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|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-----------------------------------------|-------------|---------------------------|--------------|----------------|------|-----------|-------|-------|-------|--------|----|----|---|--|--------|--|---|--|---|--------|---|---|---|---|--------|---|---|---|---|---|----|----|----|----|----|----|----|--------|---|---|---|---|---|---|---|--|--|--|--|--|--|--|--|--|--------|--|--|--|--|--|--|--|--|--|--|--|---|---|--|--|--|--------|--|--|--|--|--|--|--|--|--|---|---|--|--|---|---|---|--------|--|--|--|--|--|--|--|---|---|--|--|--|--|--|--|--|
|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Universitas Negeri Surabaya<br>Fakultas Teknik<br>Program Studi S2 Informatika                                                                                                                                                                                                                                                                 |                                 |                                         |             |                           | Kode Dokumen |                |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
| RENCANA PEMBELAJARAN SEMESTER                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                |                                 |                                         |             |                           |              |                |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
| MATA KULIAH (MK)                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | KODE                                                                                                                                                                                                                                                                                                                                           | Rumpun MK                       |                                         | BOBOT (sks) |                           | SEMESTER     | Tgl Penyusunan |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
| Komputasi Berbasis Jaringan                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 5510003010                                                                                                                                                                                                                                                                                                                                     | Mata Kuliah Wajib Program Studi |                                         | T=3         | P=0                       | ECTS=6.72    | 1 Agustus 2024 |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
| OTORISASI                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Pengembang RPS                                                                                                                                                                                                                                                                                                                                 |                                 | Koordinator RMK                         |             | Koordinator Program Studi |              |                |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Ibnu Febry Kurniawan, S.Kom., M.Sc., Ph.D., dan Pradini Puspitaningayu, Ph.D.                                                                                                                                                                                                                                                                  |                                 | 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-6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Merencanakan, mengelola, dan mengontrol proyek-proyek di bidang Teknik Informatika, memastikan keberhasilan dalam pelaksanaan dan pencapaian tujuan proyek.                                                                                                                                                                                    |                                 |                                         |             |                           |              |                |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
|                                                                                   | CPL-8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Mengevaluasi kinerja sistem dan teknologi informasi serta mengimplementasikan perbaikan berkelanjutan berdasarkan data dan analisis.                                                                                                                                                                                                           |                                 |                                         |             |                           |              |                |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
|                                                                                   | CPL-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Mengembangkan solusi inovatif untuk meningkatkan efisiensi dan efektivitas organisasi dengan memanfaatkan teknologi informasi terbaru.                                                                                                                                                                                                         |                                 |                                         |             |                           |              |                |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
|                                                                                   | Capaian Pembelajaran Mata Kuliah (CPMK)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                |                                 |                                         |             |                           |              |                |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
|                                                                                   | CPMK - 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Mampu menjelaskan fundamental komponen jaringan dalam sistem komputer                                                                                                                                                                                                                                                                          |                                 |                                         |             |                           |              |                |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
|                                                                                   | CPMK - 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Mampu mendesain sistem komputasi kolaboratif yang terkoneksi dengan jaringan                                                                                                                                                                                                                                                                   |                                 |                                         |             |                           |              |                |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
|                                                                                   | CPMK - 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Mampu menganalisis sistematika komputasi yang scalable dan high-throughput                                                                                                                                                                                                                                                                     |                                 |                                         |             |                           |              |                |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
|                                                                                   | CPMK - 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Mampu menjelaskan sistematika komunikasi dengan traditional socket                                                                                                                                                                                                                                                                             |                                 |                                         |             |                           |              |                |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
| Matrik CPL - CPMK                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                |                                 |                                         |             |                           |              |                |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
|                                                                                   | <table><tr><td>CPMK</td><td>CPL-5</td><td>CPL-6</td><td>CPL-8</td><td>CPL-9</td></tr><tr><td>CPMK-1</td><td>✓</td><td></td><td>✓</td><td></td></tr><tr><td>CPMK-2</td><td></td><td>✓</td><td></td><td>✓</td></tr><tr><td>CPMK-3</td><td>✓</td><td></td><td>✓</td><td></td></tr><tr><td>CPMK-4</td><td>✓</td><td></td><td>✓</td><td>✓</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                |                                 |                                         |             |                           |              |                | CPMK | CPL-5     | CPL-6 | CPL-8 | CPL-9 | CPMK-1 | ✓  |    | ✓ |  | CPMK-2 |  | ✓ |  | ✓ | CPMK-3 | ✓ |   | ✓ |   | CPMK-4 | ✓ |   | ✓ | ✓ |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
| CPMK                                                                              | CPL-5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CPL-6                                                                                                                                                                                                                                                                                                                                          | CPL-8                           | CPL-9                                   |             |                           |              |                |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
| CPMK-1                                                                            | ✓                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                | ✓                               |                                         |             |                           |              |                |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
| CPMK-2                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ✓                                                                                                                                                                                                                                                                                                                                              |                                 | ✓                                       |             |                           |              |                |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
| CPMK-3                                                                            | ✓                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                | ✓                               |                                         |             |                           |              |                |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
| CPMK-4                                                                            | ✓                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                | ✓                               | ✓                                       |             |                           |              |                |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
| Matrik CPMK pada Kemampuan akhir tiap tahapan belajar (Sub-CPMK)                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                |                                 |                                         |             |                           |              |                |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
|                                                                                   | <table><tr><td rowspan="2">CPMK</td><td colspan="16">Minggu Ke</td></tr><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td></tr><tr><td>CPMK-1</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK-2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>✓</td><td>✓</td><td></td><td></td><td></td></tr><tr><td>CPMK-3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>✓</td><td>✓</td><td></td><td></td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>CPMK-4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>✓</td><td>✓</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></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                                                                              | 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                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                |                                 |                                         |             |                           |              | ✓              | ✓    |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
| Deskripsi Singkat MK                                                              | Matakuliah ini mempelajari konsep dan best-practice sistem terdistribusi dalam keperluan komputasi dengan layanan jaringan komputer. Matakuliah ini membahas ringkasan lapisan jaringan komputer OSI dan TCP/IP pada tingkat Network, Transport, dan Application, serta aplikasinya pada pembagian beban komputasi menggunakan komunikasi dasar Socket dan Message Queue. Penggunaan teknologi-teknologi tersebut ditujukan untuk penyelesaian permasalahan aktual secara scalable dan near real-time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                |                                 |                                         |             |                           |              |                |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
| Pustaka                                                                           | Utama :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                |                                 |                                         |             |                           |              |                |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                |                                 |                                         |             |                           |              |                |      |           |       |       |       |        |    |    |   |  |        |  |   |  |   |        |   |   |   |   |        |   |   |   |   |   |    |    |    |    |    |    |    |        |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |        |  |  |  |  |  |  |  |  |  |   |   |  |  |   |   |   |        |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |

| <div>1. Kathiravelu, P., &amp; Sarker, F. O. (2017). Python network programming cookbook: Overcome real-world networking challenges (Second edition). Packt.</div> <div>2. Kurose, J. F., &amp; Ross, K. W. (2013). Computer networking: A top-down approach (6th ed). Pearson.</div> <div>3. McKellar, J., &amp; Fettig, A. (2013). Twisted network programming essentials (Second edition). O'Reilly.</div> |                                                                                                                                                                   |                                                                                                                                                                                                                                  |                                                                                        |                                                                                  |                 |                                                                                                                                                            |                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Pendukung :                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                   |                                                                                                                                                                                                                                  |                                                                                        |                                                                                  |                 |                                                                                                                                                            |                     |
| <div>1. Jeyaraman, B. P. (2022). Real-time streaming with Apache Kafka, Spark, and Storm: Create platforms that can quickly crunch data and deliver real-time analytics to users. BPB Publications.</div>                                                                                                                                                                                                     |                                                                                                                                                                   |                                                                                                                                                                                                                                  |                                                                                        |                                                                                  |                 |                                                                                                                                                            |                     |
| Dosen Pengampu                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                   | Dr. Widi Aribowo, S.T., M.T.<br>Ibnu Febry Kurniawan, S.Kom., M.Sc., Ph.D.<br>Pradini Puspitaningayu, S.T., M.T., Ph.D.                                                                                                          |                                                                                        |                                                                                  |                 |                                                                                                                                                            |                     |
| Mg Ke-                                                                                                                                                                                                                                                                                                                                                                                                        | Kemampuan akhir tiap tahapan belajar (Sub-CPMK)                                                                                                                   | Penilaian                                                                                                                                                                                                                        |                                                                                        | Bantuk 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                                                                                                                                                                                                                                                                                                                                                                                                             | 1.Mahasiswa mampu meringkas konsep enkapsulasi dalam sistem protocol stack<br>2.Mahasiswa dapat menjelaskan secara detil konsep layer OSI dan TCP/IP              | 1.Mampu menjelaskan cara kerja konektivitas perangkat dalam jaringan<br>2.Mampu menjelaskan prinsip kebutuha protocol stack<br>3.Mampu menyebutkan lapisan-lapisan dalam OSI<br>4.Mampu menyebutkan lapisan-lapisan dalam TCP/IP | <b>Kriteria:</b><br>Non-tes<br><br><b>Bentuk Penilaian :</b><br>Aktifitas Partisipasif | Ceramah dan tanya jawab 3x50                                                     |                 | <b>Materi:</b><br>Network<br><b>Pustaka:</b><br>Kurose, J. F., & Ross, K. W. (2013). Computer networking: A top-down approach (6th ed). Pearson.           | 0%                  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                             | 1.Mahasiswa mampu meringkas konsep enkapsulasi dalam sistem protocol stack<br>2.Mahasiswa dapat menjelaskan secara detil lapisan Application dalam protocol stack | 1.Mampu menjelaskan cara kerja konektivitas perangkat dalam jaringan<br>2.Mampu menjelaskan prinsip kerja lapisan Application<br>3.Mampu membedakan contoh-contoh protokol pada lapisan Application                              | <b>Kriteria:</b><br>Non-tes<br><br><b>Bentuk Penilaian :</b><br>Aktifitas Partisipasif | Ceramah dan tanya jawab 3x50                                                     |                 | <b>Materi:</b><br>Application Layer<br><b>Pustaka:</b><br>Kurose, J. F., & Ross, K. W. (2013). Computer networking: A top-down approach (6th ed). Pearson. | 0%                  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                             | Mahasiswa dapat menjelaskan prinsip kerja lapisan Application dalam protocol stack                                                                                | 1.Mampu menjelaskan cara kerja protokol HTTP<br>2.Mampu menjelaskan cara kerja protokol SMTP<br>3.Mampu menjelaskan cara kerja protokol DNS<br>4.Mampu menjelaskan cara kerja protokol DHCP                                      | <b>Kriteria:</b><br>Non-tes<br><br><b>Bentuk Penilaian :</b><br>Aktifitas Partisipasif | Ceramah dan tanya jawab 3x50                                                     |                 | <b>Materi:</b><br>Transport layer<br><b>Pustaka:</b><br>Kurose, J. F., & Ross, K. W. (2013). Computer networking: A top-down approach (6th ed). Pearson.   | 0%                  |

|   |                                                                                 |                                                                                                                                                                                                 |                                                                                                                                                     |                              |  |                                                                                                                                                                     |    |
|---|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 4 | Mahasiswa dapat menjelaskan secara detil lapisan Transport dalam protocol stack | 1.Mampu menjelaskan cara kerja konektivitas perangkat dalam jaringan<br>2.Mampu menjelaskan prinsip kerja lapisan Transport<br>3.Mampu membedakan contoh-contoh protokol pada lapisan Transport | <b>Kriteria:</b><br>Non-tes<br><br><b>Bentuk Penilaian :</b><br>Aktifitas Partisipasif                                                              | Ceramah dan tanya jawab 3x50 |  | <b>Materi:</b><br>Transport layer<br><b>Pustaka:</b><br><i>Kurose, J. F., &amp; Ross, K. W. (2013). Computer networking: A top-down approach (6th ed). Pearson.</i> | 0% |
| 5 | Mahasiswa dapat menjelaskan secara detil lapisan Transport dalam protocol stack | 1.Mampu menjelaskan cara kerja konektivitas perangkat dalam jaringan<br>2.Mampu menjelaskan prinsip kerja lapisan Transport<br>3.Mampu membedakan contoh-contoh protokol pada lapisan Transport | <b>Kriteria:</b><br>Non-tes<br><br><b>Bentuk Penilaian :</b><br>Aktifitas Partisipasif                                                              | Ceramah dan tanya jawab 3x50 |  | <b>Materi:</b><br>Transport layer<br><b>Pustaka:</b><br><i>Kurose, J. F., &amp; Ross, K. W. (2013). Computer networking: A top-down approach (6th ed). Pearson.</i> | 0% |
| 6 | Mahasiswa dapat menjelaskan secara detil lapisan Transport dalam protocol stack | 1.Mampu menjelaskan cara kerja konektivitas perangkat dalam jaringan<br>2.Mampu menjelaskan prinsip kerja lapisan Transport<br>3.Mampu membedakan contoh-contoh protokol pada lapisan Transport | <b>Kriteria:</b><br>Non-tes<br><br><b>Bentuk Penilaian :</b><br>Praktik / Unjuk Kerja                                                               | Ceramah dan tanya jawab 3x50 |  | <b>Materi:</b><br>Transport layer<br><b>Pustaka:</b><br><i>Kurose, J. F., &amp; Ross, K. W. (2013). Computer networking: A top-down approach (6th ed). Pearson.</i> | 0% |
| 7 | Mengenali skema komputasi dan komunikasi dalam jaringan                         | Mengidentifikasi skema komputasi dan komunikasi dalam jaringan                                                                                                                                  | <b>Kriteria:</b><br>Ketepatan identifikasi skema komputasi dan komunikasi dalam jaringan<br><br><b>Bentuk Penilaian :</b><br>Aktifitas Partisipasif | Ceramah dan tanya jawab      |  | <b>Materi:</b><br>TCP/IP Layer<br><b>Pustaka:</b><br><i>Kurose, J. F., &amp; Ross, K. W. (2013). Computer networking: A top-down approach (6th ed). Pearson.</i>    | 0% |

|    |                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                       |                              |  |                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |
|----|------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 8  | Mampu menjelaskan dengan lebih baik materi-materi dari minggu ke-1 s.d. ke-7 | <p>1.Mahasiswa mampu membedakan pola komunikasi process-to-process</p> <p>2.Mahasiswa mampu mendemonstrasi pola komunikasi process-to-process dengan moda blocking</p> <p>3.Mahasiswa mampu meringkas konsep enkapsulasi dalam sistem protocol stack</p> <p>4.Mahasiswa dapat menjelaskan secara detil lapisan Application dalam protocol stack</p> <p>5.Mahasiswa dapat menjelaskan secara detil lapisan Transport dalam protocol stack</p> <p>6.Rubrik Evaluasi</p> | <p><b>Kriteria:</b><br/>Nilai penuh diperoleh apabila mengerjakan semua soal dengan benar</p> <p><b>Bentuk Penilaian :</b><br/>Aktifitas Partisipasif, Penilaian Hasil Project / Penilaian Produk</p> | Soal Ujian SubSumatif 3x50   |  | <p><b>Materi:</b><br/>Socket programming</p> <p><b>Pustaka:</b><br/><i>Kurose, J. F., &amp; Ross, K. W. (2013). Computer networking: A top-down approach (6th ed). Pearson.</i></p> <p><b>Materi:</b><br/>Processing Mix-In Blocking Socket</p> <p><b>Pustaka:</b><br/><i>Kathiravelu, P., &amp; Sarker, F. O. (2017). Python network programming cookbook: Overcome real-world networking challenges (Second edition). Packt.</i></p> | 13% |
| 9  | Mampu membedakan pola komunikasi antar perangkat secara non-blocking         | <p>1.Mampu membedakan pola komunikasi process-to-process dengan moda non-blocking</p> <p>2.Mampu merinci pola desain dan pengembangan code untuk non-blocking communication</p>                                                                                                                                                                                                                                                                                       | <p><b>Kriteria:</b><br/>Non-Tes</p> <p><b>Bentuk Penilaian :</b><br/>Aktifitas Partisipasif, Penilaian Hasil Project / Penilaian Produk</p>                                                           | Ceramah dan tanya jawab 3x50 |  | <p><b>Materi:</b><br/>Thread-Mixin Socket</p> <p><b>Pustaka:</b><br/><i>Kathiravelu, P., &amp; Sarker, F. O. (2017). Python network programming cookbook: Overcome real-world networking challenges (Second edition). Packt.</i></p>                                                                                                                                                                                                   | 5%  |
| 10 | Mampu membedakan pola komunikasi antar perangkat secara non-blocking         | <p>1.Mampu membuat sistem komputasi yang non-blocking process-to-process</p> <p>2.Mampu menuluri prinsip kerja code untuk non-blocking communication</p>                                                                                                                                                                                                                                                                                                              | <p><b>Kriteria:</b><br/>Non-Tes</p> <p><b>Bentuk Penilaian :</b><br/>Aktifitas Partisipasif, Penilaian Hasil Project / Penilaian Produk</p>                                                           | Demonstrasi 3x50             |  | <p><b>Materi:</b><br/>Thread-Mixin Socket</p> <p><b>Pustaka:</b><br/><i>Kathiravelu, P., &amp; Sarker, F. O. (2017). Python network programming cookbook: Overcome real-world networking challenges (Second edition). Packt.</i></p>                                                                                                                                                                                                   | 17% |

|    |                                                                                                                                                      |                                                                                                                                                                                                  |                                                                                                                                             |                                 |  |                                                                                                                                                                                                                                                                                                                                                                                                                                           |     |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 11 | Mampu membedakan pola komunikasi antar perangkat secara non-blocking                                                                                 | <p>1.Mampu membuat sistem komputasi yang non-blocking dari perspektif event-driven programming</p> <p>2.Mampu menelusuri prinsip kerja code untuk non-blocking communication</p>                 | <p><b>Kriteria:</b><br/>Non-Tes</p> <p><b>Bentuk Penilaian :</b><br/>Aktifitas Partisipasif, Penilaian Hasil Project / Penilaian Produk</p> | Demonstrasi<br>3x50             |  | <p><b>Materi:</b><br/>Thread-Mixin Socket</p> <p><b>Pustaka:</b><br/><i>Kathiravelu, P., &amp; Sarker, F. O. (2017). Python network programming cookbook: Overcome real-world networking challenges (Second edition). Packt.</i></p> <p><b>Materi:</b><br/>Reactor, Protocol, and Factory</p> <p><b>Pustaka:</b><br/><i>McKellar, J., &amp; Fettig, A. (2013). Twisted network programming essentials (Second edition). O'Reilly.</i></p> | 10% |
| 12 | <p>1.Mampu menjelaskan pola komputasi pada Remote Procedure Call (RPC)</p> <p>2.Mampu menjelaskan pola komunikasi antar perangkat dengan Web API</p> | <p>1.Membedakan contoh-contoh teknologi RPC</p> <p>2.Membedakan metoda-metoda invocation dalam RPC</p> <p>3.Menjelaskan prosedur dalam pengiriman perintah dan penerimaan hasil pada Web API</p> | <p><b>Kriteria:</b><br/>Non-Tes</p> <p><b>Bentuk Penilaian :</b><br/>Aktifitas Partisipasif, Penilaian Hasil Project / Penilaian Produk</p> | Ceramah dan tanya jawab<br>3x50 |  | <p><b>Materi:</b> RPC</p> <p><b>Pustaka:</b><br/><i>Kurose, J. F., &amp; Ross, K. W. (2013). Computer networking: A top-down approach (6th ed). Pearson.</i></p>                                                                                                                                                                                                                                                                          | 5%  |
| 13 | Mampu menjelaskan pola komputasi Publish-Subscribe                                                                                                   | <p>1.Membedakan contoh-contoh teknologi producer-consumer</p> <p>2.Menyebutkan prinsip kerja producer-consumer</p> <p>3.Merinci prinsip kerja publish-subscribe</p>                              | <p><b>Kriteria:</b><br/>Non-Tes</p> <p><b>Bentuk Penilaian :</b><br/>Aktifitas Partisipasif, Penilaian Hasil Project / Penilaian Produk</p> | Ceramah dan tanya jawab<br>3x50 |  | <p><b>Materi:</b><br/>Producer-Consumer dan Publish-Subscribe</p> <p><b>Pustaka:</b><br/><i>Jeyaraman, B. P. (2022). Real-time streaming with Apache Kafka, Spark, and Storm: Create platforms that can quickly crunch data and deliver real-time analytics to users. BPB Publications.</i></p>                                                                                                                                           | 10% |

|    |                                                                                                                                                                                                                              |                                                                                                                                |                                                                                                                                             |                                       |  |                                                                                                                                                                                                                                                                                                 |     |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 14 | <p>1.Mampu menjelaskan langkah-langkah integrasi komputasi Publish-Subscribe dengan layanan Antrian</p> <p>2.Mampu menganalisis kinerja komputasi yang memanfaatkan asynchroneous queue processing dan Publish-Subscribe</p> | <p>1.Membedakan prinsip kerja job queue</p> <p>2.Merinci prinsip kerja publish-subscribe</p>                                   | <p><b>Kriteria:</b><br/>Non-Tes</p> <p><b>Bentuk Penilaian :</b><br/>Aktifitas Partisipatif, Penilaian Hasil Project / Penilaian Produk</p> | Ceramah dan tanya jawab 3x50          |  | <p><b>Materi:</b><br/>Producer-Consumer dan Publish-Subscribe</p> <p><b>Pustaka:</b><br/>Jeyaraman, B. P. (2022). <i>Real-time streaming with Apache Kafka, Spark, and Storm: Create platforms that can quickly crunch data and deliver real-time analytics to users.</i> BPB Publications.</p> | 10% |
| 15 | Mampu mendemonstrasikan rancang bangun sistem pemrosesan dengan antrian asinkron                                                                                                                                             | <p>1.Mampu merancang proyek</p> <p>2.Mampu membangun sistem komputasi berbasis jaringan dengan teknologi-teknologi relevan</p> | <p><b>Kriteria:</b><br/>Non-Tes</p> <p><b>Bentuk Penilaian :</b><br/>Aktifitas Partisipatif, Penilaian Hasil Project / Penilaian Produk</p> | Ceramah dan tanya jawab 3x50          |  | <p><b>Materi:</b><br/>Producer-Consumer dan Publish-Subscribe</p> <p><b>Pustaka:</b><br/>Jeyaraman, B. P. (2022). <i>Real-time streaming with Apache Kafka, Spark, and Storm: Create platforms that can quickly crunch data and deliver real-time analytics to users.</i> BPB Publications.</p> | 10% |
| 16 | Mampu menjelaskan dengan lebih baik materi-materi dari minggu ke-9 s.d. ke-15                                                                                                                                                | <p>1.Mampu merancang proyek</p> <p>2.Mampu membangun sistem komputasi berbasis jaringan dengan teknologi-teknologi relevan</p> | <p><b>Kriteria:</b><br/>Non-Tes</p> <p><b>Bentuk Penilaian :</b><br/>Aktifitas Partisipatif, Penilaian Hasil Project / Penilaian Produk</p> | Menyelesaikan soal Ujian Sumatif 3x50 |  | <p><b>Materi:</b><br/>Producer-Consumer dan Publish-Subscribe</p> <p><b>Pustaka:</b><br/>Jeyaraman, B. P. (2022). <i>Real-time streaming with Apache Kafka, Spark, and Storm: Create platforms that can quickly crunch data and deliver real-time analytics to users.</i> BPB Publications.</p> | 20% |

#### Rekap Persentase Evaluasi : Project Based Learning

| No | Evaluasi                                   | Persentase |
|----|--------------------------------------------|------------|
| 1. | Aktifitas Partisipatif                     | 50%        |
| 2. | Penilaian Hasil Project / Penilaian Produk | 50%        |
|    |                                            | 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. **Kriteria Penilaian** adalah patokan yang digunakan sebagai ukuran atau tolok ukur ketercapaian pembelajaran dalam penilaian berdasarkan indikator-indikator yang telah ditetapkan. Kriteria penilaian merupakan pedoman bagi penilai agar penilaian konsisten dan tidak bias. Kriteria 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 21 Desember 2024

Koordinator Program Studi S2  
Informatika



RICKY EKA PUTRA  
NIDN 0716018704

UPM Program Studi S2  
Informatika



NIDN 0024118405

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