COURSE PORTFOLIO

Study Program	:	MATHEMATICS - S1
Semester	:	ODD 2024/2025
Course Code	:	23H01130803
Course Name	:	Control Theory
Coordinator	:	Dr. Firman, S.Si.,M.Si.
Lecturer Team Member	:	Prof. Dr. Syamsuddin Toaha, M.Sc., Dr. Firman, 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
Control Theory	Prof. Dr. Syamsuddin Toaha, M.Sc.	:	8 times	Number of students: 14 persons Presence ≥ 80% : 12 persons (85.71 %) Presence < 80% : 2 persons (14.29 %)
	Dr. Firman, S.Si.,M.Si.	:	8 times	
	Total Meeting : 16 times.			

Materials/practicum provided

1. A state space representation of a scalar differential equation
2. Transformation of state space equations into scalar differential equations
3. Solution of the state space equation
4. Control and observation of the linear control system (Control and observation of the linear control system)
5. Stability analysis of linear systems and nonlinear systems (Stability analysis of linear and nonlinear systems)
6. linearization of input-output in nonlinear control systems (input-output linearization in nonlinear control systems)
7. optimal control based on the calculus of variations (optimal control based on the calculus of variations)
8. The Pontryagin Principle

The learning methods implemented

Meeting 1

Lecture: Other methods

TM:1X3X50

2-4 Meetings

Lecture: Case Study (Case Study), Other methods

TM:3X3X50

Meeting 5

Lecture: Cooperative learning (Cooperative learning)

TM:1X3X50

Meeting 6-7

Lecture: Case Study (Case Study)

TM:2X3X50

Meeting 8

Other Forms: Other methods

TM:1X3X50

9-10 Meeting

Lecture: Case Study (Case Study)

TM:2X3X50

11-12 Meeting

Lecture: Case Study (Case Study)

TM:2X3X50

13-15 Meeting

Lecture: Based Learning Project (Project-based Learning)

TM:3X3X50

Meeting 16

Other Forms: Other methods

TM:1X3X50

The assessment method implemented

1. Case Studies
2. Presentation
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	Case Studies	10.00 %	7.61
ILO 1	CLO-1	Independent Assignment	10.00 %	7.93
ILO 1	CLO-1	Mid Test	15.00 %	12.43
ILO 1	CLO-2	Final Test	15.00 %	9.73
ILO 1	CLO-2	Case Studies	15.00 %	11.47
ILO 1	CLO-2	Mid Test	15.00 %	12.43
ILO 1	CLO-2	Presentation	5.00 %	3.98
ILO 1	CLO-2	Case Studies	10.00 %	7.75
P2	CLO-2	Presentation	5.00 %	3.98
P2	CLO-2	Final Test	15.00 %	9.73
P2	CLO-2	Mid Test	15.00 %	12.43
P2	CLO-2	Case Studies	15.00 %	11.47
P2	CLO-2	Case Studies	10.00 %	7.75
P2	CLO-3	Mid Test	15.00 %	12.43
P2	CLO-3	Case Studies	15.00 %	11.47
P2	CLO-3	Case Studies	10.00 %	8.07
P2	CLO-3	Final Test	15.00 %	9.73
KU1	CLO-2	Presentation	5.00 %	3.98
KU1	CLO-2	Final Test	15.00 %	9.73
KU1	CLO-2	Case Studies	15.00 %	11.47
KU1	CLO-2	Mid Test	15.00 %	12.43
KU1	CLO-2	Case Studies	10.00 %	7.75
KU1	CLO-4	Case Studies	10.00 %	8.07
KU1	CLO-4	Mid Test	15.00 %	12.43
KU1	CLO-4	Final Test	15.00 %	9.73
KU1	CLO-4	Case Studies	15.00 %	11.47
KK2	CLO-3	Final Test	15.00 %	9.73
KK2	CLO-3	Case Studies	10.00 %	8.07
KK2	CLO-3	Case Studies	15.00 %	11.47
KK2	CLO-3	Mid Test	15.00 %	12.43
KK2	CLO-4	Case Studies	15.00 %	11.47
KK2	CLO-4	Case Studies	10.00 %	8.07
KK2	CLO-4	Mid Test	15.00 %	12.43
KK2	CLO-4	Final Test	15.00 %	9.73

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	71.43%
CLO-2	64.29%
CLO-3	64.29%
CLO-4	64.29%

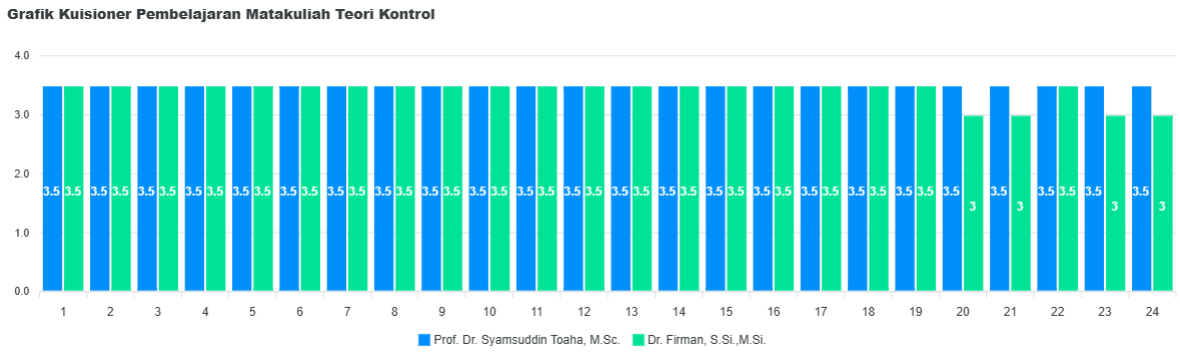
b: result criteria: very satisfactory if ≥80% of students score ≥80; satisfactory if 70%-79.9% of students score ≥80; less satisfactory if < 70% of students score ≥80.

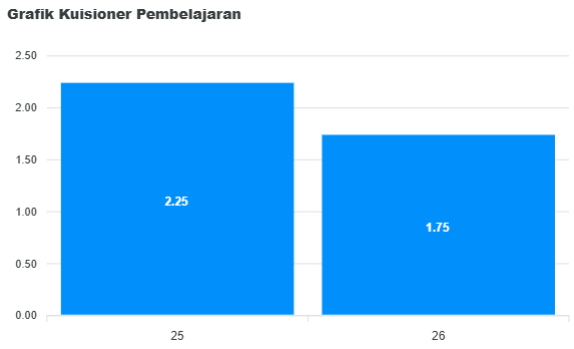
Course Grade

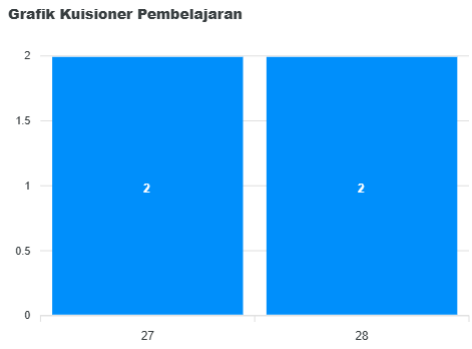
Course Grade	Number and Percentage of Students
A	7 (50.0%)
A-	1 (7.1%)
B+	3 (21.4%)
B	2 (14.3%)
B-	0 (0.0%)
C+	0 (0.0%)
C	0 (0.0%)
D	0 (0.0%)
E	1 (7.1%)

3. Learning evaluation (survey) results

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







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:

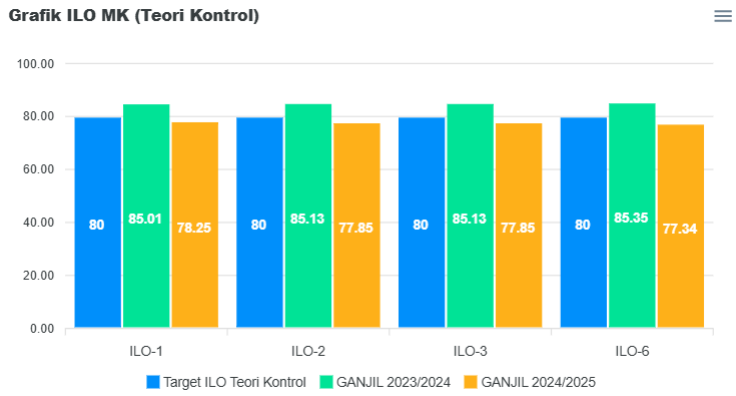
- 3 : Lebih Banyak
- 2 : Sama
- 1 : Lebih Sedikit

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 Menyiapkan 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 pemaham 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 ditetapk
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 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



Hasil Pengukuran CPL MK Teori Kontrol

4. Analysis and Reflection

Analysis and Reflection

Analysis

1. Mild but Consistent Decrease in Performance

Data analysis shows that there is a mild but consistent decline in performance in all measured Graduate Learning Outcomes (CPL). The performance of courses which in the Odd 2023/2024 period was very superior with an average score of 85 (exceeding the target of 80), in the Odd 2024/2025 period fell to the score range of 77-78, which is now slightly below the target.

2. Uniform Decline Pattern in All CPLs

The decline that occurred had a very uniform pattern, where each CPL experienced a decline of around 7-8 points. This uniformity is an important finding, because it indicates that the cause of the decline is most likely a systemic factor that has an even impact on all aspects of learning, rather than a problem on a specific topic.

Reflection

1. Need for Proactive Intervention to Restore Excellent Standards

While current performance is still relatively good, this clear downward trend reflects an early warning signal that needs to be responded to proactively. This is a crucial moment to intervene before the decline continues further. The goal is not to correct "failures," but rather to return the course to the standard of excellence it achieved in the previous year.

2. The Importance of Comparative Analysis to Find Key Factors

Because this course was once very successful, the most logical reflection is that the solution for improvement lies in past implementation. Therefore, the most effective follow-up step is to carry out a careful comparative analysis between the implementation of the 2023/2024 and 2024/2025 semesters. By identifying small but impactful changes (e.g. in teaching methods, topic emphasis, or evaluation structure), we can rediscover the "success factors" that need to be reapplied.

5. Follow-up Plan

Responding to the decline in CPL achievements in the Control Theory Course from a level above the target in 2023/2024 to slightly below the target in 2024/2025. This investigation will review differences in material delivery methods, emphasis on certain topics, and evaluation structures that may contribute to uniform performance declines across all CPLs. The aim is to rediscover and reapply successful elements from previous implementations, so that student learning outcomes can be pushed back to consistently exceed the target of 80 in the following semester.

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

Following up on the findings of the previous semester's evaluation for the Control Theory Course, which showed a mild but consistent decline in performance from a superior level (average 85 in Odd 2023/2024) to a level slightly below target (average 78 in Odd 2024/2025), a follow-up plan focusing on comparative analysis and optimization has been implemented. This strategy involves identifying key changes in teaching and evaluation methods between the two periods, to then reapply successful elements from the previous period. Improvements need to be made in the next academic year by implementing the follow-up actions implemented.

Makassar, 15 Oktober 2025

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