

Mata Kuliah Course	Nama MK <i>Name</i>	: Aljabar Linier dan Struktur Diskrit : <i>Linear Algebra and Discrete Structures</i>
	Kode MK <i>Code</i>	: EE184201
	Kredit <i>Credits</i>	: 3 sks
	Semester <i>Semester</i>	: II (Wajib) : <i>II (Compulsory)</i>
	Beban Belajar <i>Workload</i>	Kuliah : 3 x 50 = 150 menit/minggu Latihan/tugas : 3 x 60 = 180 menit/minggu Belajar mandiri : 3 x 60 = 180 menit/minggu : <i>Lectures : 3 x 50 = 150 min/week</i> <i>Exercises/Assignments : 3 x 60 = 180 min/week</i> <i>Self learning : 3 x 60 = 180 min/week</i>
	Tingkatan <i>Module Level</i>	: Sarjana (S1) : <i>Undergraduate</i>
	Penanggung Jawab <i>PIC</i>	: Dr. Ir. Totok Mujiono, MI.Kom.
	Pengajar <i>Lecturer</i>	: Dr. Ir. Totok Mujiono, MI.Kom.
	Bahasa <i>Language</i>	: Bahasa Indonesia dan Bahasa Inggris : <i>Bahasa Indonesia and English</i>
	Persyaratan dan Peraturan <i>Requirement and Regulation</i>	Setiap mahasiswa harus menghadiri setidaknya 75% dari jumlah perkuliahan untuk dapat mengikuti ujian : <i>A student must have attended at least 75% of the lectures to sit in the exams</i>

Deskripsi Mata Kuliah

Description of Course

Mata kuliah Aljabar Linier dan Struktur Diskrit merupakan mata kuliah dasar matematika yang membahas mengenai Sistem Persamaan Linier, Matriks, Determinan, Vektor, Eigen Value & Eigen Vector, serta Konsep dasar dari Matematika diskrit. Mata kuliah ini memiliki prasyarat Matematika I.

Linear Algebra and Discrete Structure course is basic mathematics for engineering students that discusses Linear Equation Systems, Matrices, Determinants, Vector, Eigen Value & Eigen Vector, as well as the basic concepts of Discrete Mathematics. This course has Mathematics I as prerequisites.

CPL Prodi yang Dibebankan

Learning Outcomes

(CPL-01) Mampu menerapkan ilmu pengetahuan alam dan matematika pada bidang teknik elektro
(PLO-1) *Capable to apply knowledge of natural sciences and mathematics to solve electrical engineering problem*

Capaian Pembelajaran Mata Kuliah

Course Learning Outcomes

(CPMK-01) Menguasai konsep teori dasar aljabar linier yang mencakup teori sistem persamaan linier, matriks, determinan, permasalahan eigen value & eigen vector, bentuk – bentuk vektor, serta beberapa konsep matematika diskrit (Himpunan, Relasi, Graph).

(CLO-01) Mastering the basic theoretical and concepts of linear algebra which includes systems theory of linear equations, matrices, determinants, eigen value & eigen vector problems, vector forms, as well as some discrete mathematical concepts (Sets, Relations, Graphs).

(CPMK-02) Mampu memformulasikan permasalahan matematika dan menyelesaikannya menggunakan konsep sistem persamaan linier, matriks, determinan, permasalahan eigen value & eigen vector, bentuk – bentuk vektor, serta permasalahan matematika diskrit.

(CLO-02) Able to formulate mathematical problems and solve the problem using concepts of linear equations system, matrices, determinants, eigen value & eigen vector problems, vector forms, and discrete mathematical problems.

(CPMK-03) Mampu menunjukkan kinerja mandiri, bermutu, dan terukur dalam menganalisis permasalahan matematika teknik menggunakan konsep aljabar linier dan matematika diskrit.

(CLO-03) Able to demonstrate independent, high quality, and measurable performance in analyzing mathematical problems with techniques using linear algebraic concepts and discrete mathematics.

(CPMK-04) Mampu bertanggung jawab atas hasil kerja, baik secara individu maupun kelompok.

(CLO-04) Able to be responsible for the work, both individually and in groups

Topik/Pokok Bahasan

Main Subjects

1. Sistem Persamaan Linier & Eliminasi Gauss
Linear Equation System & Gauss Elimination
2. Operasi-operasi Matriks
Matrix Operations
3. Determinan
Determinants
4. Ruang Vektor (Euclidean & General)
Vector Space (Euclidean & General)
5. Eigen Value dan Eigen Vector, Diagonalisasi
Eigen Value and Eigen Vector, Diagonalization
6. Himpunan, Operasi Himpunan, dan Fungsi
Sets, Set Operations, and Functions
7. Relasi
Relation
8. Grafik
Graph

Pembelajaran dan ujian

Study and examination

- Latihan di kelas
In-class exercises
- Tugas 1, 2, 3
Assignment 1, 2, 3
- Ujian tengah semester
Mid-term examination

-
- Ujian akhir semester
Final examination

Pustaka

Reference(s)

- [1] Howard Anton and Chiss Rorres, 11th Edition of Elementary Linear Algebra, 2014
[2] Kenneth H. Rosen, 7th Edition of Discrete Mathematics and Its Applications

Prasyarat

Prerequisite(s)

KM184101 Matematika I
KM184101 Mathematics I
