



**Universitas Negeri Surabaya
Fakultas Vokasi
Program Studi D4 Teknik Sipil**

**Kode
Dokumen**

RENCANA PEMBELAJARAN SEMESTER

| MATA KULIAH (MK) | KODE | Rumpun MK | BOBOT (sks) | | | SEMESTER | Tgl Penyusunan |
|-------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------|-----------|---------------------------------------|-----------------|
| ANALISIS STRUKTUR METODE Matrik | 2230502026 | Mata Kuliah Pilihan Program Studi | T=2 | P=0 | ECTS=3.18 | 4 | 18 Januari 2025 |
| OTORISASI | Pengembang RPS | | Koordinator RMK | | | Koordinator Program Studi | |
| | | | | | | Puguh Novi Prasetyono, S.Pd., M.T. | |
| Model Pembelajaran | Case Study | | | | | | |
| Capaian Pembelajaran (CP) | CPL-PRODI yang dibebankan pada MK | | | | | | |
| | CPL-11 | Mampu menerapkan pengetahuan matematika, ilmu pengetahuan alam dan/atau material, teknologi informasi ketekniksipil untuk mendapatkan pemahaman menyeluruh tentang prinsip dan metode teknik sipil bidang konstruksi gedung. | | | | | |
| | CPL-12 | Mampu mengidentifikasi, merumuskan, menganalisis dan menyelesaikan permasalahan teknik sipil bangunan gedung. | | | | | |
| | Capaian Pembelajaran Mata Kuliah (CPMK) | | | | | | |
| | CPMK - 1 | Mahasiswa dapat menerapkan metode matriks dalam analisis struktur untuk berbagai jenis bangunan (C3) | | | | | |
| | CPMK - 2 | Mahasiswa dapat menganalisis pengaruh beban dan gaya dalam matriks kekakuan struktur bangunan (C4) | | | | | |
| | CPMK - 3 | Mahasiswa dapat mengevaluasi hasil analisis struktur menggunakan metode matriks berdasarkan standar yang berlaku (C5) | | | | | |
| | CPMK - 4 | Mahasiswa dapat menciptakan model struktural yang efisien menggunakan perangkat lunak berbasis metode matriks (C6) | | | | | |
| | CPMK - 5 | Mahasiswa dapat menerapkan konsep dasar mekanika bahan dalam pembuatan matriks kekakuan (C3) | | | | | |
| | CPMK - 6 | Mahasiswa dapat menganalisis dan memvalidasi model struktur yang dibuat dengan metode matriks (C4) | | | | | |
| | CPMK - 7 | Mahasiswa dapat mengevaluasi keakuratan dan keandalan hasil analisis metode matriks (C5) | | | | | |
| | CPMK - 8 | Mahasiswa dapat mengintegrasikan pengetahuan teknik sipil dalam perancangan dan analisis struktur menggunakan metode matriks (C3) | | | | | |
| | CPMK - 9 | Mahasiswa dapat menganalisis dampak lingkungan dan keberlanjutan dari struktur yang dianalisis menggunakan metode matriks (C4) | | | | | |
| | CPMK - 10 | Mahasiswa dapat menciptakan solusi inovatif untuk permasalahan struktural dengan menggunakan pendekatan matriks (C6) | | | | | |
| Matrik CPL - CPMK | | | | | | | |
| | | CPMK | CPL-11 | CPL-12 | | | |
| | CPMK-1 | ✓ | | | | | |
| | CPMK-2 | ✓ | | ✓ | | | |
| | CPMK-3 | ✓ | | ✓ | | | |
| | CPMK-4 | ✓ | | | | | |
| | CPMK-5 | ✓ | | | | | |
| | CPMK-6 | | | ✓ | | | |
| | CPMK-7 | | | ✓ | | | |
| | CPMK-8 | ✓ | | ✓ | | | |
| | CPMK-9 | | | ✓ | | | |
| | CPMK-10 | ✓ | | ✓ | | | |
| Matrik CPMK pada Kemampuan akhir tiap tahapan belajar (Sub-CPMK) | | | | | | | |

| | | <table border="1"> <tr> <th rowspan="2">CPMK</th> <th colspan="16">Minggu Ke</th> </tr> <tr> <th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th><th>16</th> </tr> <tr><td>CPMK-1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>CPMK-2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>CPMK-3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>CPMK-4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>CPMK-5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>CPMK-6</td><td>✓</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>CPMK-7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>CPMK-8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>CPMK-9</td><td></td><td></td><td></td><td></td><td>✓</td><td></td><td></td><td></td><td></td><td>✓</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>CPMK-10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table> | | | | | | | | | | | | | | | | CPMK | Minggu Ke | | | | | | | | | | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | CPMK-1 | | | | | | | | | | | | | | | | | CPMK-2 | | | | | | | | | | | | | | | | | CPMK-3 | | | | | | | | | | | | | | | | | CPMK-4 | | | | | | | | | | | | | | | | | CPMK-5 | | | | | | | | | | | | | | | | | CPMK-6 | ✓ | | | | | | | | | | | | | | | | CPMK-7 | | | | | | | | | | | | | | | | | CPMK-8 | | | | | | | | | | | | | | | | | CPMK-9 | | | | | ✓ | | | | | ✓ | | | | | | | CPMK-10 | | | | | | | | | | | | | | | | |
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| CPMK | Minggu Ke | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CPMK-1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CPMK-2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| CPMK-4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CPMK-5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CPMK-6 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CPMK-7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CPMK-8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CPMK-9 | | | | | ✓ | | | | | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CPMK-10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Deskripsi Singkat MK | <p>Pengertian Struktur, Metode Analisis Struktur, Peranan Aljabar Matriks dan Komputasi dalam Analisis Struktur; Metode Gaya: Penjabaran Metode, Matriks Fleksibilitas, Matriks Statis; Aplikasi Metode Gaya: Reaksi Tumpuan Struktur Balok Menerus, Struktur Rangka Batang Bidang Statis Tertentu. Metode Perpindahan: Penjabaran Metode Matriks Kekakuan Batang, Matriks Kekakuan Global, Persamaan Global. Pembelajaran dilakukan dengan Metode Pembelajaran Langsung (MPL) dan diakhiri dengan kegiatan diskusi.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pustaka | <p>Utama :</p> <ol style="list-style-type: none"> [1]. Sunggono. 1984. Buku Teknik Sipil. Jakarta: Penerbit Nova. [2]. Wang, Chu-Kia. 1985. Pengantar Analisis Struktur dengan Cara Matriks. Ismoyo Penterjemah. Jakarta : Erlangga. [3]. Sabariman, Bambang & Dani, Hasan. 2015. Analisis Struktur Metode Matriks. Surabaya: JTS FT Unesa. [4]. Sabariman, Bambang & Dani, Hasan. 2015. Pemanfaatan Gambar Gaya Lintang dalam Perhitungan Momen Statis Tertentu, Jurnal JKPTB Vol.01 No.01 2015 ISSN 1271-2012, hal 142-147. [5]. Szilard, Rudolph. 1989. Teori dan Analisis Pelat Metode Klasik dan Numerik, Wira Penterjemah. Jakarta : Erlangga. [6]. Kho Hong Geh. 1989. Singkat Tepat Jelas MathCad Menyelesaikan Problem Numerik dan Matematika. Jakarta: PT. Elex Media Komputindo. [7]. Jurnal JPTK Unesa. 2015. <p>Pendukung :</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dosen Pengampu | <p>Dr. Suprpto, S.Pd., M.T. Ir. Fransiskus Xaverius Maradona Manteiro, S.T., M.Sc. Anggi Rahmad Zulfikar, M.T. Berkat Cipta Zega, S.Pd., M.Eng.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mg Ke- | Kemampuan akhir tiap tahapan belajar (Sub-CPMK) | Penilaian | | Bantuan Pembelajaran, Metode Pembelajaran, Penugasan Mahasiswa, [Estimasi Waktu] | | Materi Pembelajaran [Pustaka] | | Bobot Penilaian (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Indikator | Kriteria & Bentuk | Luring (offline) | Daring (online) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| 1 | Mampu memahami penggunaan matriks pada struktur statis tak tentu | Menjelaskan perbedaan struktur statis tertentu (ST) dan struktur statis tak tentu (STT). | Kriteria: nilai bagus jika di jawab dengan benar Bentuk Penilaian : Tes | Ceramah, diskusi dan tanya jawab 2 X 50 | | Materi: matriks Pustaka: [1]. <i>Sunggono. 1984. Buku Teknik Sipil. Jakarta: Penerbit Nova.</i> [2]. Wang, Chu-Kia. 1985. <i>Pengantar Analisis Struktur dengan Cara Matriks, Ismoyo Penterjemah. Jakarta : Erlangga.</i> [3]. Sabariman, Bambang. 2015. <i>Analisis Struktur Metode Matriks. Surabaya: JTS FT Unesa.</i> [4]. Sabariman, Bambang & Dani, Hasan. 2015. <i>Pemanfaatan Gambar Gaya Lintang dalam Perhitungan Momen Statis Tertentu, Jurnal JKPTB Vol.01 No.01 2015 ISSN 1271-2012, hal142-147.</i> [5]. Szilard, Rudolph. 1989. <i>Teori dan Analisis Pelat Metode Klasik dan Numerik, Wira Penterjemah. Jakarta : Erlangga.</i> [6]. Kho Hong Geh. 1989. <i>Singkat Tepat Jelas MathCad Menyelesaikan Problem Numerik dan Matematika. Jakarta: PT. Elex Media Komputindo.</i> [7]. Jurnal JPTK Unesa. 2015. | 10% |
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| 2 | Mampu memahami konsep analisis struktur metode matriks (ASMM). | Menjelaskan konsep analisis struktur metode matriks (ASMM). | <p>Kriteria: nilai bagus jika di jawab dengan benar</p> <p>Bentuk Penilaian : Aktifitas Partisipasif, Tes</p> | Ceramah, diskusi, tanya jawab dan latihan pembahasan soal balok STT 2 X 50 | | <p>Materi: matriks</p> <p>Pustaka: [1]. <i>Sunggono. 1984. Buku Teknik Sipil. Jakarta: Penerbit Nova.</i>[2]. <i>Wang, Chu-Kia. 1985. Pengantar Analisis Struktur dengan Cara Matriks, Ismoyo Penterjemah. Jakarta : Erlangga.</i> [3]. <i>Sabariman, Bambang. 2015. Analisis Struktur Metode Matriks. Surabaya: JTS FT Unesa.</i>[4]. <i>Sabariman, Bambang & Dani, Hasan. 2015. Pemanfaatan Gambar Gaya Lintang dalam Perhitungan Momen Statis Tertentu, Jurnal JKPTB Vol.01 No.01 2015 ISSN 1271-2012, hal142-147.</i>[5]. <i>Szilard, Rudolph. 1989. Teori dan Analisis Pelat Metode Klasik dan Numerik, Wira Penterjemah. Jakarta : Erlangga.</i> [6]. <i>Kho Hong Geh. 1989. Singkat Tepat Jelas MathCad Menyelesaikan Problem Numerik dan Matematika. Jakarta: PT. Elex Media Komputindo.</i> [7]. <i>Jurnal JPTK Unesa. 2015.</i></p> | 5% |
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| 3 | Mampu membentuk matriks balok STT | Menjelaskan pembentukan matriks dan analisis balok STT | Kriteria: nilai bagus jika di jawab dengan benar Bentuk Penilaian : Tes | Ceramah, tanya jawab dan latihan pembahasan balok STT 2 X 50 | | Materi: matriks Pustaka: [1]. <i>Sunggono. 1984. Buku Teknik Sipil. Jakarta: Penerbit Nova.</i> [2]. Wang, Chu-Kia. 1985. <i>Pengantar Analisis Struktur dengan Cara Matriks, Ismoyo Penterjemah. Jakarta : Erlangga.</i> [3]. Sabariman, Bambang. 2015. <i>Analisis Struktur Metode Matriks. Surabaya: JTS FT Unesa.</i> [4]. Sabariman, Bambang & Dani, Hasan. 2015. <i>Pemanfaatan Gambar Gaya Lintang dalam Perhitungan Momen Statis Tertentu, Jurnal JKPTB Vol.01 No.01 2015 ISSN 1271-2012, hal142-147.</i> [5]. Szilard, Rudolph. 1989. <i>Teori dan Analisis Pelat Metode Klasik dan Numerik, Wira Penterjemah. Jakarta : Erlangga.</i> [6]. KhoHong Geh. 1989. <i>Singkat Tepat Jelas MathCad Menyelesaikan Problem Numerik dan Matematika. Jakarta: PT. Elex Media Komputindo.</i> [7]. Jurnal JPTK Unesa. 2015. | 5% |
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| 4 | Mampu membentuk matriks balok sederhana STT | Menjelaskan pembentukan matriks dan analisis balok sederhana STT | <p>Kriteria: nilai bagus jika di jawab dengan benar</p> <p>Bentuk Penilaian : Aktifitas Partisipasif</p> | Ceramah, diskusi, tanya jawab dan latihan pembahasan soal balok sederhana STT 2 X 50 | | <p>Materi: matriks</p> <p>Pustaka: [1]. <i>Sunggono. 1984. Buku Teknik Sipil. Jakarta: Penerbit Nova.</i>[2]. <i>Wang, Chu-Kia. 1985. Pengantar Analisis Struktur dengan Cara Matriks, Ismoyo Penterjemah. Jakarta : Erlangga.</i> [3]. <i>Sabariman, Bambang. 2015. Analisis Struktur Metode Matriks. Surabaya: JTS FT Unesa.</i>[4]. <i>Sabariman, Bambang & Dani, Hasan. 2015. Pemanfaatan Gambar Gaya Lintang dalam Perhitungan Momen Statis Tertentu, Jurnal JKPTB Vol.01 No.01 2015 ISSN 1271-2012, hal142-147.</i>[5]. <i>Szilard, Rudolph. 1989. Teori dan Analisis Pelat Metode Klasik dan Numerik, Wira Penterjemah. Jakarta : Erlangga.</i> [6]. <i>Kho Hong Geh. 1989. Singkat Tepat Jelas MathCad Menyelesaikan Problem Numerik dan Matematika. Jakarta: PT. Elex Media Komputindo.</i> [7]. <i>Jurnal JPTK Unesa. 2015.</i></p> | 5% |
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| 5 | Mampu membentuk matriks balok menerus STT | Menjelaskan pembentukan matriks dan analisis balok menerus STT | <p>Kriteria: nilai bagus jika di jawab dengan benar</p> <p>Bentuk Penilaian : Tes</p> | Ceramah, diskusi, tanya jawab dan latihan pembahasan soal balok menerus STT 2 X 50 | | <p>Materi: matriks</p> <p>Pustaka: [1]. <i>Sunggono. 1984. Buku Teknik Sipil. Jakarta: Penerbit Nova.</i>[2]. <i>Wang, Chu-Kia. 1985. Pengantar Analisis Struktur dengan Cara Matriks, Ismoyo Penterjemah. Jakarta : Erlangga.</i> [3]. <i>Sabariman, Bambang. 2015. Analisis Struktur Metode Matriks. Surabaya: JTS FT Unesa.</i>[4]. <i>Sabariman, Bambang & Dani, Hasan. 2015. Pemanfaatan Gambar Gaya Lintang dalam Perhitungan Momen Statis Tertentu, Jurnal JKPTB Vol.01 No.01 2015 ISSN 1271-2012, hal142-147.</i>[5]. <i>Szilard, Rudolph. 1989. Teori dan Analisis Pelat Metode Klasik dan Numerik, Wira Penterjemah. Jakarta : Erlangga.</i> [6]. <i>Kho Hong Geh. 1989. Singkat Tepat Jelas MathCad Menyelesaikan Problem Numerik dan Matematika. Jakarta: PT. Elex Media Komputindo.</i> [7]. <i>Jurnal JPTK Unesa. 2015.</i></p> | 5% |
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| 6 | Mampu membentuk matriks balok menerus STT | Menjelaskan pembentukan matriks dan analisis balok menerus STT | <p>Kriteria: nilai bagus jika di jawab dengan benar</p> <p>Bentuk Penilaian : Aktifitas Partisipasif</p> | Ceramah, diskusi, tanya jawab dan latihan pembahasan soal balok menerus STT 2 X 50 | | <p>Materi: matriks</p> <p>Pustaka: [1]. <i>Sunggono. 1984. Buku Teknik Sipil. Jakarta: Penerbit Nova.</i>[2]. <i>Wang, Chu-Kia. 1985. Pengantar Analisis Struktur dengan Cara Matriks, Ismoyo Penterjemah. Jakarta : Erlangga.</i> [3]. <i>Sabariman, Bambang. 2015. Analisis Struktur Metode Matriks. Surabaya: JTS FT Unesa.</i>[4]. <i>Sabariman, Bambang & Dani, Hasan. 2015. Pemanfaatan Gambar Gaya Lintang dalam Perhitungan Momen Statis Tertentu, Jurnal JKPTB Vol.01 No.01 2015 ISSN 1271-2012, hal142-147.</i>[5]. <i>Szilard, Rudolph. 1989. Teori dan Analisis Pelat Metode Klasik dan Numerik, Wira Penterjemah. Jakarta : Erlangga.</i> [6]. <i>Kho Hong Geh. 1989. Singkat Tepat Jelas MathCad Menyelesaikan Problem Numerik dan Matematika. Jakarta: PT. Elex Media Komputindo.</i> [7]. <i>Jurnal JPTK Unesa. 2015.</i></p> | 5% |
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| 7 | Mampu membentuk matriks portal tetap | Menjelaskan pembentukan matriks dan analisis portal tetap | <p>Kriteria: nilai bagus jika di jawab dengan benar</p> <p>Bentuk Penilaian : Aktifitas Partisipasif</p> | Ceramah, diskusi, tanya jawab dan latihan portal tetap Tugas 1. 2 X 50 | <p>Materi: matriks</p> <p>Pustaka: [1]. <i>Sunggono. 1984. Buku Teknik Sipil. Jakarta: Penerbit Nova.</i>[2]. <i>Wang, Chu-Kia. 1985. Pengantar Analisis Struktur dengan Cara Matriks, Ismoyo Penterjemah. Jakarta : Erlangga.</i> [3]. <i>Sabariman, Bambang. 2015. Analisis Struktur Metode Matriks. Surabaya: JTS FT Unesa.</i>[4]. <i>Sabariman, Bambang & Dani, Hasan. 2015. Pemanfaatan Gambar Gaya Lintang dalam Perhitungan Momen Statis Tertentu, Jurnal JKPTB Vol.01 No.01 2015 ISSN 1271-2012, hal142-147.</i>[5]. <i>Szilard, Rudolph. 1989. Teori dan Analisis Pelat Metode Klasik dan Numerik, Wira Penterjemah. Jakarta : Erlangga.</i> [6]. <i>Kho Hong Geh. 1989. Singkat Tepat Jelas MathCad Menyelesaikan Problem Numerik dan Matematika. Jakarta: PT. Elex Media Komputindo.</i> [7]. <i>Jurnal JPTK Unesa. 2015.</i></p> | 5% |
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| 8 | Mampu membentuk matriks portal tetap | Menjelaskan pembentukan matriks dan analisis portal tetap | <p>Kriteria: nilai bagus jika di jawab dengan benar</p> <p>Bentuk Penilaian : Aktifitas Partisipasif</p> | Ceramah, diskusi, tanya jawab dan latihan portal tetap Tugas 1. 2 X 50 | <p>Materi: matriks</p> <p>Pustaka: [1]. <i>Sunggono. 1984. Buku Teknik Sipil. Jakarta: Penerbit Nova.</i>[2]. <i>Wang, Chu-Kia. 1985. Pengantar Analisis Struktur dengan Cara Matriks, Ismoyo Penterjemah. Jakarta : Erlangga.</i> [3]. <i>Sabariman, Bambang. 2015. Analisis Struktur Metode Matriks. Surabaya: JTS FT Unesa.</i>[4]. <i>Sabariman, Bambang & Dani, Hasan. 2015. Pemanfaatan Gambar Gaya Lintang dalam Perhitungan Momen Statis Tertentu, Jurnal JKPTB Vol.01 No.01 2015 ISSN 1271-2012, hal142-147.</i>[5]. <i>Szilard, Rudolph. 1989. Teori dan Analisis Pelat Metode Klasik dan Numerik, Wira Penterjemah. Jakarta : Erlangga.</i> [6]. <i>Kho Hong Geh. 1989. Singkat Tepat Jelas MathCad Menyelesaikan Problem Numerik dan Matematika. Jakarta: PT. Elex Media Komputindo.</i> [7]. <i>Jurnal JPTK Unesa. 2015.</i></p> | 10% |
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| 9 | UTS | nilai bagus jika di jawab dengan benar | Kriteria: nilai bagus jika di jawab dengan benar Bentuk Penilaian : Aktifitas Partisipasif | 2 X 50 | | Materi: matriks Pustaka: [1]. <i>Sunggono. 1984. Buku Teknik Sipil. Jakarta: Penerbit Nova.</i> [2]. Wang, Chu-Kia. 1985. <i>Pengantar Analisis Struktur dengan Cara Matriks, Ismoyo Penterjemah. Jakarta : Erlangga.</i> [3]. Sabariman, Bambang. 2015. <i>Analisis Struktur Metode Matriks. Surabaya: JTS FT Unesa.</i> [4]. Sabariman, Bambang & Dani, Hasan. 2015. <i>Pemanfaatan Gambar Gaya Lintang dalam Perhitungan Momen Statis Tertentu, Jurnal JKPTB Vol.01 No.01 2015 ISSN 1271-2012, hal142-147.</i> [5]. Szilard, Rudolph. 1989. <i>Teori dan Analisis Pelat Metode Klasik dan Numerik, Wira Penterjemah. Jakarta : Erlangga.</i> [6]. Kho Hong Geh. 1989. <i>Singkat Tepat Jelas MathCad Menyelesaikan Problem Numerik dan Matematika. Jakarta: PT. Elex Media Komputindo.</i> [7]. Jurnal JPTK Unesa. 2015. | 5% |
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| 10 | Mampu membentuk matriks portal bergoyang | Menjelaskan pembentukan matriks dan analisis portal bergoyang | Kriteria: nilai bagus jika di jawab dengan benar Bentuk Penilaian : Tes | Ceramah, diskusi, tanya jawab dan latihan portal bergoyang 2 X 50 | | Materi: matriks Pustaka: [1]. <i>Sunggono. 1984. Buku Teknik Sipil. Jakarta: Penerbit Nova.</i> [2]. <i>Wang, Chu-Kia. 1985. Pengantar Analisis Struktur dengan Cara Matriks, Ismoyo Penterjemah. Jakarta : Erlangga.</i> [3]. <i>Sabariman, Bambang. 2015. Analisis Struktur Metode Matriks. Surabaya: JTS FT Unesa.</i> [4]. <i>Sabariman, Bambang & Dani, Hasan. 2015. Pemanfaatan Gambar Gaya Lintang dalam Perhitungan Momen Statis Tertentu, Jurnal JKPTB Vol.01 No.01 2015 ISSN 1271-2012, hal142-147.</i> [5]. <i>Szilard, Rudolph. 1989. Teori dan Analisis Pelat Metode Klasik dan Numerik, Wira Penterjemah. Jakarta : Erlangga.</i> [6]. <i>Kho Hong Geh. 1989. Singkat Tepat Jelas MathCad Menyelesaikan Problem Numerik dan Matematika. Jakarta: PT. Elex Media Komputindo.</i> [7]. <i>Jurnal JPTK Unesa. 2015.</i> | 5% |
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| 11 | Mampu membentuk matriks portal bergoyang | Menjelaskan pembentukan matriks dan analisis portal bergoyang | Kriteria: nilai bagus jika di jawab dengan benar Bentuk Penilaian : Tes | Ceramah, diskusi, tanya jawab dan latihan portal bergoyang 2 X 50 | | Materi: matriks Pustaka: [1]. <i>Sunggono. 1984. Buku Teknik Sipil. Jakarta: Penerbit Nova.</i> [2]. Wang, Chu-Kia. 1985. <i>Pengantar Analisis Struktur dengan Cara Matriks, Ismoyo Penterjemah. Jakarta : Erlangga.</i> [3]. <i>Sabariman, Bambang. 2015. Analisis Struktur Metode Matriks. Surabaya: JTS FT Unesa.</i> [4]. <i>Sabariman, Bambang & Dani, Hasan. 2015. Pemanfaatan Gambar Gaya Lintang dalam Perhitungan Momen Statis Tertentu, Jurnal JKPTB Vol.01 No.01 2015 ISSN 1271-2012, hal142-147.</i> [5]. <i>Szilard, Rudolph. 1989. Teori dan Analisis Pelat Metode Klasik dan Numerik, Wira Penterjemah. Jakarta : Erlangga.</i> [6]. KhoHong Geh. 1989. <i>Singkat Tepat Jelas MathCad Menyelesaikan Problem Numerik dan Matematika. Jakarta: PT. Elex Media Komputindo.</i> [7]. <i>Jurnal JPTK Unesa. 2015.</i> | 5% |
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| 12 | Mampu membentuk matriks balok Metode Finite Different (FD) | Menjelaskan pembentukan matriks dan analisis balok Metode Finite Different (FD) | <p>Kriteria: nilai bagus jika di jawab dengan benar</p> <p>Bentuk Penilaian : Aktifitas Partisipasif</p> | Ceramah, diskusi, tanya jawab dan latihan balok 2 X 50 | | <p>Materi: matriks</p> <p>Pustaka: [1]. <i>Sunggono. 1984. Buku Teknik Sipil. Jakarta: Penerbit Nova.</i>[2]. <i>Wang, Chu-Kia. 1985. Pengantar Analisis Struktur dengan Cara Matriks, Ismoyo Penterjemah. Jakarta : Erlangga.</i> [3]. <i>Sabariman, Bambang. 2015. Analisis Struktur Metode Matriks. Surabaya: JTS FT Unesa.</i>[4]. <i>Sabariman, Bambang & Dani, Hasan. 2015. Pemanfaatan Gambar Gaya Lintang dalam Perhitungan Momen Statis Tertentu, Jurnal JKPTB Vol.01 No.01 2015 ISSN 1271-2012, hal142-147.</i>[5]. <i>Szilard, Rudolph. 1989. Teori dan Analisis Pelat Metode Klasik dan Numerik, Wira Penterjemah. Jakarta : Erlangga.</i> [6]. <i>Kho Hong Geh. 1989. Singkat Tepat Jelas MathCad Menyelesaikan Problem Numerik dan Matematika. Jakarta: PT. Elex Media Komputindo.</i> [7]. <i>Jurnal JPTK Unesa. 2015.</i></p> | 5% |
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| 13 | Mampu membentuk matriks balok Metode Finite Different (FD) | Menjelaskan pembentukan matriks dan analisis balok Metode Finite Different (FD) | <p>Kriteria: nilai bagus jika di jawab dengan benar</p> <p>Bentuk Penilaian : Aktifitas Partisipasif</p> | Ceramah, diskusi, tanya jawab dan latihan balok 2 X 50 | | <p>Materi: matrik</p> <p>Pustaka: [1]. <i>Sunggono. 1984. Buku Teknik Sipil. Jakarta: Penerbit Nova.</i>[2]. <i>Wang, Chu-Kia. 1985. Pengantar Analisis Struktur dengan Cara Matriks, Ismoyo Penterjemah. Jakarta : Erlangga.</i></p> <p>[3]. <i>Sabariman, Bambang. 2015. Analisis Struktur Metode Matriks. Surabaya: JTS FT Unesa.</i>[4]. <i>Sabariman, Bambang & Dani, Hasan. 2015. Pemanfaatan Gambar Gaya Lintang dalam Perhitungan Momen Statis Tertentu, Jurnal JKPTB Vol.01 No.01 2015 ISSN 1271-2012, hal142-147.</i>[5]. <i>Szilard, Rudolph. 1989. Teori dan Analisis Pelat Metode Klasik dan Numerik, Wira Penterjemah. Jakarta : Erlangga.</i></p> <p>[6]. <i>Kho Hong Geh. 1989. Singkat Tepat Jelas MathCad Menyelesaikan Problem Numerik dan Matematika. Jakarta: PT. Elex Media Komputindo.</i></p> <p>[7]. <i>Jurnal JPTK Unesa. 2015.</i></p> | 5% |
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| 14 | Mampu membentuk matriks pelat Metode Finite Different (FD) | Menjelaskan pembentukan matriks dan analisis pelat Metode FD | Kriteria: nilai bagus jika di jawab dengan tepat Bentuk Penilaian : Aktifitas Partisipasif | Ceramah, diskusi, tanya jawab dan latihan balok 2 X 50 | | Materi: tanah Pustaka: [1]. <i>Sunggono. 1984. Buku Teknik Sipil. Jakarta: Penerbit Nova.</i> [2]. Wang, Chu-Kia. 1985. <i>Pengantar Analisis Struktur dengan Cara Matriks, Ismoyo Penterjemah. Jakarta : Erlangga.</i> [3]. Sabariman, Bambang. 2015. <i>Analisis Struktur Metode Matriks. Surabaya: JTS FT Unesa.</i> [4]. Sabariman, Bambang & Dani, Hasan. 2015. <i>Pemanfaatan Gambar Gaya Lintang dalam Perhitungan Momen Statis Tertentu, Jurnal JKPTB Vol.01 No.01 2015 ISSN 1271-2012, hal142-147.</i> [5]. Szilard, Rudolph. 1989. <i>Teori dan Analisis Pelat Metode Klasik dan Numerik, Wira Penterjemah. Jakarta : Erlangga.</i> [6]. Kho Hong Geh. 1989. <i>Singkat Tepat Jelas MathCad Menyelesaikan Problem Numerik dan Matematika. Jakarta: PT. Elex Media Komputindo.</i> [7]. <i>Jurnal JPTK Unesa. 2015.</i> | 5% |
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| 15 | Mampu membentuk matriks pelat tumpuan kombinasi Metode FD | Menjelaskan pembentukan matriks dan analisis pelat tumpuan kombinasi Metode FD. | Kriteria: nilai bagus jika di jawab dengan benar Bentuk Penilaian : Aktifitas Partisipasif | Ceramah, diskusi, tanya jawab dan latihan balok Tugas 2. 2 X 50 | Materi: matriks Pustaka: [1]. <i>Sunggono. 1984. Buku Teknik Sipil. Jakarta: Penerbit Nova.</i> [2]. Wang, Chu-Kia. 1985. <i>Pengantar Analisis Struktur dengan Cara Matriks, Ismoyo Penterjemah. Jakarta : Erlangga.</i> [3]. Sabariman, Bambang. 2015. <i>Analisis Struktur Metode Matriks. Surabaya: JTS FT Unesa.</i> [4]. Sabariman, Bambang & Dani, Hasan. 2015. <i>Pemanfaatan Gambar Gaya Lintang dalam Perhitungan Momen Statis Tertentu, Jurnal JKPTB Vol.01 No.01 2015 ISSN 1271-2012, hal142-147.</i> [5]. Szilard, Rudolph. 1989. <i>Teori dan Analisis Pelat Metode Klasik dan Numerik, Wira Penterjemah. Jakarta : Erlangga.</i> [6]. Kho Hong Geh. 1989. <i>Singkat Tepat Jelas MathCad Menyelesaikan Problem Numerik dan Matematika. Jakarta: PT. Elex Media Komputindo.</i> [7]. Jurnal JPTK Unesa. 2015. | 5% |
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| 16 | UAS | nilai bagus jika di jawab dengan benar | Kriteria: nilai bagus jika di jawab dengan benar Bentuk Penilaian : Aktifitas Partisipasif | luring 2*50 | | Materi: matriks Pustaka: [1]. <i>Sunggono. 1984. Buku Teknik Sipil. Jakarta: Penerbit Nova.</i> [2]. <i>Wang, Chu-Kia. 1985. Pengantar Analisis Struktur dengan Cara Matriks, Ismoyo Penterjemah. Jakarta : Erlangga.</i> [3]. <i>Sabariman, Bambang. 2015. Analisis Struktur Metode Matriks. Surabaya: JTS FT Unesa.</i> [4]. <i>Sabariman, Bambang & Dani, Hasan. 2015. Pemanfaatan Gambar Gaya Lintang dalam Perhitungan Momen Statis Tertentu, Jurnal JKPTB Vol.01 No.01 2015 ISSN 1271-2012, hal142-147.</i> [5]. <i>Szilard, Rudolph. 1989. Teori dan Analisis Pelat Metode Klasik dan Numerik, Wira Penterjemah. Jakarta : Erlangga.</i> [6]. <i>Kho Hong Geh. 1989. Singkat Tepat Jelas MathCad Menyelesaikan Problem Numerik dan Matematika. Jakarta: PT. Elex Media Komputindo.</i> [7]. <i>Jurnal JPTK Unesa. 2015.</i> | 15% |
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Rekap Persentase Evaluasi : Case Study

| No | Evaluasi | Persentase |
|----|------------------------|------------|
| 1. | Aktifitas Partisipasif | 67.5% |
| 2. | Tes | 32.5% |
| | | 100% |

Catatan

- Capaian Pembelajaran Lulusan Prodi (CPL - Prodi)** adalah kemampuan yang dimiliki oleh setiap lulusan prodi yang merupakan internalisasi dari sikap, penguasaan pengetahuan dan ketrampilan sesuai dengan jenjang prodinya yang diperoleh melalui proses pembelajaran.
- CPL yang dibebankan pada mata kuliah** adalah beberapa capaian pembelajaran lulusan program studi (CPL-Prodi) yang digunakan untuk pembentukan/pengembangan sebuah mata kuliah yang terdiri dari aspek sikap, ketrampilan umum, ketrampilan khusus dan pengetahuan.
- CP Mata kuliah (CPMK)** adalah kemampuan yang dijabarkan secara spesifik dari CPL yang dibebankan pada mata kuliah, dan bersifat spesifik terhadap bahan kajian atau materi pembelajaran mata kuliah tersebut.
- Sub-CPMK Mata kuliah (Sub-CPMK)** adalah kemampuan yang dijabarkan secara spesifik dari CPMK yang dapat diukur atau diamati dan merupakan kemampuan akhir yang direncanakan pada tiap tahap pembelajaran, dan bersifat spesifik terhadap materi pembelajaran mata kuliah tersebut.
- Indikator penilaian** kemampuan dalam proses maupun hasil belajar mahasiswa adalah pernyataan spesifik dan terukur yang mengidentifikasi kemampuan atau kinerja hasil belajar mahasiswa yang disertai bukti-bukti.
- Kreteria Penilaian** adalah patokan yang digunakan sebagai ukuran atau tolok ukur ketercapaian pembelajaran dalam penilaian berdasarkan indikator-indikator yang telah ditetapkan. Kreteria penilaian merupakan pedoman bagi penilai agar penilaian konsisten dan tidak bias. Kreteria dapat berupa kuantitatif ataupun kualitatif.
- Bentuk penilaian:** tes dan non-tes.
- Bentuk pembelajaran:** Kuliah, Responsi, Tutorial, Seminar atau yang setara, Praktikum, Praktik Studio, Praktik Bengkel, Praktik Lapangan, Penelitian, Pengabdian Kepada Masyarakat dan/atau bentuk pembelajaran lain yang setara.
- Metode Pembelajaran:** Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project Based Learning, dan metode lainnya yg setara.
- Materi Pembelajaran** adalah rincian atau uraian dari bahan kajian yg dapat disajikan dalam bentuk beberapa pokok dan sub-pokok bahasan.

11. **Bobot penilaian** adalah prosentasi penilaian terhadap setiap pencapaian sub-CPMK yang besarnya proposional dengan tingkat kesulitan pencapaian sub-CPMK tsb., dan totalnya 100%.
12. TM=Tatap Muka, PT=Penugasan terstruktur, BM=Belajar mandiri.

RPS ini telah divalidasi pada tanggal 23 Desember 2024

Koordinator Program Studi D4
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