

|                                                                                   |                                                                                                                              |                                                                                                                                                                                                                                        |                 |     |           |                           |                 |
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|  | <div>Universitas Negeri Surabaya</div> <div>Fakultas Teknik</div> <div>Program Studi S2 Pendidikan Teknologi Informasi</div> |                                                                                                                                                                                                                                        |                 |     |           |                           | Kode Dokumen    |
|                                                                                   | <div>RENCANA PEMBELAJARAN SEMESTER</div>                                                                                     |                                                                                                                                                                                                                                        |                 |     |           |                           |                 |
| MATA KULIAH (MK)                                                                  | KODE                                                                                                                         | Rumpun MK                                                                                                                                                                                                                              | BOBOT (sks)     |     |           | SEMESTER                  | Tgl Penyusunan  |
| Asesmen dan Evaluasi Pembelajaran                                                 | 8321503004                                                                                                                   |                                                                                                                                                                                                                                        | T=2             | P=1 | ECTS=6.72 | 1                         | 7 Desember 2025 |
| OTORISASI                                                                         | Pengembang RPS                                                                                                               |                                                                                                                                                                                                                                        | Koordinator RMK |     |           | Koordinator Program Studi |                 |
|                                                                                   | Prof. Dr. Ekohariadi, M.Pd                                                                                                   |                                                                                                                                                                                                                                        | .....           |     |           | RINA HARIMURTI            |                 |
| Model Pembelajaran                                                                | Project Based Learning                                                                                                       |                                                                                                                                                                                                                                        |                 |     |           |                           |                 |
| Capaian Pembelajaran (CP)                                                         | CPL-PRODI yang dibebankan pada MK                                                                                            |                                                                                                                                                                                                                                        |                 |     |           |                           |                 |
|                                                                                   | CPL-3                                                                                                                        | Mengembangkan pemikiran logis, kritis, sistematis, dan kreatif dalam melakukan pekerjaan yang spesifik di bidang keahliannya serta sesuai dengan standar kompetensi kerja bidang yang bersangkutan                                     |                 |     |           |                           |                 |
|                                                                                   | CPL-6                                                                                                                        | Menguasai metodologi penelitian pendidikan dan teknologi informasi tingkat lanjut untuk merancang dan melaksanakan penelitian yang menghasilkan kontribusi signifikan terhadap pengembangan ilmu pengetahuan dan praktik profesional   |                 |     |           |                           |                 |
|                                                                                   | CPL-8                                                                                                                        | Mengidentifikasi, menganalisis, dan memecahkan masalah kompleks dalam konteks pendidikan teknologi informasi menggunakan pendekatan yang kritis, logis, dan berbasis data                                                              |                 |     |           |                           |                 |
|                                                                                   | CPL-9                                                                                                                        | Menyampaikan ide, hasil penelitian, dan solusi inovatif secara efektif baik secara lisan maupun tulisan kepada audiens yang beragam di bidang pendidikan teknologi informasi, baik di tingkat nasional maupun internasional            |                 |     |           |                           |                 |
|                                                                                   | CPL-10                                                                                                                       | Merancang, mengembangkan, dan mengimplementasikan sistem pembelajaran yang memanfaatkan teknologi informasi secara efektif, inovatif, dan sesuai dengan kebutuhan pembelajaran adaptif dan analitis                                    |                 |     |           |                           |                 |
|                                                                                   | CPL-12                                                                                                                       | Melakukan penelitian yang rigor di bidang pendidikan teknologi informasi, mulai dari perumusan masalah hingga penyusunan laporan dan publikasi ilmiah yang diakui di tingkat nasional dan internasional dan bermanfaat bagi masyarakat |                 |     |           |                           |                 |
|                                                                                   | Capaian Pembelajaran Mata Kuliah (CPMK)                                                                                      |                                                                                                                                                                                                                                        |                 |     |           |                           |                 |
|                                                                                   | CPMK - 1                                                                                                                     | Menjelaskan konsep dasar asesmen dalam konteks pendidikan informatika, termasuk tujuan, prinsip, dan peran asesmen dalam pembelajaran.                                                                                                 |                 |     |           |                           |                 |
|                                                                                   | CPMK - 2                                                                                                                     | Menganalisis keterkaitan antara desain pembelajaran dan asesmen, serta menentukan strategi asesmen yang selaras dengan capaian pembelajaran pada pendidikan informatika.                                                               |                 |     |           |                           |                 |
|                                                                                   | CPMK - 3                                                                                                                     | Merancang tugas asesmen yang autentik dan berorientasi kompetensi, sesuai karakteristik bidang pendidikan informatika.                                                                                                                 |                 |     |           |                           |                 |
|                                                                                   | CPMK - 4                                                                                                                     | Menerapkan konsep psikometri komputasi untuk mengolah data hasil asesmen menggunakan perangkat lunak yang relevan.                                                                                                                     |                 |     |           |                           |                 |
|                                                                                   | CPMK - 5                                                                                                                     | Mengestimasi reliabilitas internal instrumen asesmen, serta menginterpretasikan makna koefisien reliabilitas untuk evaluasi kualitas instrumen.                                                                                        |                 |     |           |                           |                 |
|                                                                                   | CPMK - 6                                                                                                                     | Mengevaluasi validitas isi instrumen melalui prosedur kajian ahli (expert judgment) dan kesesuaian indikator dengan konstruk.                                                                                                          |                 |     |           |                           |                 |
|                                                                                   | CPMK - 7                                                                                                                     | Mengestimasi dan menginterpretasi reliabilitas antar-penilai (interrater reliability) untuk instrumen berbasis penilaian kinerja.                                                                                                      |                 |     |           |                           |                 |
|                                                                                   | CPMK - 8                                                                                                                     | Melakukan analisis butir dikotomi menggunakan teori tes klasik (TTK), termasuk menghitung indeks kesukaran serta daya pembeda.                                                                                                         |                 |     |           |                           |                 |
|                                                                                   | CPMK - 9                                                                                                                     | Menyelesaikan tugas analisis butir dikotomi dan menyajikan interpretasinya secara sistematis untuk peningkatan instrumen.                                                                                                              |                 |     |           |                           |                 |
|                                                                                   | CPMK - 10                                                                                                                    | Melakukan analisis butir politomus menggunakan teori tes klasik (TTK) serta mengevaluasi kinerja respons bertingkat pada asesmen pendidikan informatika.                                                                               |                 |     |           |                           |                 |
|                                                                                   | CPMK - 11                                                                                                                    | Menerapkan Model Rasch dalam teori respons butir (IRT) untuk mengestimasi parameter butir dan kemampuan peserta.                                                                                                                       |                 |     |           |                           |                 |
|                                                                                   | CPMK - 12                                                                                                                    | Menerapkan Partial Credit Model (PCM) untuk menganalisis butir politomus dalam kerangka teori respons butir.                                                                                                                           |                 |     |           |                           |                 |
|                                                                                   | CPMK - 13                                                                                                                    | Menganalisis fungsi informasi butir dan tes dalam perspektif IRT untuk menilai ketepatan pengukuran pada berbagai kemampuan peserta.                                                                                                   |                 |     |           |                           |                 |
|                                                                                   | CPMK - 14                                                                                                                    | Mengevaluasi konsep dan implementasi Computer-Based Testing (CBT) dalam asesmen PTK, termasuk kelebihan, kekurangan, dan syarat teknis.                                                                                                |                 |     |           |                           |                 |
|                                                                                   | CPMK - 15                                                                                                                    | Menganalisis prinsip dasar Computer Adaptive Testing (CAT) serta menilai potensi pemanfaatannya dalam asesmen pada bidang kejuruan.                                                                                                    |                 |     |           |                           |                 |
|                                                                                   | CPMK - 16                                                                                                                    | Menyelesaikan tugas analisis butir politomus (TTK/IRT), menginterpretasikan hasilnya, dan menyusun rekomendasi untuk peningkatan kualitas instrumen.                                                                                   |                 |     |           |                           |                 |
|                                                                                   | Matrik CPL - CPMK                                                                                                            |                                                                                                                                                                                                                                        |                 |     |           |                           |                 |

|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |           |       |        |        |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
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|                                                                  | <table><tr><td>CPMK</td><td>CPL-3</td><td>CPL-6</td><td>CPL-8</td><td>CPL-9</td><td>CPL-10</td><td>CPL-12</td></tr><tr><td>CPMK-1</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></tr><tr><td>CPMK-3</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></tr><tr><td>CPMK-5</td><td></td><td></td><td></td><td></td><td>✓</td><td></td></tr><tr><td>CPMK-6</td><td></td><td></td><td></td><td></td><td></td><td>✓</td></tr><tr><td>CPMK-7</td><td>✓</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK-8</td><td></td><td>✓</td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK-9</td><td></td><td></td><td>✓</td><td></td><td></td><td></td></tr><tr><td>CPMK-10</td><td></td><td></td><td></td><td>✓</td><td></td><td></td></tr><tr><td>CPMK-11</td><td></td><td></td><td></td><td></td><td>✓</td><td></td></tr><tr><td>CPMK-12</td><td></td><td></td><td></td><td></td><td></td><td>✓</td></tr><tr><td>CPMK-13</td><td></td><td>✓</td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK-14</td><td></td><td></td><td>✓</td><td></td><td></td><td></td></tr><tr><td>CPMK-15</td><td></td><td></td><td></td><td></td><td>✓</td><td></td></tr><tr><td>CPMK-16</td><td></td><td></td><td></td><td></td><td></td><td>✓</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | CPMK  | CPL-3     | CPL-6 | CPL-8  | CPL-9  | CPL-10 | CPL-12 | CPMK-1 | ✓  |    |    |    |    |    | CPMK-2 |  | ✓ |   |   |   |   | CPMK-3 |   |   | ✓ |   |    |    | CPMK-4 |    |    |    | ✓  |        |   | CPMK-5 |  |  |  |  | ✓ |  | CPMK-6 |  |  |  |  |  | ✓ | CPMK-7 | ✓      |  |   |  |  |  | CPMK-8 |  | ✓ |  |  |  |  | CPMK-9 |  |  | ✓ |        |  |  | CPMK-10 |  |  |  | ✓ |  |  | CPMK-11 |  |  |  |  | ✓ |  | CPMK-12 |  |  |  |   |  | ✓ | CPMK-13 |  | ✓ |  |  |  |  | CPMK-14 |  |  | ✓      |  |  |  | CPMK-15 |   |  |  |  | ✓ |  | CPMK-16 |  |  |  |  |  | ✓      |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK                                                             | CPL-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | CPL-6 | CPL-8     | CPL-9 | CPL-10 | CPL-12 |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-1                                                           | ✓                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       |           |       |        |        |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-2                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ✓     |           |       |        |        |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-3                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       | ✓         |       |        |        |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-4                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |           | ✓     |        |        |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-5                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |           |       | ✓      |        |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-6                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |           |       |        | ✓      |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-7                                                           | ✓                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       |           |       |        |        |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-8                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ✓     |           |       |        |        |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-9                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       | ✓         |       |        |        |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-10                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |           | ✓     |        |        |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-11                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |           |       | ✓      |        |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-12                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |           |       |        | ✓      |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-13                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ✓     |           |       |        |        |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-14                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       | ✓         |       |        |        |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-15                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |           |       | ✓      |        |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-16                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |           |       |        | ✓      |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| 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><tr><td>CPMK-5</td><td></td><td></td><td></td><td></td><td>✓</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK-6</td><td></td><td></td><td></td><td></td><td></td><td>✓</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK-7</td><td></td><td></td><td></td><td></td><td></td><td></td><td>✓</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK-8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>✓</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK-9</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>✓</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK-10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>✓</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK-11</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-12</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-13</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-14</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-15</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-16</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>✓</td></tr></table> | CPMK  | Minggu Ke |       |        |        |        |        |        |    |    |    |    |    |    |        |  |   | 1 | 2 | 3 | 4 | 5      | 6 | 7 | 8 | 9 | 10 | 11 | 12     | 13 | 14 | 15 | 16 | CPMK-1 | ✓ |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        | CPMK-2 |  | ✓ |  |  |  |        |  |   |  |  |  |  |        |  |  |   | CPMK-3 |  |  | ✓       |  |  |  |   |  |  |         |  |  |  |  |   |  | CPMK-4  |  |  |  | ✓ |  |   |         |  |   |  |  |  |  |         |  |  | CPMK-5 |  |  |  |         | ✓ |  |  |  |   |  |         |  |  |  |  |  | CPMK-6 |  |  |  |  |  | ✓ |  |  |  |  |  |  |  |  |  |  | CPMK-7 |  |  |  |  |  |  | ✓ |  |  |  |  |  |  |  |  |  | CPMK-8 |  |  |  |  |  |  |  | ✓ |  |  |  |  |  |  |  |  | CPMK-9 |  |  |  |  |  |  |  |  | ✓ |  |  |  |  |  |  |  | CPMK-10 |  |  |  |  |  |  |  |  |  | ✓ |  |  |  |  |  |  | CPMK-11 |  |  |  |  |  |  |  |  |  |  | ✓ |  |  |  |  |  | CPMK-12 |  |  |  |  |  |  |  |  |  |  |  | ✓ |  |  |  |  | CPMK-13 |  |  |  |  |  |  |  |  |  |  |  |  | ✓ |  |  |  | CPMK-14 |  |  |  |  |  |  |  |  |  |  |  |  |  | ✓ |  |  | CPMK-15 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | ✓ |  | CPMK-16 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | ✓ |
| CPMK                                                             | Minggu Ke                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       |           |       |        |        |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
|                                                                  | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2     | 3         | 4     | 5      | 6      | 7      | 8      | 9      | 10 | 11 | 12 | 13 | 14 | 15 | 16     |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-1                                                           | ✓                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       |           |       |        |        |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-2                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ✓     |           |       |        |        |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-3                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       | ✓         |       |        |        |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-4                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |           | ✓     |        |        |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-5                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |           |       | ✓      |        |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-6                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |           |       |        | ✓      |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-7                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |           |       |        |        | ✓      |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-8                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |           |       |        |        |        | ✓      |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-9                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |           |       |        |        |        |        | ✓      |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-10                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |           |       |        |        |        |        |        | ✓  |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-11                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |           |       |        |        |        |        |        |    | ✓  |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-12                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |           |       |        |        |        |        |        |    |    | ✓  |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-13                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |           |       |        |        |        |        |        |    |    |    | ✓  |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-14                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |           |       |        |        |        |        |        |    |    |    |    | ✓  |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-15                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |           |       |        |        |        |        |        |    |    |    |    |    | ✓  |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CPMK-16                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |           |       |        |        |        |        |        |    |    |    |    |    |    | ✓      |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Deskripsi Singkat MK                                             | Mata kuliah Asesmen dan Evaluasi Pembelajaran ini dirancang untuk membekali mahasiswa dengan kompetensi dalam merancang, melaksanakan, menganalisis, dan menginterpretasi asesmen pembelajaran pada konteks pendidikan dan pelatihan kejuruan. Fokus utama mata kuliah ini adalah penguasaan konsep asesmen modern berbasis pengukuran pendidikan, pemanfaatan pendekatan psikometri komputasi, serta penerapannya dalam pengembangan instrumen evaluasi pembelajaran yang valid dan reliabel. Mahasiswa akan mempelajari hubungan antara desain pembelajaran dan asesmen, teknik penyusunan tugas asesmen yang autentik, serta prinsip-prinsip dasar psikometri termasuk estimasi reliabilitas, validitas isi, dan reliabilitas antarpemilai. Selain itu, mahasiswa akan dilatih melakukan analisis karakteristik butir soal baik bersifat dikotomi maupun politomus menggunakan teori tes klasik (TTK), serta mempelajari teori respons butir (IRT) khususnya Model Rasch dan Partial Credit Model untuk memahami karakteristik butir dan kemampuan peserta didik secara lebih komprehensif. Mata kuliah ini juga membahas konsep fungsi informasi dalam IRT, serta integrasi asesmen berbasis komputer, termasuk Computer-Based Testing (CBT) dan Computer Adaptive Testing (CAT). Melalui tugas-tugas analitis, mahasiswa akan memperoleh pengalaman praktis dalam melakukan analisis butir menggunakan perangkat komputasi dan menginterpretasi hasilnya untuk perbaikan instrumen asesmen, peningkatan kualitas pembelajaran, serta pengambilan keputusan yang berbasis data. Secara keseluruhan, mata kuliah ini bertujuan untuk membentuk calon pendidik dan pengembang asesmen yang mampu merancang dan mengevaluasi instrumen pembelajaran secara komprehensif dan berbasis evidence, sesuai kebutuhan pada ranah pendidikan dan pelatihan kejuruan.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |           |       |        |        |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Pustaka                                                          | Utama :<br><br>1. . Finch, W.H.; & French, B. (2018). Educational and psychological measurement. New York: Routledge<br>2. Wu, M.; Tam, H.P.; & Jen, T.H. (2016). Educational measurement for applied researcher: Theory into practice. Singapore: Springer.<br>3. Bandalos, Deborah L., (2018). Measurement theory and applications for the social sciences. New York: Guilford Press<br>4. Kenneth S. Shultz, David J. Whitney, Michael J. Zickar. (2021). Measurement theory in action : case studies and exercises. New York<br>5. Dimitrov, Dimitar M. (2012). Statistical methods for validation of assessment scale data in counseling and related fi elds. New York: Wiley<br>6. Witte, Raymond H. (2012). Classroom assessment for teachers. New York: McGraw-Hill<br>7. Bernard P. Veldkamp • Cor Sluijter Editors. (2019). Theoretical and Practical Advances in Computer-based Educational Measurement. New York: Springer<br><br>Pendukung :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       |           |       |        |        |        |        |        |    |    |    |    |    |    |        |  |   |   |   |   |   |        |   |   |   |   |    |    |        |    |    |    |    |        |   |        |  |  |  |  |   |  |        |  |  |  |  |  |   |        |        |  |   |  |  |  |        |  |   |  |  |  |  |        |  |  |   |        |  |  |         |  |  |  |   |  |  |         |  |  |  |  |   |  |         |  |  |  |   |  |   |         |  |   |  |  |  |  |         |  |  |        |  |  |  |         |   |  |  |  |   |  |         |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |

| 1. Kline, Theresa. (2005). Psychological testing: a practical approach to design and evaluation. Thousand Oaks: Sage |                                                                                                                                                                                                                            |                                                                |                                                                                                                                |                                                                                  |                                                   |                                                                                                                                                                                                                                                                                                                                                                                  |                     |
|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>Dosen Pengampu</b>                                                                                                |                                                                                                                                                                                                                            | Prof. Dr. Ekohariadi, M.Pd.<br>Dr. Rina Harimurti, S.Pd., M.T. |                                                                                                                                |                                                                                  |                                                   |                                                                                                                                                                                                                                                                                                                                                                                  |                     |
| 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.Mengidentifikasi perbedaan asesmen, pengukuran, dan evaluasi.<br>2.Menjabarkan tujuan serta prinsip asesmen yang baik<br>3.Menjelaskan peran asesmen dalam peningkatan pembelajaran dan pelatihan                        | Aktivitas partisipatif                                         | <b>Kriteria:</b><br>Aktivitas partisipatif diberi skor maksimum 100                                                            | Presentasi, tanya jawab, diskusi, pemberian tugas                                | Presentasi, tanya jawab, diskusi, pemberian tugas | <b>Materi:</b> • Konsep asesmen, evaluasi, dan pengukuran • Tujuan dan fungsi asesmen dalam PTK • Prinsip-prinsip asesmen yang baik • Peran asesmen dalam peningkatan mutu pembelajaran vokasional • Jenis–jenis asesmen (diagnostik, formatif, sumatif, autentik)<br><b>Pustaka:</b> Witte, Raymond H. (2012). <i>Classroom assessment for teachers</i> . New York: McGraw-Hill | 3%                  |
| 2                                                                                                                    | 1.Menguraikan hubungan CPL– indikator–asesmen.<br>2.Menganalisis kesesuaian metode asesmen dengan strategi pembelajaran.<br>3.Menentukan strategi asesmen yang selaras dengan capaian pembelajaran pendidikan informatika. | Aktivitas partisipatif                                         | <b>Kriteria:</b><br>Aktivitas partisipatif diberi skor maksimum 100<br><br><b>Bentuk Penilaian :</b><br>Aktifitas Partisipasif | Presentasi, tanya jawab, diskusi, pemberian tugas                                | Presentasi, tanya jawab, diskusi, pemberian tugas | <b>Materi:</b> • Keterkaitan CPL – indikator – asesmen • Penyelarasan strategi pembelajaran dan asesmen • Instrumen asesmen berbasis kompetensi • Mengidentifikasi kebutuhan asesmen dalam lingkungan pendidikan informatika<br><b>Pustaka:</b> Witte, Raymond H. (2012). <i>Classroom assessment for teachers</i> . New York: McGraw-Hill                                       | 0%                  |
| 3                                                                                                                    | 1.Mengidentifikasi karakteristik asesmen autentik dalam bidang pendidikan informatika<br>2.Mengembangkan tugas asesmen berbasis kompetensi<br>3.Menyusun rubrik penilaian tugas autentik                                   | Aktivitas partisipatif                                         | <b>Kriteria:</b><br>Aktivitas partisipatif diberi skor maksimum 100<br><br><b>Bentuk Penilaian :</b><br>Aktifitas Partisipasif | Presentasi, tanya jawab, diskusi, pemberian tugas                                | Presentasi, tanya jawab, diskusi, pemberian tugas | <b>Materi:</b> • Konsep asesmen autentik • Kriteria tugas asesmen yang baik • Penyusunan tugas asesmen berbasis kinerja • Merancang rubrik penilaian • Contoh dan praktik desain tugas asesmen pendidikan informatika<br><b>Pustaka:</b> Witte, Raymond H. (2012). <i>Classroom assessment for teachers</i> . New York: McGraw-Hill                                              | 3%                  |

|   |                                                                                                                                                                                                                        |                        |                                                                                                                                         |                                                   |                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |
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| 4 | <p>1.Mengoperasikan perangkat lunak statistik/psikometri</p> <p>2.Mengelola dan menyiapkan dataset asesmen.</p> <p>3.Menampilkan statistik deskriptif dan visualisasi data asesmen.</p>                                | Aktivitas partisipatif | <p><b>Kriteria:</b><br/>Aktivitas partisipatif diberi skor maksimum 100</p> <p><b>Bentuk Penilaian :</b><br/>Aktifitas Partisipasif</p> | Presentasi, tanya jawab, diskusi, pemberian tugas | Presentasi, tanya jawab, diskusi, pemberian tugas | <p><b>Materi:</b> • Konsep dasar psikometri modern • Pengolahan data asesmen berbantuan komputer • Perangkat lunak (Excel, R, Python, SPSS, jASP, Winsteps, dsb.) • Statistik deskriptif untuk asesmen • Data cleaning &amp; data structure dalam asesmen</p> <p><b>Pustaka:</b> <i>Kenneth S. Shultz, David J. Whitney, Michael J. Zickar. (2021). Measurement theory in action : case studies and exercises. New York</i></p> | 3% |
| 5 | <p>1.Mengidentifikasi teknik estimasi reliabilitas internal.</p> <p>2.Mengestimasi reliabilitas (mis. Cronbach's Alpha).</p> <p>3.Menafsirkan nilai reliabilitas dan implikasinya terhadap kualitas instrumen.</p>     | Aktivitas partisipatif | <p><b>Kriteria:</b><br/>Aktivitas partisipatif diberi skor maksimum 100</p> <p><b>Bentuk Penilaian :</b><br/>Aktifitas Partisipasif</p> | Presentasi, tanya jawab, diskusi, pemberian tugas | Presentasi, tanya jawab, diskusi, pemberian tugas | <p><b>Materi:</b> • Konsep reliabilitas instrumen • Jenis reliabilitas (internal, bentuk paralel, dsb.) • Cronbach's Alpha, Split-half, dan estimasi lainnya • Interpretasi nilai reliabilitas • Implikasi terhadap perbaikan instrumen</p> <p><b>Pustaka:</b> <i>Bandalos, Deborah L., (2018). Measurement theory and applications for the social sciences. New York: Guilford Press</i></p>                                   | 3% |
| 6 | <p>1.Menyusun indikator dan kisi-kisi instrumen.</p> <p>2.Melaksanakan penilaian ahli (expert judgment).</p> <p>3.Menghitung dan menafsirkan validitas isi (mis. CVR/CVI).</p>                                         | Aktivitas partisipatif | <p><b>Kriteria:</b><br/>Aktivitas partisipatif diberi skor maksimum 100</p> <p><b>Bentuk Penilaian :</b><br/>Aktifitas Partisipasif</p> | Presentasi, tanya jawab, diskusi, pemberian tugas | Presentasi, tanya jawab, diskusi, pemberian tugas |                                                                                                                                                                                                                                                                                                                                                                                                                                 | 3% |
| 7 | <p>1.Menjelaskan konsep dasar interrater reliability.</p> <p>2.Menghitung reliabilitas antar-penilai (mis. Kappa/ICC).</p> <p>3.Menginterpretasi nilai interrater reliability untuk menilai konsistensi penilaian.</p> | Aktivitas partisipatif | <p><b>Kriteria:</b><br/>Aktivitas partisipatif diberi skor maksimum 100</p> <p><b>Bentuk Penilaian :</b><br/>Aktifitas Partisipasif</p> | Presentasi, tanya jawab, diskusi, pemberian tugas | Presentasi, tanya jawab, diskusi, pemberian tugas | <p><b>Materi:</b> • Konsep interrater reliability • Teknik estimasi (Cohen's Kappa, ICC) • Pengumpulan penilaian dari banyak penilai • Interpretasi reliabilitas antar-penilai</p> <p><b>Pustaka:</b> <i>Kenneth S. Shultz, David J. Whitney, Michael J. Zickar. (2021). Measurement theory in action : case studies and exercises. New York</i></p>                                                                            | 3% |

|   |                                                                                                                                             |                        |                                                                                                                                |                                                   |                                                   |                                                                                                                                                                                                                                                                                                                                                        |    |
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| 8 | 1.Menghitung tingkat kesukaran butir dikotomi.<br>2.Menghitung daya pembeda butir dikotomi.<br>3.Menafsirkan hasil analisis butir dikotomi. | Aktivitas partisipatif | <b>Kriteria:</b><br>Aktivitas partisipatif diberi skor maksimum 100<br><br><b>Bentuk Penilaian :</b><br>Aktifitas Partisipasif | Presentasi, tanya jawab, diskusi, pemberian tugas | Presentasi, tanya jawab, diskusi, pemberian tugas | <b>Materi:</b> • Konsep analisis butir berskala dikotomi • Indeks kesukaran butir • Indeks daya pembeda • Keterkaitan dengan reliabilitas tes • Contoh penerapan pada soal pilihan ganda<br><b>Pustaka:</b> <i>Kenneth S. Shultz, David J. Whitney, Michael J. Zickar. (2021). Measurement theory in action : case studies and exercises. New York</i> | 3% |
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| 9 | <p>1. Menggunakan perangkat lunak untuk analisis butir dikotomi.</p> <p>2. Menyajikan tabel ringkasan hasil analisis butir.</p> <p>3. Merumuskan rekomendasi perbaikan instrumen berdasarkan hasil analisis.</p> | <p>1. Mampu mengimpor dan menata data dikotomi (0–1) ke dalam perangkat lunak (misalnya: Excel, JASP, SPSS, R, Python). Mampu menjalankan prosedur analisis butir (difficulty/p, discrimination/point-biserial/DI). Mampu membaca output perangkat lunak. Mampu mengeksport atau menyimpan hasil analisis.</p> <p>2. Menyusun tabel ringkas berisi parameter utama (p-value, DI/point-biserial). Memberi label kolom/variabel secara benar. Menyertakan kategori/klasifikasi kualitas butir (misal: baik, revisi, drop). Menyajikan tabel dalam format rapi dan dapat dibaca.</p> <p>3. Mengidentifikasi butir bermasalah berdasarkan parameter analisis. Memberikan rekomendasi spesifik (misal: revisi stem, opsi pengecoh, drop item). Rekomendasi sesuai kaidah analisis butir (CTT). Alasan/justifikasi jelas berdasarkan data.</p> | <p><b>Kriteria:</b></p> <p>1.4 (Sangat Baik) Mengimpor data tepat; menjalankan analisis difficulty &amp; discrimination tanpa kesalahan; hasil akurat; output lengkap dan terdokumentasi. 3 (Baik) Mengimpor data tepat; menjalankan analisis butir dengan kesalahan minor; output cukup lengkap. 2 (Cukup) Mengimpor data dengan kesalahan; hanya sebagian analisis dapat dilakukan; interpretasi output terbatas. 1 (Kurang) Tidak mampu menjalankan analisis butir; kesalahan signifikan; output tidak tersedia.</p> <p>2.4 (Sangat Baik) Tabel lengkap: difficulty, discrimination, klasifikasi; format rapi; mudah dibaca; konsisten; dilengkapi penjelasan singkat. 3 (Baik) Tabel berisi p &amp; DI; format cukup rapi; klasifikasi disajikan tetapi kurang konsisten. 2 (Cukup) Tabel menyajikan sebagian parameter; tidak ada klasifikasi; format kurang rapi. 1 (Kurang) Tabel tidak lengkap/tidak sesuai; tata letak tidak jelas; sulit dibaca.</p> <p>3.4 (Sangat Baik) Rekomendasi sangat spesifik; sesuai dengan analisis p &amp; DI; berbasis data; memberikan contoh revisi; prioritas perbaikan jelas. 3 (Baik) Rekomendasi tepat; berbasis data; justifikasi singkat namun relevan. 2 (Cukup) Rekomendasi umum dan tidak detail; justifikasi lemah; hanya sebagian butir diidentifikasi. 1 (Kurang) Rekomendasi tidak relevan; tidak berdasarkan data; tidak mampu mengidentifikasi butir bermasalah.</p> <p><b>Bentuk Penilaian :</b><br/>Penilaian Hasil Project / Penilaian Produk</p> | <p>Presentasi, tanya jawab, diskusi, pemberian tugas</p> | <p>Presentasi, tanya jawab, diskusi, pemberian tugas</p> | <p><b>Materi:</b> • Praktik pengolahan data dikotomi • Interpretasi hasil analisis indeks butir • Rekomendasi perbaikan soal • Pelaporan hasil analisis</p> <p><b>Pustaka:</b> <i>Kenneth S. Shultz, David J. Whitney, Michael J. Zickar. (2021). Measurement theory in action : case studies and exercises. New York</i></p> | 25% |
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| 10 | 1.Mengidentifikasi karakteristik butir politomus<br>2.Mengestimasi parameter butir politomus (TTK).<br>3.Menafsirkan kinerja butir politomus pada asesmen PTK                       | Aktivitas partisipatif | <b>Kriteria:</b><br>Aktivitas partisipatif diberi skor maksimum 100<br><br><b>Bentuk Penilaian :</b><br>Aktifitas Partisipasif | Presentasi, tanya jawab, diskusi, pemberian tugas | Presentasi, tanya jawab, diskusi, pemberian tugas | <b>Materi:</b> • Konsep politomus vs dikotomi • Karakteristik butir berskala bertingkat (Likert/performance rating) • Parameter kesukaran & diskriminasi politomus • Analisis korelasi item-total • Interpretasi dan revisi butir<br><b>Pustaka:</b> <i>Kenneth S. Shultz, David J. Whitney, Michael J. Zickar. (2021). Measurement theory in action : case studies and exercises. New York</i> | 3% |
| 11 | 1.Menjelaskan konsep dan asumsi Model Rasch.<br>2.Mengestimasi parameter item dan kemampuan peserta.<br>3.Mengevaluasi kecocokan (fit) Model Rasch.                                 | Aktivitas partisipatif | <b>Kriteria:</b><br>Aktivitas partisipatif diberi skor maksimum 100<br><br><b>Bentuk Penilaian :</b><br>Aktifitas Partisipasif | Presentasi, tanya jawab, diskusi, pemberian tugas | Presentasi, tanya jawab, diskusi, pemberian tugas | <b>Materi:</b> • Dasar teori respons butir (IRT) • Asumsi dan karakteristik Model Rasch • Estimasi parameter kemampuan & item difficulty • Output Rasch: item map, person map, item fit • Interpretasi hasil Rasch<br><b>Pustaka:</b> <i>Wu, M.; Tam, H.P.; &amp; Jen, T.H. (2016). Educational measurement for applied researcher: Theory into practice. Singapore: Springer.</i>              | 3% |
| 12 | 1.Menjelaskan karakteristik dan asumsi PCM<br>2.Mengestimasi parameter butir dan ability pada PCM<br>3.Mengevaluasi model fit PCM dan menafsirkan hasilnya.                         | Aktivitas partisipatif | <b>Kriteria:</b><br>Aktivitas partisipatif diberi skor maksimum 100<br><br><b>Bentuk Penilaian :</b><br>Aktifitas Partisipasif | Presentasi, tanya jawab, diskusi, pemberian tugas | Presentasi, tanya jawab, diskusi, pemberian tugas | <b>Materi:</b> • Konsep PCM & perbedaan dengan Rasch dikotomi • Model PCM untuk data bertingkat • Estimasi parameter kategori dan butir • Interpretasi hasil PCM • Implikasi terhadap konstruksi instrumen<br><b>Pustaka:</b> <i>Wu, M.; Tam, H.P.; &amp; Jen, T.H. (2016). Educational measurement for applied researcher: Theory into practice. Singapore: Springer.</i>                      | 0% |
| 13 | 1.Menghasilkan kurva fungsi informasi butir (IIC).<br>2.Menghasilkan kurva fungsi informasi tes (TIC).<br>3.Menafsirkan presisi pengukuran pada berbagai tingkat kemampuan peserta. | Aktivitas partisipatif | <b>Kriteria:</b><br>Aktivitas partisipatif diberi skor maksimum 100<br><br><b>Bentuk Penilaian :</b><br>Aktifitas Partisipasif | Presentasi, tanya jawab, diskusi, pemberian tugas | Presentasi, tanya jawab, diskusi, pemberian tugas | <b>Materi:</b> • Konsep fungsi informasi dalam IRT • Kurva informasi item (IIC) dan tes (TIC) • Presisi pengukuran pada berbagai level kemampuan • Aplikasi fungsi informasi untuk desain tes<br><b>Pustaka:</b> <i>Wu, M.; Tam, H.P.; &amp; Jen, T.H. (2016). Educational measurement for applied researcher: Theory into practice. Singapore: Springer.</i>                                   | 3% |

|    |                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                   |                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |     |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 14 | <p>1. Menjelaskan konsep dan format CBT</p> <p>2. Menilai kelebihan dan keterbatasan CBT.</p> <p>3. Menganalisis persyaratan teknis untuk implementasi CBT.</p>                                                                 | Aktivitas partisipatif                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p><b>Kriteria:</b></p> <p>Aktivitas partisipatif diberi skor maksimum 100</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Presentasi, tanya jawab, diskusi, pemberian tugas | Presentasi, tanya jawab, diskusi, pemberian tugas | <p><b>Materi:</b></p> <ul style="list-style-type: none"> <li>• Konsep CBT</li> <li>• Format tes komputer</li> <li>• Kelebihan dan keterbatasan CBT</li> <li>• Persyaratan teknis dan operasional</li> <li>• Praktik penerapan CBT dalam PTK</li> </ul> <p><b>Pustaka:</b> Bernard P. Veldkamp • Cor Sluijter Editors. (2019). <i>Theoretical and Practical Advances in Computer-based Educational Measurement</i>. New York: Springer</p>                             | 3%  |
| 15 | <p>1. Menjelaskan konsep adaptivitas dalam asesmen.</p> <p>2. Menganalisis mekanisme pemilihan item dalam CAT.</p> <p>3. Menilai potensi implementasi CAT dalam konteks kejuruan.</p>                                           | Aktivitas partisipatif                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p><b>Kriteria:</b></p> <p>Aktivitas partisipatif diberi skor maksimum 100</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Presentasi, tanya jawab, diskusi, pemberian tugas | Presentasi, tanya jawab, diskusi, pemberian tugas | <p><b>Materi:</b></p> <ul style="list-style-type: none"> <li>• Konsep adaptivitas tes</li> <li>• Mekanisme pemilihan butir</li> <li>• Model pengukuran dalam CAT</li> <li>• Keunggulan dan tantangan penerapan</li> <li>• Potensi implementasi dalam PTK</li> </ul> <p><b>Pustaka:</b> Bernard P. Veldkamp • Cor Sluijter Editors. (2019). <i>Theoretical and Practical Advances in Computer-based Educational Measurement</i>. New York: Springer</p>                | 3%  |
| 16 | <p>1. Mengelola data butir politomus dengan perangkat lunak psikometri.</p> <p>2. Menginterpretasikan parameter butir dan kemampuan peserta</p> <p>3. Menyusun rekomendasi peningkatan instrumen berdasarkan hasil analisis</p> | <p>1. Mampu menyiapkan dan membersihkan data politomus (Likert/graded). Mampu memasukkan data ke dalam perangkat lunak psikometri (R, Python, IRT software, JASP, Winsteps, ConQuest, dll.). Mampu menjalankan analisis politomus (mis. PCM, GPCM, Graded Response Model, CTT). Mampu menyimpan dan mengeksport keluaran analisis.</p> <p>2. Menjelaskan parameter butir (mis.: discrimination, difficulty/threshold, fit statistics). Menjelaskan parameter kemampuan peserta (<math>\theta</math>/ability). Mengelompokkan kualitas butir berdasarkan hasil parameter. Menyampaikan interpretasi dengan jelas dan konsisten.</p> <p>3. Mengidentifikasi butir yang perlu dipertahankan, direvisi, atau dihapus. Memberikan rekomendasi spesifik sesuai parameter politomus. Memberikan justifikasi</p> | <p><b>Kriteria:</b></p> <p>1.4 (Sangat Baik) Data dipersiapkan tanpa kesalahan; analisis politomus dijalankan dengan benar; output lengkap (fit indices, threshold, info); hasil terdokumentasi rapi. 3 (Baik) Data dipersiapkan benar; analisis berjalan dengan kesalahan minor; output sebagian besar lengkap. 2 (Cukup) Data dikelola tetapi masih terdapat kesalahan; hanya sebagian analisis berhasil; output kurang lengkap. 1 (Kurang) Tidak mampu mempersiapkan data dan menjalankan analisis; output tidak tersedia/keliru.</p> <p>2.4 (Sangat Baik) Interpretasi parameter lengkap (butir &amp; <math>\theta</math>); akurat; klasifikasi tepat; mampu menjelaskan implikasi hasil; argumentasi kuat. 3 (Baik) Interpretasi parameter cukup lengkap; klasifikasi tepat; penjelasan cukup jelas meskipun kurang mendalam. 2 (Cukup)</p> | Presentasi, tanya jawab, diskusi, pemberian tugas | Presentasi, tanya jawab, diskusi, pemberian tugas | <p><b>Materi:</b></p> <ul style="list-style-type: none"> <li>• Pengolahan data politomus (TTK/IRT)</li> <li>• Interpretasi parameter butir dan kemampuan</li> <li>• Perbandingan analisis TTK vs IRT</li> <li>• Penyusunan rekomendasi perbaikan butir</li> <li>• Laporan hasil analisis</li> </ul> <p><b>Pustaka:</b> Kenneth S. Shultz, David J. Whitney, Michael J. Zickar. (2021). <i>Measurement theory in action : case studies and exercises</i>. New York</p> | 33% |

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|--|--|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
|  |  | berdasarkan data (fit indices, threshold, ICC, dll.). | <p>Interpretasi dasar; beberapa kesalahan; hanya sebagian parameter dibahas; penjelasan terbatas. 1 (Kurang) Tidak dapat menjelaskan parameter; interpretasi salah; tidak ada klasifikasi atau argumentasi.</p> <p>3.4 (Sangat Baik) Rekomendasi sangat spesifik; tepat; berbasis data; memberikan prioritas tindakan; menunjukkan pemahaman aspek teoretis dan teknis. 3 (Baik) Rekomendasi sesuai data; justifikasi ada meskipun terbatas; cukup spesifik. 2 (Cukup) Rekomendasi umum; justifikasi minim; tidak semua butir bermasalah teridentifikasi. 1 (Kurang) Rekomendasi tidak relevan/tidak berbasis data; salah dalam identifikasi butir; tanpa justifikasi.</p> <p><b>Bentuk Penilaian :</b><br/>Penilaian Hasil Project / Penilaian Produk</p> |  |  |  |  |
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#### Rekap Persentase Evaluasi : Project Based Learning

| No | Evaluasi                                   | Persentase |
|----|--------------------------------------------|------------|
| 1. | Aktifitas Partisipatif                     | 27%        |
| 2. | Penilaian Hasil Project / Penilaian Produk | 58%        |
|    |                                            | 85%        |

#### Catatan

- Capaian Pembelajaran Lulusan Prodi (CPL - Prodi)** adalah kemampuan yang dimiliki oleh setiap lulusan prodi yang merupakan internalisasi dari sikap, penguasaan pengetahuan dan ketrampilan sesuai dengan jenjang prodinya yang diperoleh melalui proses pembelajaran.
- CPL yang dibebankan pada mata kuliah** adalah beberapa capaian pembelajaran lulusan program studi (CPL-Prodi) yang digunakan untuk pembentukan/pengembangan sebuah mata kuliah yang terdiri dari aspek sikap, ketrampilan umum, ketrampilan khusus dan pengetahuan.
- CP Mata kuliah (CPMK)** adalah kemampuan yang dijabarkan secara spesifik dari CPL yang dibebankan pada mata kuliah, dan bersifat spesifik terhadap bahan kajian atau materi pembelajaran mata kuliah tersebut.
- Sub-CPMK Mata kuliah (Sub-CPMK)** adalah kemampuan yang dijabarkan secara spesifik dari CPMK yang dapat diukur atau diamati dan merupakan kemampuan akhir yang direncanakan pada tiap tahap pembelajaran, dan bersifat spesifik terhadap materi pembelajaran mata kuliah tersebut.
- Indikator penilaian** kemampuan dalam proses maupun hasil belajar mahasiswa adalah pernyataan spesifik dan terukur yang mengidentifikasi kemampuan atau kinerja hasil belajar mahasiswa yang disertai bukti-bukti.
- Kreteria Penilaian** adalah patokan yang digunakan sebagai ukuran atau tolok ukur ketercapaian pembelajaran dalam penilaian berdasarkan indikator-indikator yang telah ditetapkan. Kreteria penilaian merupakan pedoman bagi penilai agar penilaian konsisten dan tidak bias. Kreteria dapat berupa kuantitatif ataupun kualitatif.
- Bentuk penilaian:** tes dan non-tes.
- Bentuk pembelajaran:** Kuliah, Responsi, Tutorial, Seminar atau yang setara, Praktikum, Praktik Studio, Praktik Bengkel, Praktik Lapangan, Penelitian, Pengabdian Kepada Masyarakat dan/atau bentuk pembelajaran lain yang setara.
- Metode Pembelajaran:** Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project Based Learning, dan metode lainnya yg setara.
- Materi Pembelajaran** adalah rincian atau uraian dari bahan kajian yg dapat disajikan dalam bentuk beberapa pokok dan sub-pokok bahasan.
- Bobot penilaian** adalah prosentasi penilaian terhadap setiap pencapaian sub-CPMK yang besarnya proposional dengan tingkat kesulitan pencapaian sub-CPMK tsb., dan totalnya 100%.
- TM= Tatap Muka, PT=Penugasan terstruktur, BM=Belajar mandiri.

