

|                                                                                   |                                                                                                                                                                    |                                                                                                                                                                                                    |           |                                    |                           |                         |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------------------|---------------------------|-------------------------|
|  |                                                                                                                                                                    | <div>Universitas Negeri Surabaya</div> <div>S2 Kimia</div>                                                                                                                                         |           |                                    |                           | <div>Kode Dokumen</div> |
| <div>RENCANA PEMBELAJARAN SEMESTER</div>                                          |                                                                                                                                                                    |                                                                                                                                                                                                    |           |                                    |                           |                         |
| MATA KULIAH (MK)                                                                  |                                                                                                                                                                    | KODE                                                                                                                                                                                               | Rumpun MK | BOBOT (sks)                        | SEMESTER                  | Tgl Penyusunan          |
| Analisis Terapan                                                                  |                                                                                                                                                                    | 4710203034                                                                                                                                                                                         |           | 3                                  |                           | 25 Agustus 2026         |
| OTORISASI                                                                         |                                                                                                                                                                    | Pengembang RPS                                                                                                                                                                                     |           | Koordinator RMK                    | Koordinator Program Studi |                         |
|                                                                                   |                                                                                                                                                                    |                                                                                                                                                                                                    |           | Prof. Dr, Titik Taufikurohmah M.Si | NUNIEK HERDYASTUTI        |                         |
| Deskripsi Singkat MK                                                              | Kajian dalam teknologi, metode analisis terapan kimia meliputi pengukuran, kalibrasi, akurasi dan validasi terhadap metode analisis yang diciptakan secara mandiri |                                                                                                                                                                                                    |           |                                    |                           |                         |
| Capaian Pembelajaran (CP)                                                         | CPL-PRODI yang dibebankan pada MK                                                                                                                                  |                                                                                                                                                                                                    |           |                                    |                           |                         |
|                                                                                   | CPL                                                                                                                                                                | Mampu menunjukkan nilai-nilai agama, kebangsaan dan budaya nasional, serta etika akademik dalam melaksanakan tugasnya                                                                              |           |                                    |                           |                         |
|                                                                                   | CPL                                                                                                                                                                | Menunjukkan karakter tangguh, kolaboratif, adaptif, inovatif, inklusif, belajar sepanjang hayat, dan berjiwa kewirausahaan                                                                         |           |                                    |                           |                         |
|                                                                                   | CPL                                                                                                                                                                | 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                                                                                                                                                                | Mengembangkan diri secara berkelanjutan dan berkolaborasi.                                                                                                                                         |           |                                    |                           |                         |
|                                                                                   | Capaian Pembelajaran Mata Kuliah (CPMK)                                                                                                                            |                                                                                                                                                                                                    |           |                                    |                           |                         |
|                                                                                   | CPMK-1                                                                                                                                                             | Mampu menunjukkan sikap bertanggungjawab dalam menerapkan metode analisis dan menentukan instrument dengan tepat secara mandiri                                                                    |           |                                    |                           |                         |
|                                                                                   | CPMK-2                                                                                                                                                             | Mampu mengambil keputusan secara tepat terhadap metode dan instrumen yang digunakan serta dapat mengolah data hasil pengukuran secara mandiri                                                      |           |                                    |                           |                         |
|                                                                                   | CPMK-3                                                                                                                                                             | Mampu menciptakan prosedur analisis dengan memanfaatkan berbagai sumber data sesuai standar proses dan mutu                                                                                        |           |                                    |                           |                         |
|                                                                                   | CPMK-4                                                                                                                                                             | Membaca data dan pengolahan data dari instrumen                                                                                                                                                    |           |                                    |                           |                         |
|                                                                                   | CPMK-5                                                                                                                                                             | Teknik sampling                                                                                                                                                                                    |           |                                    |                           |                         |
|                                                                                   | CPMK-6                                                                                                                                                             | Teknik Pengukuran                                                                                                                                                                                  |           |                                    |                           |                         |
|                                                                                   | CPMK-7                                                                                                                                                             | memahami data hasil pengukuran dan pembacaan instrumen;                                                                                                                                            |           |                                    |                           |                         |
|                                                                                   | CPMK-8                                                                                                                                                             | Memahami aplikasi kalibrasi                                                                                                                                                                        |           |                                    |                           |                         |
|                                                                                   | CPMK-9                                                                                                                                                             | Memahami pembuatan kurva kaliberasi                                                                                                                                                                |           |                                    |                           |                         |
|                                                                                   | CPMK-10                                                                                                                                                            | Mengetahui pengukuran sampel dengan standar                                                                                                                                                        |           |                                    |                           |                         |
|                                                                                   | CPMK-11                                                                                                                                                            | Mengetahui pengukuran sampe ldengan standar adisi                                                                                                                                                  |           |                                    |                           |                         |
|                                                                                   | CPMK-12                                                                                                                                                            | Overlay kurva standar dan menentukan LOD serta LOQ                                                                                                                                                 |           |                                    |                           |                         |
|                                                                                   | CPMK-13                                                                                                                                                            | Menentukan LOD dan LOQ                                                                                                                                                                             |           |                                    |                           |                         |
|                                                                                   | Matrik CPL - CPMK                                                                                                                                                  |                                                                                                                                                                                                    |           |                                    |                           |                         |

|                                                                  |                                                 | <table><tr><td>CPMK</td><td>CPL</td><td>CPL</td><td>CPL</td><td>CPL</td></tr><tr><td>CPMK-1</td><td>✓</td><td></td><td></td><td></td></tr><tr><td>CPMK-2</td><td></td><td>✓</td><td></td><td></td></tr><tr><td>CPMK-3</td><td></td><td>✓</td><td></td><td></td></tr><tr><td>CPMK-4</td><td></td><td>✓</td><td></td><td></td></tr><tr><td>CPMK-5</td><td></td><td></td><td>✓</td><td></td></tr><tr><td>CPMK-6</td><td></td><td></td><td>✓</td><td></td></tr><tr><td>CPMK-7</td><td></td><td></td><td>✓</td><td></td></tr><tr><td>CPMK-8</td><td></td><td></td><td>✓</td><td></td></tr><tr><td>CPMK-9</td><td></td><td></td><td>✓</td><td></td></tr><tr><td>CPMK-10</td><td></td><td></td><td></td><td>✓</td></tr><tr><td>CPMK-11</td><td></td><td></td><td></td><td>✓</td></tr><tr><td>CPMK-12</td><td></td><td></td><td></td><td>✓</td></tr><tr><td>CPMK-13</td><td></td><td></td><td></td><td>✓</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | CPMK                                                                            | CPL                 | CPL                 | CPL | CPL | 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 |  |        |  | ✓ |   |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
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| CPMK                                                             | CPL                                             | CPL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | CPL                                                                             | CPL                 |                     |     |     |        |   |    |    |    |        |    |    |    |  |        |  |   |   |   |        |   |   |   |   |        |    |    |    |    |        |    |    |        |   |        |  |  |   |  |        |  |  |   |  |        |  |  |   |  |         |  |   |  |   |         |  |  |  |   |         |  |  |  |   |         |  |        |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| 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                                                          |                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                 | ✓                   |                     |     |     |        |   |    |    |    |        |    |    |    |  |        |  |   |   |   |        |   |   |   |   |        |    |    |    |    |        |    |    |        |   |        |  |  |   |  |        |  |  |   |  |        |  |  |   |  |         |  |   |  |   |         |  |  |  |   |         |  |  |  |   |         |  |        |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Matrik CPMK pada Kemampuan akhir tiap tahapan belajar (Sub-CPMK) |                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                 |                     |                     |     |     |        |   |    |    |    |        |    |    |    |  |        |  |   |   |   |        |   |   |   |   |        |    |    |    |    |        |    |    |        |   |        |  |  |   |  |        |  |  |   |  |        |  |  |   |  |         |  |   |  |   |         |  |  |  |   |         |  |  |  |   |         |  |        |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
|                                                                  |                                                 | <table><tr><th rowspan="2">CPMK</th><th colspan="16">Minggu Ke</th></tr><tr><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th><th>16</th></tr><tr><td>CPMK-1</td><td>✓</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK-2</td><td></td><td>✓</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK-3</td><td></td><td></td><td>✓</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK-4</td><td></td><td></td><td></td><td>✓</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK-5</td><td></td><td></td><td></td><td></td><td>✓</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK-6</td><td></td><td></td><td></td><td></td><td></td><td>✓</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK-7</td><td></td><td></td><td></td><td></td><td></td><td></td><td>✓</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK-8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>✓</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK-9</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>✓</td><td>✓</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK-10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>✓</td><td></td><td></td><td></td><td></td><td></td></tr><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></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                                                             | 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                                                          |                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                 |                     |                     |     |     |        |   |    |    |    |        |    |    | ✓  |  |        |  |   |   |   |        |   |   |   |   |        |    |    |    |    |        |    |    |        |   |        |  |  |   |  |        |  |  |   |  |        |  |  |   |  |         |  |   |  |   |         |  |  |  |   |         |  |  |  |   |         |  |        |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
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| Mg Ke-                                                           | Kemampuan akhir tiap tahapan belajar (Sub-CPMK) | Penilaian                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Bentuk Pembelajaran, Metode Pembelajaran, Penugasan Mahasiswa, [Estimasi Waktu] | Materi Pembelajaran | Bobot Penilaian (%) |     |     |        |   |    |    |    |        |    |    |    |  |        |  |   |   |   |        |   |   |   |   |        |    |    |    |    |        |    |    |        |   |        |  |  |   |  |        |  |  |   |  |        |  |  |   |  |         |  |   |  |   |         |  |  |  |   |         |  |  |  |   |         |  |        |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |  |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |

|     |                                                                   | Indikator                                                        | Kriteria & Bentuk        | Luring<br>(offline)                           | Daring<br>(online) |     |     |
|-----|-------------------------------------------------------------------|------------------------------------------------------------------|--------------------------|-----------------------------------------------|--------------------|-----|-----|
| (1) | (2)                                                               | (3)                                                              | (4)                      | (5)                                           | (6)                | (7) | (8) |
| 1   | Orientasi matakuliah analisis terapan                             | Dapat memahami analisis kimia secara umum                        | TERLAMPIR                | DISKUSI, TANYA JAWAB                          |                    |     | 5%  |
| 2   | Memahami analisis kimia secara kalsik, kualitatif dan kuantitatif | memahami analisis klasik secara kualitatif dan kuantitatif       | Tes tulis dan presentasi | case study                                    |                    |     | 5%  |
| 3   | Membuat prosedur analisis berdasarkan berbagai sumber;            | Membuat prosedur analisis                                        | essay                    | Ceramah dan diskusi                           |                    |     | 5%  |
| 4   | Menginterpretasikan data hasil analisis                           | Mengolah data hasil analisis;                                    | Tes tulis dan presentasi | case study contoh-contoh data hasil analisis; |                    |     | 5%  |
| 5   | Memahami teknik pengukuran                                        | Memahami teknik sampling dan preparasi sampel;                   | Tes tulis dan presentasi | case study mengenai teknik sampling           |                    |     | 10% |
| 6   | memahami data pengukuran                                          | memahami data pengukuran                                         | essay                    | Luring                                        |                    |     | 5%  |
| 7   | memahami data hasil pengukuran dan pembacaan instrumen            | Dapat memahami data hasil pengukuran dan pembacaan instrumen     | essay                    | case study pemaparan berbagai data instrumen  |                    |     | 5%  |
| 8   | memahami data hasil pengukuran dan pembacaan instrumen            | Dapat memahami data hasil pengukuran dan pembacaan instrumen     | essay                    | case study metode kalibrasi                   |                    |     | 5%  |
| 9   | Memahami aplikasi kalibrasi                                       | Membuat kurva kalibrasi berdasarkan data yang ada;               | essay                    | ceramah dan diskusi                           |                    |     | 5%  |
| 10  | Memahami pembuatan kurva kalibrasi                                | Mampu membuat kurva kalibrasi                                    | essay                    | ceramah dan diskusi                           |                    |     | 5%  |
| 11  | Mengetahui pengukuran sampel dengan standar                       | Dapat melakukan pengukuran sampel menggunakan kurva standar      | essay                    | ceramah dan diskusi                           |                    |     | 10% |
| 12  | Mengetahui pengukuran sampel dengan standar adisi                 | Dapat melakukan pengukuran sampel menggunakan kuva standar adisi | Tes tulis dan presentasi | ceramah dan diskusi                           |                    |     | 10% |

|    |                                                                                                             |                                                      |       |                     |  |  |     |
|----|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------|-------|---------------------|--|--|-----|
| 13 | Membuat kurva standar dengan program excel                                                                  | Membuat kurva standar dengan program excel           | essay | ceramah dan diskusi |  |  | 5%  |
| 14 | Membuat kurva standar dengan program originlab                                                              | Dapat membuat kurva standar dengan program originlab | essay | ceramah dan diskusi |  |  | 5%  |
| 15 | Overlay kurva                                                                                               | Dapat mngoverlay kurva                               | essay | ceramah dan diskusi |  |  | 10% |
| 16 | Melakukan analisis terapan pada limbah yang larut pada air (Dosen dari Alumni UNESA yang kerja pada DINKES) |                                                      |       |                     |  |  | 5%  |

#### Catatan

1. **Capaian Pembelajaran Lulusan Program Studi (CPL-Prodi)** adalah rumusan kemampuan yang harus dimiliki oleh lulusan program studi yang mencakup sikap, penguasaan pengetahuan, keterampilan umum, dan keterampilan khusus sesuai dengan jenjang kualifikasi, yang diperoleh melalui proses pembelajaran.
2. **CPL-Prodi yang dibebankan pada Mata Kuliah** adalah bagian dari CPL-Prodi yang dipilih dan relevan untuk dikembangkan melalui suatu mata kuliah, sebagai dasar perumusan capaian pembelajaran mata kuliah.
3. **Capaian Pembelajaran Mata Kuliah (CPMK)** adalah kemampuan yang dirumuskan secara spesifik dan diturunkan dari CPL-Prodi yang dibebankan pada mata kuliah, serta menggambarkan kompetensi yang harus dicapai mahasiswa setelah menyelesaikan mata kuliah.
4. **Sub-CPMK** adalah kemampuan akhir yang direncanakan pada setiap tahap pembelajaran, sebagai penjabaran lebih rinci dari CPMK, bersifat terukur dan dapat diamati sesuai dengan materi pembelajaran.
5. **Indikator Penilaian** adalah pernyataan spesifik dan terukur yang digunakan untuk menilai ketercapaian Sub-CPMK, baik dari proses maupun hasil belajar mahasiswa, yang didukung dengan bukti penilaian.
6. **Kriteria Penilaian** adalah tolok ukur yang digunakan untuk menentukan tingkat ketercapaian hasil belajar mahasiswa berdasarkan indikator penilaian, guna menjamin penilaian yang objektif, konsisten, dan adil. Kriteria penilaian dapat bersifat kuantitatif dan/atau kualitatif.
7. **Bentuk Penilaian** meliputi penilaian tes dan non-tes sesuai dengan karakteristik capaian pembelajaran.
8. **Bentuk Pembelajaran** meliputi kuliah, responsi, tutorial, seminar atau bentuk lain yang setara, praktikum, praktik studio, praktik bengkel, praktik lapangan, penelitian, dan pengabdian kepada masyarakat.
9. **Metode Pembelajaran** merupakan cara penyampaian pembelajaran yang digunakan untuk mencapai capaian pembelajaran, antara lain Small Group Discussion, Project Based Learning, Case Based Learning, Collaborative Learning, Discovery Learning, Self-Directed Learning, serta metode lain yang relevan.
10. **Materi Pembelajaran** adalah bahan kajian yang disusun secara sistematis dalam bentuk pokok dan sub-pokok bahasan untuk mendukung pencapaian Sub-CPMK.
11. **Bobot Penilaian** adalah persentase kontribusi setiap komponen penilaian terhadap nilai akhir mata kuliah, yang ditetapkan secara proporsional sesuai tingkat kompleksitas dan ketercapaian Sub-CPMK, dengan total keseluruhan sebesar 100%.
12. TM = Tatap Muka, PT = Penugasan Terstruktur, BM = Belajar Mandiri.