

|  | <div> Universitas Negeri Surabaya<br/> Fakultas Teknik<br/> Program Studi S2 Informatika </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                         |       |           |                           | Kode Dokumen     |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-------|-----------|---------------------------|------------------|------|-------|-------|-------|--------|----|----|----|--------|------|-----------|--|--------|---|--|---|--------|--|---|---|--------|--|--|---|--|--|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|--------|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--------|--|--|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--------|--|--|--|--|---|---|--|--|--|--|--|--|--|--|--|--|--------|--|--|--|--|--|--|---|--|--|--|--|--|--|--|--|--|--------|--|--|--|--|--|--|--|--|---|---|---|---|---|---|---|--|
|                                                                                   | <div>RENCANA PEMBELAJARAN SEMESTER</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                         |       |           |                           |                  |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
| MATA KULIAH (MK)                                                                  | KODE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Rumpun MK                                                                                                                                                                                                                                                                                                                                                                                                                               | BOBOT (sks)                             |       |           | SEMESTER                  | Tgl Penyusunan   |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
| Big Data Analitik                                                                 | 5510003018                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Mata Kuliah Pilihan Program Studi                                                                                                                                                                                                                                                                                                                                                                                                       | T=3                                     | P=0   | ECTS=6.72 | 3                         | 15 Desember 2025 |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
| OTORISASI                                                                         | Pengembang RPS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                         | Koordinator RMK                         |       |           | Koordinator Program Studi |                  |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
|                                                                                   | Prof. Dr. Lilik Anifah, S.T., M.T.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                         | Dr. Ir. Ricky Eka Putra, S.Kom., M.Kom. |       |           | RICKY EKA PUTRA           |                  |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
| Model Pembelajaran                                                                | Project Based Learning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                         |       |           |                           |                  |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
| Capaian Pembelajaran (CP)                                                         | CPL-PRODI yang dibebankan pada MK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                         |       |           |                           |                  |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
|                                                                                   | CPL-5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Menguasai dan mengaplikasikan teori-teori, konsep, prinsip, dan teknologi terkini dalam bidang Teknik Informatika, termasuk Data Sains, Kecerdasan Artifisial, Jaringan Cerdas, Rekayasa Perangkat Lunak, serta Sistem dan Teknologi Informasi untuk mengembangkan ilmu pengetahuan dan teknologi melalui riset dan penciptaan karya inovatif.                                                                                          |                                         |       |           |                           |                  |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
|                                                                                   | CPL-7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Menganalisis kebutuhan dan menyelesaikan masalah yang kompleks dalam berbagai bidang Teknik Informatika, menggunakan metode analitis dan pendekatan ilmiah.                                                                                                                                                                                                                                                                             |                                         |       |           |                           |                  |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
|                                                                                   | CPL-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Mengembangkan solusi inovatif untuk meningkatkan efisiensi dan efektivitas organisasi dengan memanfaatkan teknologi informasi terbaru.                                                                                                                                                                                                                                                                                                  |                                         |       |           |                           |                  |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
|                                                                                   | Capaian Pembelajaran Mata Kuliah (CPMK)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                         |       |           |                           |                  |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
|                                                                                   | CPMK - 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Mahasiswa mampu memahami konsep dasar rekayasa fitur, teknik analisis fitur, dan pembelajaran mesin untuk mendukung analisis data dan pengembangan teknologi terkini.                                                                                                                                                                                                                                                                   |                                         |       |           |                           |                  |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
|                                                                                   | CPMK - 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Mahasiswa mampu menganalisis kebutuhan data dan memilih teknik rekayasa fitur yang sesuai untuk menyelesaikan masalah kompleks dalam berbagai bidang Teknik Informatika.                                                                                                                                                                                                                                                                |                                         |       |           |                           |                  |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
|                                                                                   | CPMK - 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Mahasiswa mampu merancang dan mengimplementasikan algoritma pembelajaran mesin untuk pengenalan pola, klasifikasi, dan prediksi data secara inovatif.                                                                                                                                                                                                                                                                                   |                                         |       |           |                           |                  |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
|                                                                                   | CPMK - 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Mahasiswa mampu mengevaluasi hasil implementasi rekayasa fitur dan algoritma pembelajaran mesin untuk meningkatkan efisiensi dan efektivitas solusi berbasis teknologi informasi.                                                                                                                                                                                                                                                       |                                         |       |           |                           |                  |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
|                                                                                   | CPMK - 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Mahasiswa mampu mengembangkan solusi berbasis rekayasa fitur dan pembelajaran mesin yang inovatif untuk meningkatkan efisiensi dan efektivitas organisasi.                                                                                                                                                                                                                                                                              |                                         |       |           |                           |                  |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
|                                                                                   | Matrik CPL - CPMK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                         |       |           |                           |                  |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <table border="1"> <thead> <tr> <th>CPMK</th> <th>CPL-5</th> <th>CPL-7</th> <th>CPL-9</th> </tr> </thead> <tbody> <tr> <td>CPMK-1</td> <td>✓</td> <td></td> <td></td> </tr> <tr> <td>CPMK-2</td> <td></td> <td>✓</td> <td></td> </tr> <tr> <td>CPMK-3</td> <td>✓</td> <td></td> <td>✓</td> </tr> <tr> <td>CPMK-4</td> <td></td> <td>✓</td> <td>✓</td> </tr> <tr> <td>CPMK-5</td> <td></td> <td></td> <td>✓</td> </tr> </tbody> </table> |                                         |       |           |                           |                  | CPMK | CPL-5 | CPL-7 | CPL-9 | CPMK-1 | ✓  |    |    | CPMK-2 |      | ✓         |  | CPMK-3 | ✓ |  | ✓ | CPMK-4 |  | ✓ | ✓ | CPMK-5 |  |  | ✓ |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
|                                                                                   | CPMK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | CPL-5                                                                                                                                                                                                                                                                                                                                                                                                                                   | CPL-7                                   | CPL-9 |           |                           |                  |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
|                                                                                   | CPMK-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ✓                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                         |       |           |                           |                  |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
|                                                                                   | CPMK-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                         | ✓                                       |       |           |                           |                  |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
| CPMK-3                                                                            | ✓                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                         | ✓                                       |       |           |                           |                  |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
| CPMK-4                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ✓                                                                                                                                                                                                                                                                                                                                                                                                                                       | ✓                                       |       |           |                           |                  |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
| CPMK-5                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                         | ✓                                       |       |           |                           |                  |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
| Matrik CPMK pada Kemampuan akhir tiap tahapan belajar (Sub-CPMK)                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                         |       |           |                           |                  |      |       |       |       |        |    |    |    |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |
|                                                                                   | <table border="1"> <thead> <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> </thead> <tbody> <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> </tbody> </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                                                                              | 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                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                         |       |           |                           |                  |      | ✓     | ✓     | ✓     | ✓      | ✓  | ✓  | ✓  |        |      |           |  |        |   |  |   |        |  |   |   |        |  |  |   |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |  |

| <b>Deskripsi Singkat MK</b> |                                                                | Mata kuliah Rekayasa Fitur dan Pembelajaran Mesin pada jenjang S2 program studi Informatika bertujuan untuk memberikan pemahaman komprehensif mengenai teknik rekayasa fitur dan penerapan pembelajaran mesin dalam pengembangan solusi berbasis data. Mata kuliah ini mencakup penguasaan konsep dasar rekayasa fitur, analisis fitur, serta penggunaan algoritma pembelajaran mesin untuk pengenalan pola, klasifikasi, dan prediksi data. Ruang lingkupnya meliputi pemodelan, ekstraksi, seleksi, dan evaluasi fitur, serta penerapan metode pembelajaran mesin dalam menyelesaikan permasalahan kompleks di berbagai bidang Informatika. Mahasiswa diharapkan mampu mengintegrasikan teknik rekayasa fitur dengan algoritma pembelajaran mesin untuk menghasilkan solusi inovatif dan efektif, yang mendukung pengembangan teknologi terkini sesuai dengan kebutuhan industri dan masyarakat. |                                                                                                                     |                                                                                  |                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                     |
|-----------------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>Pustaka</b>              |                                                                | <b>Utama :</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                     |                                                                                  |                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                     |
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|                             |                                                                | <b>Pendukung :</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                     |                                                                                  |                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                     |
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| <b>Dosen Pengampu</b>       |                                                                | Dr. Wiyli Yustanti, S.Si., M.Kom.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                     |                                                                                  |                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                     |
| 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)                 |
| 1                           | Menjelaskan konsep dasar rekayasa fitur dan pembelajaran mesin | 1.Konsep dasar rekayasa fitur<br>2.Teknik analisis fitur<br>3.Pembelajaran mesin<br>4.Analisis data<br>5. Pengembangan teknologi terkini<br>6.Ketepatan menjelaskan konsep                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Kriteria:</b><br>Kejelasan dan kelengkapan penjelasan<br><br><b>Bentuk Penilaian :</b><br>Aktifitas Partisipatif | Ceramah, diskusi<br>2 x 50                                                       | Forum diskusi dan video<br>1 x 50 | <b>Materi:</b> Konsep dasar rekayasa fitur, Teknik analisis fitur, Pembelajaran mesin, Analisis data, Pengembangan teknologi terkini<br><b>Pustaka:</b><br><i>Handbook Perkuliahan</i><br><hr/> <b>Materi:</b> Introduction to Pattern Recognition<br><b>Pustaka:</b><br><i>Bishop, C. M. (2006). Pattern Recognition and Machine Learning. Springer.</i><br><hr/> <b>Materi:</b> Overview of Machine Learning<br><b>Pustaka:</b><br><i>Hastie, T., Tibshirani, R., &amp; Friedman, J. (2009). The Elements of Statistical Learning. Springer.</i> | 5%                  |

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| 2 | Menganalisis teknik pra-pemrosesan data    | 1.Konsep dasar rekayasa fitur dipahami dengan baik<br>2.Teknik analisis fitur dikuasai<br>3.Ketepatan teknik pra-pemrosesan                                                    | <b>Kriteria:</b><br>Keselarasan metode dengan dataset<br><br><b>Bentuk Penilaian :</b><br>Penilaian Hasil Project / Penilaian Produk | Pembelajaran aktif melalui diskusi dan proyek<br>2 x 50 | Diskusi daring tentang penerapan teknik analisis fitur dalam kasus nyata disertai video simulasi dan tugas<br>1 x 50 | <b>Materi:</b> Konsep dasar rekayasa fitur, Teknik analisis fitur, Pembelajaran mesin untuk analisis data<br><b>Pustaka:</b><br><i>Handbook Perkuliahan</i><br><br><b>Materi:</b> Data Preprocessing<br><b>Pustaka:</b> Han, J., Kamber, M., & Pei, J. (2011). <i>Data Mining: Concepts and Techniques</i> . Morgan Kaufmann.<br><br><b>Materi:</b> Data Cleaning<br><b>Pustaka:</b> Duda, R. O., Hart, P. E., & Stork, D. G. (2001). <i>Pattern Classification</i> . Wiley-Interscience.                                                                                                                     | 5% |
| 3 | Mengimplementasikan teknik ekstraksi fitur | 1.Analisis kebutuhan data<br>2.Pemilihan teknik rekayasa fitur<br>3.Penerapan teknik rekayasa fitur dalam pemecahan masalah<br>4.Ketepatan implementasi teknik ekstraksi fitur | <b>Kriteria:</b><br>Kelengkapan fitur yang dihasilkan<br><br><b>Bentuk Penilaian :</b><br>Penilaian Hasil Project / Penilaian Produk | Pembelajaran Berbasis Proyek.<br>2 x 59                 | Penugasan Proyek Mahasiswa dan Forum Diskusi<br>1 x 50                                                               | <b>Materi:</b> Pengertian Analisis Kebutuhan Data, Metode Analisis Kebutuhan Data, Pemilihan Teknik Rekayasa Fitur, Studi Kasus dalam Pemilihan Teknik Rekayasa Fitur<br><b>Pustaka:</b><br><i>Handbook Perkuliahan</i><br><br><b>Materi:</b> Feature Selection Basics<br><b>Pustaka:</b> Guyon, I., & Elisseeff, A. (2003). <i>An Introduction to Variable and Feature Selection</i> . <i>Journal of Machine Learning Research</i> .<br><br><b>Materi:</b> Feature Engineering<br><b>Pustaka:</b> Hastie, T., Tibshirani, R., & Friedman, J. (2009). <i>The Elements of Statistical Learning</i> . Springer. | 5% |

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| 4 | Memilih fitur yang relevan menggunakan teknik seleksi fitur         | 1. Analisis kebutuhan data<br>2. Pemilihan teknik rekayasa fitur<br>3. Penerapan teknik rekayasa fitur<br>4. Ketepatan analisis fitur yang dipilih | <b>Kriteria:</b><br>Relevansi fitur dengan tujuan analisis<br><br><b>Bentuk Penilaian :</b><br>Penilaian Hasil Project / Penilaian Produk                                | Pembelajaran Berbasis Proyek.<br>2 x 50 | Diskusi Forum Online, Pengumpulan Tugas Analisis Kebutuhan Data<br>1 x 50    | <b>Materi:</b> Analisis Kebutuhan Data, Pemilihan Teknik Rekayasa Fitur, Studi Kasus dalam Teknik Informatika<br><b>Pustaka:</b><br><i>Handbook Perkuliahan</i><br><br><b>Materi:</b> Feature Extraction<br><b>Pustaka:</b><br><i>Bishop, C. M. (2006). Pattern Recognition and Machine Learning. Springer.</i><br><br><b>Materi:</b> Dimensionality Reduction<br><b>Pustaka:</b> <i>Han, J., Kamber, M., &amp; Pei, J. (2011). Data Mining: Concepts and Techniques. Morgan Kaufmann.</i>                 | 5% |
| 5 | Menguraikan berbagai algoritma pembelajaran mesin untuk klasifikasi | 1. Analisis kebutuhan data<br>2. Penerapan teknik rekayasa fitur<br>3. Ketepatan menjelaskan algoritma yang digunakan                              | <b>Kriteria:</b><br>Kejelasan dan kelengkapan deskripsi algoritma<br><br><b>Bentuk Penilaian :</b><br>Aktifitas Partisipatif, Penilaian Hasil Project / Penilaian Produk | Pembelajaran Berbasis Proyek<br>2 x 50  | Penugasan Proyek Online dan Forum Diskusi serta Video Pembelajaran<br>1 x 50 | <b>Materi:</b> Analisis Kebutuhan Data, Teknik Rekayasa Fitur, Pemilihan Teknik yang Tepat<br><b>Pustaka:</b><br><i>Handbook Perkuliahan</i><br><br><b>Materi:</b> Classification Models<br><b>Pustaka:</b><br><i>Hastie, T., Tibshirani, R., &amp; Friedman, J. (2009). The Elements of Statistical Learning. Springer.</i><br><br><b>Materi:</b> Classification Algorithms<br><b>Pustaka:</b><br><i>Duda, R. O., Hart, P. E., &amp; Stork, D. G. (2001). Pattern Classification. Wiley-Interscience.</i> | 5% |

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| 6 | Menerapkan algoritma klasifikasi pada penyelesaian masalah   | 1. Analisis kebutuhan data<br>2. Penerapan teknik rekayasa fitur<br>3. Pemecahan masalah kompleks                                         | <b>Kriteria:</b><br>Keselarasan algoritma dengan dataset<br><br><b>Bentuk Penilaian :</b><br>Penilaian Hasil Project / Penilaian Produk       | Pembelajaran Berbasis Proyek<br>2 x 50 | Diskusi Forum Online, Pengumpulan Tugas Online, dan Simulasi<br>1 x 50 | <b>Materi:</b> Analisis Kebutuhan Data, Teknik Rekayasa Fitur, Pemilihan Teknik yang Sesuai<br><b>Pustaka:</b><br><i>Handbook Perkuliahan</i><br><br><b>Materi:</b><br>Classification Techniques<br><b>Pustaka:</b> Han, J., Kamber, M., & Pei, J. (2011). <i>Data Mining: Concepts and Techniques</i> . Morgan Kaufmann.<br><br><b>Materi:</b> Model Evaluation<br><b>Pustaka:</b> Guyon, I., & Elisseeff, A. (2003). <i>An Introduction to Variable and Feature Selection</i> . <i>Journal of Machine Learning Research</i> . | 5% |
| 7 | Mengevaluasi hasil implementasi algoritma pembelajaran mesin | 1. Analisis hasil implementasi<br>2. Evaluasi efisiensi solusi<br>3. Evaluasi efektivitas solusi<br>4. Ketepatan evaluasi hasil algoritma | <b>Kriteria:</b><br>Keselarasan evaluasi dengan hasil analisis<br><br><b>Bentuk Penilaian :</b><br>Penilaian Hasil Project / Penilaian Produk | Pembelajaran Berbasis Proyek<br>2 x 50 | Diskusi Online, Pengumpulan Laporan Evaluasi<br>1 x 50                 | <b>Materi:</b><br>Evaluasi Implementasi Rekayasa Fitur, Algoritma Pembelajaran Mesin, Analisis Hasil Implementasi, Evaluasi Efisiensi dan Efektivitas Solusi<br><b>Pustaka:</b><br><i>Handbook Perkuliahan</i><br><br><b>Materi:</b><br>Evaluation Metrics<br><b>Pustaka:</b> Han, J., Kamber, M., & Pei, J. (2011). <i>Data Mining: Concepts and Techniques</i> . Morgan Kaufmann.<br><br><b>Materi:</b> Model Assessment<br><b>Pustaka:</b> Bishop, C. M. (2006). <i>Pattern Recognition and Machine Learning</i> . Springer. | 5% |

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| 8 | Mampu menjelaskan dengan lebih baik materi-materi dari minggu ke-1 s.d. ke-7 | 1.Menerapkan konsep yang telah dipelajari<br>2.Mengalisis dan memecahkan masalah<br>3.Menjawab soal esai dan studi kasus | <b>Kriteria:</b><br>1.Kedalaman jawaban<br>2.Kejelasan analisis<br>3.Ketepatan solusi<br><br><b>Bentuk Penilaian :</b><br>Tes | Menyelesaikan soal ujian Sub-Sumatif<br>3 x 50 |  | <b>Materi:</b> Materi-materi dari minggu ke-1 s.d. ke-7<br><b>Pustaka:</b><br><i>Bishop, C. M. (2006). Pattern Recognition and Machine Learning. Springer.</i><br><br><b>Materi:</b> Materi-materi dari minggu ke-1 s.d. ke-7<br><b>Pustaka:</b><br><i>Hastie, T., Tibshirani, R., &amp; Friedman, J. (2009). The Elements of Statistical Learning. Springer.</i><br><br><b>Materi:</b> Materi-materi dari minggu ke-1 s.d. ke-7<br><b>Pustaka:</b> <i>Han, J., Kamber, M., &amp; Pei, J. (2011). Data Mining: Concepts and Techniques. Morgan Kaufmann.</i><br><br><b>Materi:</b> Materi-materi dari minggu ke-1 s.d. ke-7<br><b>Pustaka:</b><br><i>Guyon, I., &amp; Elisseeff, A. (2003). An Introduction to Variable and Feature Selection. Journal of Machine Learning Research.</i><br><br><b>Materi:</b> Materi-materi dari minggu ke-1 s.d. ke-7<br><b>Pustaka:</b><br><i>Duda, R. O., Hart, P. E., &amp; Stork, D. G. (2001). Pattern Classification. Wiley-Interscience.</i> | 15% |
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| 9  | Mengembangkan model pembelajaran mesin berbasis rekayasa fitur | 1.Solusi inovatif dikembangkan<br>2.Ketepatan model yang dikembangkan | <b>Kriteria:</b><br>Kelengkapan dan kesesuaian fitur<br><br><b>Bentuk Penilaian :</b><br>Penilaian Hasil Project / Penilaian Produk | Pembelajaran Berbasis Proyek<br>2 x 50             | Forum Diskusi dan Tugas<br>1 x 50               | <b>Materi:</b> Konsep rekayasa fitur, Pembelajaran mesin untuk efisiensi organisasi, Inovasi dalam pengembangan solusi<br><b>Pustaka:</b><br><i>Handbook Perkuliahan</i><br><br><b>Materi:</b><br>Feature-Based Learning<br><b>Pustaka:</b><br><i>Hastie, T., Tibshirani, R., &amp; Friedman, J. (2009). The Elements of Statistical Learning. Springer.</i> | 5% |
| 10 | Implementasi regresi dalam pembelajaran mesin                  | 1. Pengembangan solusi inovatif<br>2.Ketepatan implementasi regresi   | <b>Kriteria:</b><br>Keselarasan regresi dengan data<br><br><b>Bentuk Penilaian :</b><br>Penilaian Hasil Project / Penilaian Produk  | Pembelajaran Berbasis Proyek dan Diskusi<br>2 x 50 | Pembahasan Proyek dan Simulasi Daring<br>1 x 50 | <b>Materi:</b><br><b>Pustaka:</b><br><i>Handbook Perkuliahan</i><br><br><b>Materi:</b><br>Regression Models<br><b>Pustaka:</b> <i>Han, J., Kamber, M., &amp; Pei, J. (2011). Data Mining: Concepts and Techniques. Morgan Kaufmann.</i>                                                                                                                      | 5% |

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| 11 | Menyelesaikan Proyek Akhir | 1. Pengembangan solusi inovatif<br>2. Ketepatan analisis dan implementasi | <b>Kriteria:</b><br>Keselarasan proyek dengan metode yang dipilih<br><br><b>Bentuk Penilaian :</b><br>Penilaian Hasil Project / Penilaian Produk, Penilaian Portofolio | Pembelajaran Berbasis Proyek dan Diskusi<br>2 x 50 | Forum Konsultasi<br>1 x 50 | <b>Materi:</b><br><b>Pustaka:</b><br><i>Handbook Perkuliahan</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b><br><i>Bishop, C. M. (2006). Pattern Recognition and Machine Learning. Springer.</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b><br><i>Hastie, T., Tibshirani, R., &amp; Friedman, J. (2009). The Elements of Statistical Learning. Springer.</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b> <i>Han, J., Kamber, M., &amp; Pei, J. (2011). Data Mining: Concepts and Techniques. Morgan Kaufmann.</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b><br><i>Guyon, I., &amp; Elisseeff, A. (2003). An Introduction to Variable and Feature Selection. Journal of Machine Learning Research.</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b><br><i>Duda, R. O., Hart, P. E., &amp; Stork, D. G. (2001). Pattern Classification. Wiley-Interscience.</i> | 5% |
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| 12 | Menyelesaikan Proyek Akhir | 1. Pengembangan solusi inovatif<br>2. Ketepatan analisis dan implementasi | <b>Kriteria:</b><br>Keselarasan proyek dengan metode yang dipilih<br><br><b>Bentuk Penilaian :</b><br>Penilaian Hasil Project / Penilaian Produk, Penilaian Portofolio | Pembelajaran Berbasis Proyek dan Diskusi<br>2 x 50 | Forum Konsultasi<br>1 x 50 | <b>Materi:</b><br><b>Pustaka:</b><br><i>Handbook Perkuliahan</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b><br><i>Bishop, C. M. (2006). Pattern Recognition and Machine Learning. Springer.</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b><br><i>Hastie, T., Tibshirani, R., &amp; Friedman, J. (2009). The Elements of Statistical Learning. Springer.</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b> <i>Han, J., Kamber, M., &amp; Pei, J. (2011). Data Mining: Concepts and Techniques. Morgan Kaufmann.</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b><br><i>Guyon, I., &amp; Elisseeff, A. (2003). An Introduction to Variable and Feature Selection. Journal of Machine Learning Research.</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b><br><i>Duda, R. O., Hart, P. E., &amp; Stork, D. G. (2001). Pattern Classification. Wiley-Interscience.</i> | 5% |
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| 13 | Menyelesaikan Proyek Akhir | 1. Pengembangan solusi inovatif<br>2. Ketepatan analisis dan implementasi | <b>Kriteria:</b><br>Keselarasan proyek dengan metode yang dipilih<br><br><b>Bentuk Penilaian :</b><br>Penilaian Hasil Project / Penilaian Produk, Penilaian Portofolio | Pembelajaran Berbasis Proyek dan Diskusi<br>2 x 50 | Forum Konsultasi<br>1 x 50 | <b>Materi:</b><br><b>Pustaka:</b><br><i>Handbook Perkuliahan</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b><br><i>Bishop, C. M. (2006). Pattern Recognition and Machine Learning. Springer.</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b><br><i>Hastie, T., Tibshirani, R., &amp; Friedman, J. (2009). The Elements of Statistical Learning. Springer.</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b> <i>Han, J., Kamber, M., &amp; Pei, J. (2011). Data Mining: Concepts and Techniques. Morgan Kaufmann.</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b><br><i>Guyon, I., &amp; Elisseeff, A. (2003). An Introduction to Variable and Feature Selection. Journal of Machine Learning Research.</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b><br><i>Duda, R. O., Hart, P. E., &amp; Stork, D. G. (2001). Pattern Classification. Wiley-Interscience.</i> | 5% |
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| 14 | Menyelesaikan Proyek Akhir | 1. Pengembangan solusi inovatif<br>2. Ketepatan analisis dan implementasi | <b>Kriteria:</b><br>Keselarasan proyek dengan metode yang dipilih<br><br><b>Bentuk Penilaian :</b><br>Penilaian Hasil Project / Penilaian Produk, Penilaian Portofolio | Pembelajaran Berbasis Proyek dan Diskusi<br>2 x 50 | Forum Konsultasi<br>1 x 50 | <b>Materi:</b><br><b>Pustaka:</b><br><i>Handbook Perkuliahan</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b><br><i>Bishop, C. M. (2006). Pattern Recognition and Machine Learning. Springer.</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b><br><i>Hastie, T., Tibshirani, R., &amp; Friedman, J. (2009). The Elements of Statistical Learning. Springer.</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b> <i>Han, J., Kamber, M., &amp; Pei, J. (2011). Data Mining: Concepts and Techniques. Morgan Kaufmann.</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b><br><i>Guyon, I., &amp; Elisseeff, A. (2003). An Introduction to Variable and Feature Selection. Journal of Machine Learning Research.</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b><br><i>Duda, R. O., Hart, P. E., &amp; Stork, D. G. (2001). Pattern Classification. Wiley-Interscience.</i> | 5% |
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| 15 | Menyelesaikan Proyek Akhir | 1. Pengembangan solusi inovatif<br>2. Ketepatan analisis dan implementasi | <b>Kriteria:</b><br>Keselarasan proyek dengan metode yang dipilih<br><br><b>Bentuk Penilaian :</b><br>Penilaian Hasil Project / Penilaian Produk, Penilaian Portofolio | Pembelajaran Berbasis Proyek dan Diskusi<br>2 x 50 | Forum Konsultasi<br>1 x 50 | <b>Materi:</b><br><b>Pustaka:</b><br><i>Handbook Perkuliahan</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b><br><i>Bishop, C. M. (2006). Pattern Recognition and Machine Learning. Springer.</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b><br><i>Hastie, T., Tibshirani, R., &amp; Friedman, J. (2009). The Elements of Statistical Learning. Springer.</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b> <i>Han, J., Kamber, M., &amp; Pei, J. (2011). Data Mining: Concepts and Techniques. Morgan Kaufmann.</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b><br><i>Guyon, I., &amp; Elisseeff, A. (2003). An Introduction to Variable and Feature Selection. Journal of Machine Learning Research.</i><br><br><b>Materi:</b> Final Project<br><b>Pustaka:</b><br><i>Duda, R. O., Hart, P. E., &amp; Stork, D. G. (2001). Pattern Classification. Wiley-Interscience.</i> | 5% |
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|----|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 16 | Mampu menjelaskan dengan lebih baik materi-materi dari minggu ke-9 s.d. ke-15 | Mengintegrasikan seluruh materi Rekayasa Fitur dan Pembelajaran Mesin yang telah dipelajari dalam mata kuliah | <b>Kriteria:</b><br>Kemampuan menyelesaikan soal terkait semua CPMK<br><br><b>Bentuk Penilaian :</b><br>Tes | Menyelesaikan soal Ujian Sumatif<br>3 x 50 |  | <b>Materi:</b> Materi-materi dari minggu ke-9 s.d. ke-15<br><b>Pustaka:</b><br><i>Bishop, C. M. (2006). Pattern Recognition and Machine Learning. Springer.</i><br><br><b>Materi:</b> Materi-materi dari minggu ke-9 s.d. ke-15<br><b>Pustaka:</b><br><i>Hastie, T., Tibshirani, R., &amp; Friedman, J. (2009). The Elements of Statistical Learning. Springer.</i><br><br><b>Materi:</b> Materi-materi dari minggu ke-9 s.d. ke-15<br><b>Pustaka:</b> <i>Han, J., Kamber, M., &amp; Pei, J. (2011). Data Mining: Concepts and Techniques. Morgan Kaufmann.</i><br><br><b>Materi:</b> Materi-materi dari minggu ke-9 s.d. ke-15<br><b>Pustaka:</b><br><i>Guyon, I., &amp; Elisseeff, A. (2003). An Introduction to Variable and Feature Selection. Journal of Machine Learning Research.</i><br><br><b>Materi:</b> Materi-materi dari minggu ke-9 s.d. ke-15<br><b>Pustaka:</b><br><i>Duda, R. O., Hart, P. E., &amp; Stork, D. G. (2001). Pattern Classification. Wiley-Interscience.</i> | 15% |
|----|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|

#### Rekap Persentase Evaluasi : Project Based Learning

| No | Evaluasi                                   | Persentase |
|----|--------------------------------------------|------------|
| 1. | Aktifitas Partisipasif                     | 7.5%       |
| 2. | Penilaian Hasil Project / Penilaian Produk | 50%        |
| 3. | Penilaian Portofolio                       | 12.5%      |
| 4. | Tes                                        | 30%        |
|    |                                            | 100%       |

#### Catatan

1. **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.
2. **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.
3. **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.
4. **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.
5. **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.
6. **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.
7. **Bentuk penilaian:** tes dan non-tes.
8. **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.
9. **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.
10. **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 3 Februari 2025

Koordinator Program Studi S2  
Informatika



RICKY EKA PUTRA  
NIDN 0716018704

UPM Program Studi S2  
Informatika



NIDN 0024118405

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