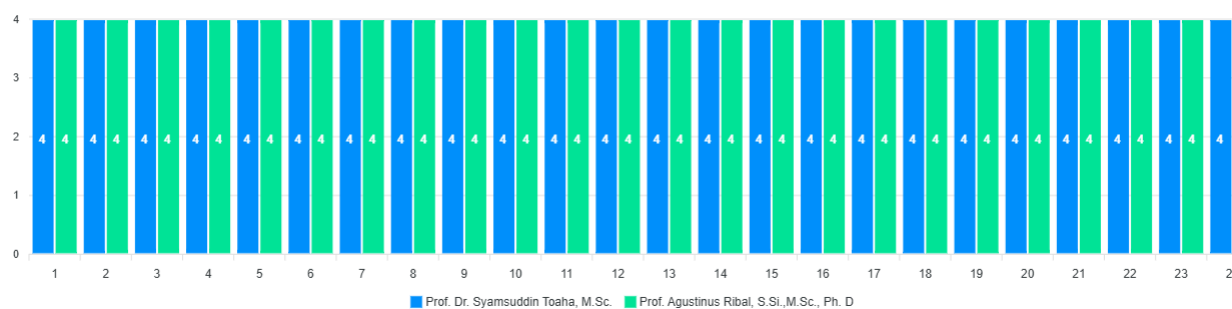
Course Grade

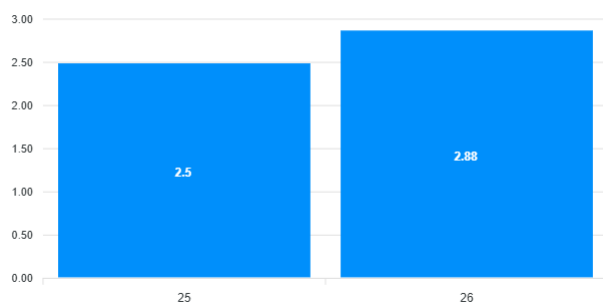| Course Grade	Number and Percentage of Students
A	7 (9.2%)
A-	1 (1.3%)
B+	5 (6.6%)
B	12 (15.8%)
B-	5 (6.6%)
C+	5 (6.6%)
C	25 (32.9%)
D	2 (2.6%)
E	14 (18.4%)

3. Learning evaluation (survey) results

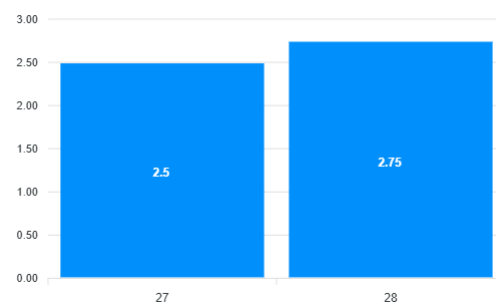*(data source: items / narratives of the results of the MK evaluation questionnaire by students)*

Grafik Kuisioner Pembelajaran Matakuliah Metode Numerik

Grafik Kuisioner Pembelajaran

Grafik Kuisioner Pembelajaran

Informasi Pertanyaan Kuisioner

1. Dosen Menyampaikan Rancangan Pembelajaran Semester (RPS) dan Kontrak Perkuliahan di awal Perkuliahan dengan Jelas
4. Dosen menjelaskan materi dengan baik dan jelas
7. Dosen Memberikan Penilaian dengan jelas dan sesuai dengn kontrak perkuliahan yang telah disepakati
10. Matakuliah yang diberikan menstimulasi kemampuan intelektual saya
13. Jadwal matakuliah telah diinformasikan di SIM secara jelas sebelum perkuliahan dimulai
16. Dosen menyelesaikan perkuliahan tepat waktu sesuai dengan jadwal kuliah yang telah ditetapkan
19. Selama Kualiah daring, fasilitas perkuliahan cukup memadai
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)
25. Rata-rata Waktu Efektif (dalam menit) yang anda habiskan dalam seminggu (di luar jam perkuliahan)untuk menyelesaikan tugas terstrukturpada matakuliah ini
28. Alokasi waktu yang digunakan untuk menyelesaikan tugas yang diberikan matakuliah ini

2. Dosen Menjalankan Proses Pembelajaran yang berpusat pada mahasiswa (Student Centered Learning)
5. Dosen memberikan materi setiap minggu sesuai dengan Rancangan Pembelajaran Semester (RPS) matakuliah
8. Dosen memberikan umpan balik dengan memberikan komentar secara lengkap
11. Tingkat kehadiran saya dalam matakuliah ini sangat tinggi (lebih dari 80% pertemuan)
14. Dosen memberikan kuliah sesuai dengan jadwal kuliah yang telah ditetapkan
17. Tersedia buku acuan/modul/ringkasan materi/slide matakuliah untuk semua materi yang diberikan
20. Saya menggunakan SIKOLA sebagai wadah pembelajaran
23. Saya menggunakan SIKOLA sebagai wadah pembelajaran
26. Rata-rata Waktu Efektif (dalam menit) yang anda habiskan dalam seminggu (di luar jam perkuliahan) unuk belajar mandiri pada matakuliah ini

3. Dosen Menyiapakan materi Pemebelajaran dan sumber daya pensukung pwmbelajaran (diktat, slide, kasus, tugas, bahan ujian, dsb)
6. Dosen mempunyai kepedulian dan membantu mahasiswa dalam pemahaman penguasaan suatu materi
9. Saya memahami materi kuliah setelah menyelesaikan perkuliahan ini
12. Dosen menggunakan lebih dari satu metode penilaian (Assessment Methc
15. Dosen hadir tepat waktu sesuai dengan jadwal kuliah yang telah ditetapka
**18.** Buku acuan/modul/ringkasan materi/slide matakuliah yang diberikan berr dan uptodate dangan perkembangan yang ada
21. Layanan Perpustakaan Prodi/Departemen/Fakultas/Universitas sangat me dalam proses pembelajaran
24. Layanan Perpustakaan Prodi/Departemen,Universitas sangat membantu c proses pembelajaran
27. Dibandingkan dengan matakuliah yang lainnya, jumlah waktu yang anda h khusus untuk matakuliah ini

Grafik ILO MK (Metode Numerik)
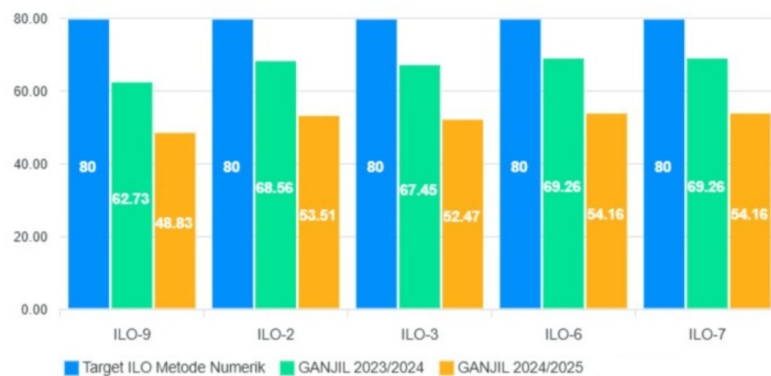
Hasil Pengukuran CPL MK Metode Numerik

4. Analysis and Reflection

Analysis and reflection

The distribution of grades in the course **Numerical Methods** shows a trend that needs attention. A total of **25 students (32.9%) obtained a C grade**, and **14 students (18.4%) did not pass (E grade)**. Meanwhile, only **8 students (10.5%) managed to achieve A and A-** , and the rest were spread across the B to D range.

Reflection:

- The high number of students with grades **low to not passing** indicates that many students experience **difficulty in understanding basic concepts and applying numerical methods**, especially those related to algorithms, programming, and the application of numerical analysis to real problems.

- This course does require strong mathematical understanding and logical abilities, as well as technical skills such as the use of software or programming languages (for example MATLAB or Python), which most students may not have fully mastered.

- Learning methods that are too theoretical or have minimal practical training can be factors that contribute to low learning outcomes.

- A learning approach that is more applicable, gradual, and involves more structured practice and active mentoring is needed.

5. Follow-up Plan

1. **Mentoring Intensive for Students with Low Grades**
   Organizing additional tutorial sessions regularly outside lecture hours, especially for students with grades C and below, to discuss basic concepts and in-depth practice questions.
2. **Improvement Computational Practice and Simulation Components**
   Strengthen practical aspects through the use of software (e.g MATLAB) directly, so students can connect theory with real applications.

3. **Application Tiered and Progressive Evaluation**
   Develop an evaluation system that includes weekly quizzes, assignments individual/group, as well as small projects so that students get used to implementing them material on an ongoing basis and not just depend on the final exam.
4. **Usage Independent Modules and Learning Videos**
   Provides learning modules arranged in stages and explanatory videos concepts/methods that can be accessed independently by students as additional study materials.
5. **Mapping Student Difficulties**
   Conduct weekly surveys or reflections on the material considered difficult, then adjust the emphasis or teaching methods based on students' actual needs.
6. **Collaboration with Outstanding Students**
   Encourage the formation of study groups that involve students high marks for guiding his colleagues in a good learning atmosphere more informal and supportive.

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

Following up on evaluation findings in the previous period which identified an intervention plan centered on changing the RPS confirmed its effectiveness, so it was recommended that it be established as a permanent standard to maintain consistent quality in the future.

Makassar, 15 Oktober 2025

Prof. Agustinus Ribal, S.Si.,M.Sc., Ph. D
NIP 197508161999031001