# COURSE PORTFOLIO

| | | |
|---|---|---|
| Study Program | : | MATHEMATICS - S1 |
| Semester | : | EVEN 2024/2025 |
| Course Code | : | 23H01110503 |
| Course Name | : | Discrete Mathematics |
| Coordinator | : | Prof. Dr. Nurdin, S.Si., M.Si. |
| Lecturer Team Member | : | Prof. Dr. Nurdin, S.Si., M.Si., Prof. Dr. Hasmawati, 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 |
|---|---|---|
| Discrete Mathematics A | Prof. Dr. Hasmawati, M.Si. : 8 times<br>Prof. Dr. Nurdin, S.Si., M.Si. : 8 times<br><br>Total Meeting : 16 times. | Number of students: 47 persons<br><br>Presence ≥ 80% : 44 persons (93.62 %)<br>Presence < 80% : 3 persons (6.38 %) |
| Discrete Mathematics B | Prof. Dr. Hasmawati, M.Si. : 8 times<br>Prof. Dr. Nurdin, S.Si., M.Si. : 8 times<br><br>Total Meeting : 16 times. | Number of students: 45 persons<br><br>Presence ≥ 80% : 45 persons (100.00 %)<br>Presence < 80% : 0 person (0.00 %) |

**Materials/practicum provided**

Basics of Counting, Generating Functions, Recurrence Relations, Introduction to Graph Theory

**The learning methods implemented**

Discovery Learning, Self-Directed Learning, Case Study

**The assessment method implemented**

1. Quiz
2. Project Report
3. Case Studies
4. Project Based
5. Mid 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 | Quiz | 15.00 % | 34.11 |
| ILO 1 | CLO-1 | Mid Test | 20.00 % | 45.49 |

| LOs that are charged to the Course | CLO | Assessment Form | Weight | Average student score (0-100) |
|---|---|---|---|---|
| ILO 1 | CLO-1 | Project Report | 35.00 % | 85.21 |
| ILO 1 | CLO-1 | Case Studies | 5.00 % | 86.13 |
| P2 | CLO-2 | Quiz | 15.00 % | 34.11 |
| P2 | CLO-2 | Project Based | 15.00 % | 80.05 |
| P2 | CLO-2 | Mid Test | 20.00 % | 45.49 |
| P2 | CLO-2 | Quiz | 10.00 % | 90.75 |
| P2 | CLO-2 | Project Report | 35.00 % | 85.21 |
| KU1 | CLO-3 | Project Based | 15.00 % | 80.05 |
| KU1 | CLO-3 | Mid Test | 20.00 % | 45.49 |
| KU1 | CLO-3 | Quiz | 10.00 % | 90.75 |
| KU1 | CLO-3 | Project Report | 35.00 % | 85.21 |

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 | 18.48% |
| CLO-2 | 25.00% |
| CLO-3 | 44.57% |

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 | 14 (15.2%) |
| A- | 10 (10.9%) |
| B+ | 13 (14.1%) |
| B | 18 (19.6%) |
| B- | 13 (14.1%) |
| C+ | 7 (7.6%) |
| C | 9 (9.8%) |
| D | 4 (4.3%) |
| E | 4 (4.3%) |

**3. Learning evaluation (survey) results**

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

Hasil Evaluasi pembelajaran mata kuliah matematika diskrit

**Grafik Kuisioner Pembelajaran Matakuliah Matematika Diskrit**

Bar chart values (Prof. Dr. Hasmawati, M.Si. / Prof. Dr. Nurdin, S.Si., M.Si.) for questions 1–24:
3.55, 3.84, 3.63, 3.74, 3.68, 3.74, 3.61, 3.6, 3.37, 3.74, 3.71, 3.57, 3.61, 3.6, 3.66, 3.55, 3.4, 3.34, 3.43, 3.58, 3.74, 3.75, 3.56, 3.68, 3.63, 3.6, 3.39, 3.66, 3.22, 3.45, 3.71, 3.74, 3.71, 3.69, 3.66, 3.4, 3.66, 3.59, 3.69, 3.5, 3.52, 3.37, 3.5, 3.37, 3.55, 2.42, 2.44

Axis labels: 4.00, 3.00, 2.00, 1.00, 0.00 — categories 1 to 24

Legend: ■ Prof. Dr. Hasmawati, M.Si. ■ Prof. Dr. Nurdin, S.Si., M.Si.

**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
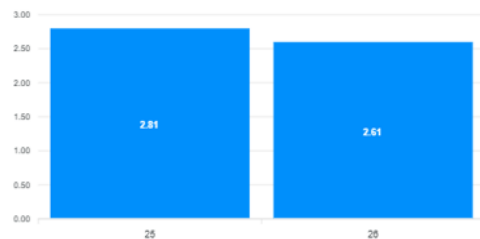- 2 : 60 menit < WE <=120 menit
- 1 : t:WE <= 60 menit

Pertanyaan 27:
- 3 : Lebih Banyak
- 2 : Sama
- 1 : Lebih Sedikit

Pertanyaan 28:
- 3 : Sama
- 2 : Cukup Sesuai
- 1 : Kurang Sesuai

**Grafik Kuisioner Pembelajaran**

Bar values: 25 → 2.81, 26 → 2.61

**Grafik Kuisioner Pembelajaran**

Bar values: 27 → 2.02, 28 → 2.64
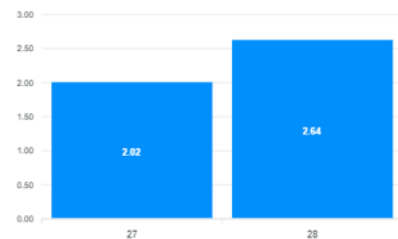
**Informasi Pertanyaan Kuisioner**

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 Kuliah daring, fasilitas perkuliahan cukup memadai
22. Beban sks matakuliah ini sudah sesuai dengan kompetensi yang akan dicapai (Catatan : 1 sks setara dengan 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 terstruktur pada 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 dapat mengakses fasilitas internet ketika saya membutuhkan
23. Saya menggunakan SIKOLA sebagai wadah pembelajaran
26. Rata-rata Waktu Efektif (dalam menit) yang anda habiskan dalam seminggu (di luar jam perkuliahan) untuk belajar mandiri pada matakuliah ini

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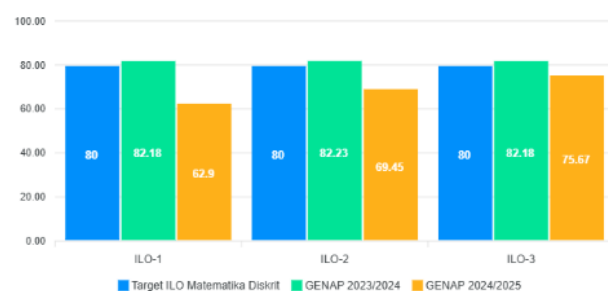12. Dosen menggunakan lebih dari satu metode penilaian (Assessment Method)
15. Dosen hadir tepat waktu sesuai dengan jadwal kuliah yang telah ditetapkan
18. Buku acuan/modul/ringkasan materi/slide matakuliah yang diberikan bermanfaat dan uptodate dangan perkembangan yang ada
21. Layanan Perpustakaan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

## Hasil Pengukuran CPL Mata Kuliah Matematika Diskrit

**Grafik ILO MK (Matematika Diskrit)**

Bar chart values:
- ILO-1: Target 80, GENAP 2023/2024 = 82.18, GENAP 2024/2025 = 62.9
- ILO-2: Target 80, GENAP 2023/2024 = 82.23, GENAP 2024/2025 = 69.45
- ILO-3: Target 80, GENAP 2023/2024 = 82.18, GENAP 2024/2025 = 75.67

Legend: ■ Target ILO Matematika Diskrit ■ GENAP 2023/2024 ■ GENAP 2024/2025

### 4. Analysis and Reflection

Analysis

1. Significant and Comprehensive Decreased Performance

Data shows a significant decline in performance on all measured Graduate Learning Outcomes (CPL). The performance of courses which in the EVEN 2023/2024 period was very good with an average score of 82 (exceeding the target of 80), dropped in the EVEN 2024/2025 period to a score range of 62 to 76, which is all below the target.

2. Unequal Rate of Decline between CPLs

The decline that occurred was not uniform in all areas. ILO-1 experienced the most severe and critical decline, falling almost 20 points from 82.18 to 62.9. ILO-2 also experienced a very significant decline of 13 points, while ILO-3 experienced the gentlest decline, namely around 6.5 points.

Reflection

1. Localized Problems on Certain Topics

The varying levels of reduction reflect that the problems that occur are most likely not general in nature, but rather localized to certain topics or evaluation methods. The most severe failures in ILO-1 and ILO-2 indicate that these two areas should be the main focus of investigation and improvement, because that is where students' greatest difficulties lie in the last period.

2. The existence of Internal Good Practices as a Potential Solution

Even though it is decreasing, the relatively stronger performance of ILO-3 (score 76) compared to others is an important reflection. This indicates the existence of more effective or robust teaching or evaluation practices in that area. This relative success in ILO-3 can be used as a starting point for improvement, by analyzing what worked there and then adapting it to address critical weaknesses in ILO-1 and ILO-2.

**5. Follow-up Plan**

Improvement strategies that focus on material evaluation and Teaching strategies aim to improve the quality of learning overall comprehensive. By reviewing difficult topics, especially in ILO-1 and ILO-2, lecturers can identify areas that need more attention. Besides that, integrating the Problem-Based Learning (PBL) method will encourage students to be more active and critical in solving real problems that are relevant to Discrete Mathematics. This approach not only tests theoretical understanding, but also trains analytical thinking skills, collaboration and independence. Thus, the material is not only understood conceptually, but also can be applied in a practical context.

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

Following the findings of the previous semester's evaluation for the Discrete Mathematics Course, which identified a decline in variable achievement with ILO-1 as the main weak point (down to 62.9), a targeted improvement strategy has been implemented. This strategy involves fundamental revisions to modules and assessments for ILO-1, strengthening supporting materials for ILO-2, as well as optimizing methods that are already solid in ILO-3. A diagnostic approach that differentiates solutions according to the root of the problem in each CPL is very effective and is recommended to become a standard in continuous evaluation cycles.

Makassar, 17 Oktober 2025

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