

|  | <p align="center"><b>Universitas Negeri Surabaya</b><br/> <b>Fakultas Matematika dan Ilmu Pengetahuan Alam</b><br/> <b>Program Studi S1 Pendidikan Sains</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                               |                 |        |           |                           | Kode Dokumen   |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|                                                                                   | <p align="center"><b>RENCANA PEMBELAJARAN SEMESTER</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                               |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MATA KULIAH (MK)                                                                  | KODE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Rumpun MK                                                                                                                                                                                                                                                                     | BOBOT (sks)     |        |           | SEMESTER                  | Tgl Penyusunan |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Kimia Umum                                                                        | 8420103074                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                               | T=3             | P=0    | ECTS=4.77 | 1                         | 23 Juni 2025   |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OTORISASI                                                                         | Pengembang RPS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                               | Koordinator RMK |        |           | Koordinator Program Studi |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                               |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model Pembelajaran                                                                | Project Based Learning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                               |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Capaian Pembelajaran (CP)                                                         | CPL-PRODI yang dibebankan pada MK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                               |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                   | CPL-5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Demonstrate scientific, critical, and innovative attitudes in integrated science learning, laboratory activities, and professional-related tasks                                                                                                                              |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                   | CPL-8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Make decision based on data/information in order to complete tasks and evaluate the performance that has been done                                                                                                                                                            |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                   | CPL-12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Demonstrate basic knowledge of physics, chemistry, and biology                                                                                                                                                                                                                |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                   | Capaian Pembelajaran Mata Kuliah (CPMK)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                               |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                   | CPMK - 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Menguasai konsep-konsep dasar kimia untuk menyelesaikan permasalahan-permasalahan yang berkaitan dengan kimia.                                                                                                                                                                |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                   | CPMK - 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Membuat keputusan tentang keterkaitan konsep dasar kimia dengan pengetahuan sesuai program studinya.                                                                                                                                                                          |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                   | CPMK - 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Mampu mendemonstrasikan sikap ilmiah dalam kegiatan laboratorium yang sesuai                                                                                                                                                                                                  |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                   | Matrik CPL - CPMK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                               |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <table border="1"> <tr> <td>CPMK</td> <td>CPL-5</td> <td>CPL-8</td> <td>CPL-12</td> </tr> <tr> <td>CPMK-1</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CPMK-2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CPMK-3</td> <td></td> <td></td> <td></td> </tr> </table> |                 |        |           |                           |                | CPMK | CPL-5 | CPL-8 | CPL-12 | CPMK-1 |    |    |    | CPMK-2 |      |           |  | CPMK-3 |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                   | CPMK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | CPL-5                                                                                                                                                                                                                                                                         | CPL-8           | CPL-12 |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                   | CPMK-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                               |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                   | CPMK-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                               |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                   | CPMK-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                               |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                   | Matrik CPMK pada Kemampuan akhir tiap tahapan belajar (Sub-CPMK)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                               |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                   | <table border="1"> <tr> <th rowspan="2">CPMK</th> <th colspan="16">Minggu Ke</th> </tr> <tr> <th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th><th>16</th> </tr> <tr> <td>CPMK-1</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>CPMK-2</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>CPMK-3</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </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                                                                              | Minggu Ke                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                               |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                   | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2                                                                                                                                                                                                                                                                             | 3               | 4      | 5         | 6                         | 7              | 8    | 9     | 10    | 11     | 12     | 13 | 14 | 15 | 16     |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CPMK-1                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                               |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CPMK-2                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                               |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CPMK-3                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                               |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Deskripsi Singkat MK                                                              | Matakuliah ini membahas tentang penerapan berbagai sumber belajar, media pembelajaran, dan kegiatan laboratorium yang sesuai untuk mendukung penguasaan konsep: Metode Ilmiah, Sifat-sifat Materi, Stoikiometri, Sistem Periodik Unsur, Ikatan Kimia, Wujud Zat, Energetika, Larutan, Sistem Koloid, Kimia Karbon dan Biokimia, Bahan Kimia Sehari-hari, serta menanamkan sikap berani membuat keputusan, jujur, dan bertanggungjawab. Pembelajaran disajikan dalam bentuk teori, praktikum dan pemberian tugas.                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                               |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|                                                                                   | 1. Tim Kimia Umum. 2013. Kimia Umum . Surabaya: Jurusan Kimia FMIPA Unesa.<br>2. Brady, James.E. 2004 . General Chemistry. Principle and Structure. 4th . ed. New York. John Willey and Sons, Inc.<br>3. Chang, Raymond. 2005. General Chemistry The Essential Concepts Third Edition. USA: McGraw Hill.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                               |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                   | Pendukung :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                               |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Dosen Pengampu                                                                    | Dra. Martini, M.Pd.<br>Prof. Dr. Erman, M.Pd.<br>Dr. Siti Nurul Hidayati, S.Pd., M.Pd.<br>Beni Setiawan, S.Pd., M.Pd., Ph.D.<br>Wahyu Budi Sabtiawan, S.Si., M.Pd., M.Sc.<br>Ernita Vika Aulia, S.Pd., M.Pd.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                               |                 |        |           |                           |                |      |       |       |        |        |    |    |    |        |      |           |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| Mg Ke- | Kemampuan akhir tiap tahapan belajar (Sub-CPMK)                                                                                                                                                                                                                                                                                                                                                                                | Penilaian                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                            | Bentuk Pembelajaran, Metode Pembelajaran, Penugasan Mahasiswa, [ Estimasi Waktu] |                                                                                        | Materi Pembelajaran [ Pustaka ]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Bobot Penilaian (%) |
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|        |                                                                                                                                                                                                                                                                                                                                                                                                                                | Indikator                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Kriteria & Bentuk                                                                                                                                                          | Luring (offline)                                                                 | Daring (online)                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |
| (1)    | (2)                                                                                                                                                                                                                                                                                                                                                                                                                            | (3)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | (4)                                                                                                                                                                        | (5)                                                                              | (6)                                                                                    | (7)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | (8)                 |
| 1      | Menjelaskan definisi materi dan klasifikasi materi; Menyebutkan contoh-contoh dari masing-masing jenis materi dalam kehidupan sehari-hari; Membedakan antara unsur, senyawa, dan campuran; Menjelaskan hubungan antara unsur, senyawa, dan campuran; Melakukan evaluasi suatu fenomena/kasus terkait Topik Materi dan Klasifikasinya; Mengaplikasikan konsep unsur, senyawa, dan campuran pada kegiatan praktikum laboratorium | 1. Mahasiswa dapat menjelaskan definisi materi dan klasifikasi materi.<br>2. Mahasiswa dapat menyebutkan contoh-contoh dari masing-masing jenis materi dalam kehidupan sehari-hari.<br>3. Mahasiswa dapat membedakan antara unsur, senyawa, dan campuran.<br>4. Mahasiswa dapat menjelaskan hubungan antara unsur, senyawa, dan campuran.<br>5. Mahasiswa dapat mengevaluasi suatu fenomena/kasus terkait Topik Materi dan Klasifikasinya.<br>6. Mahasiswa dapat mengaplikasikan konsep unsur, senyawa, dan campuran pada kegiatan praktikum laboratorium. | <b>Kriteria:</b><br>Ketepatan dan penguasaan sesuai indikator penilaian (rubrik penilaian)<br><br><b>Bentuk Penilaian :</b><br>Aktifitas Partisipatif, Penilaian Praktikum | Case based learning dan diskusi 3 x 50'                                          | Case based learning dan diskusi via aplikasi online/tatap maya atau LMS UNESA. 3 x 50' | <b>Materi:</b> Materi dan Klasifikasinya<br><b>Pustaka:</b> <i>Tim Kimia Umum. 2013. Kimia Umum . Surabaya: Jurusan Kimia FMIPA Unesa.</i><br><br><b>Materi:</b> Materi dan Klasifikasinya<br><b>Pustaka:</b> <i>Brady, James.E. 2004 . General Chemistry. Principle and Structure. 4th . ed. New York. John Willey and Sons, Inc.</i><br><br><b>Materi:</b> Materi dan Klasifikasinya<br><b>Pustaka:</b> <i>Chang, Raymond. 2005. General Chemistry The Essential Concepts Third Edition. USA: McGraw Hill.</i><br><br><b>Materi:</b> Materi dan Klasifikasinya<br><b>Pustaka:</b> <i>Artikel terkait fenomena-fenomena/kasus kontekstual</i> | 10%                 |

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| 5 | Menjelaskan sejarah teori atom; Menjelaskan Teori Atom Modern; Menjelaskan konsep ion dan molekul; Menjelaskan konsep rumus molekul dan empiris; Menuliskan konfigurasi elektron; Menjelaskan konsep keperiodikan unsur; Menghitung muatan inti efektif dan shielding effect; Melakukan evaluasi suatu fenomena/kasus terkait Topik Atom, Ion, dan Molekul | <ol style="list-style-type: none"> <li>1. Mahasiswa dapat menjelaskan sejarah teori atom.</li> <li>2. Mahasiswa dapat menjelaskan Teori Atom Modern.</li> <li>3. Mahasiswa dapat menjelaskan konsep ion dan molekul.</li> <li>4. Mahasiswa dapat menjelaskan konsep rumus molekul dan empiris.</li> <li>5. Mahasiswa dapat menuliskan konfigurasi elektron.</li> <li>6. Mahasiswa dapat menjelaskan konsep keperiodikan unsur.</li> <li>7. Mahasiswa dapat mengevaluasi suatu fenomena/kasus terkait Topik Atom, Ion, dan Molekul.</li> </ol> | <p><b>Kriteria:</b><br/>Ketepatan dan penguasaan sesuai indikator penilaian (rubrik penilaian)</p> <p><b>Bentuk Penilaian :</b><br/>Aktifitas Partisipatif</p> | Case based learning dan diskusi 3 x 50' | Case based learning dan diskusi via aplikasi online/tatap maya atau LMS UNESA. 3 x 50' | <p><b>Materi:</b> Atom, Ion, Molekul</p> <p><b>Pustaka:</b> <i>Tim Kimia Umum. 2013. Kimia Umum . Surabaya: Jurusan Kimia FMIPA Unesa.</i></p> <hr/> <p><b>Materi:</b> Atom, Ion, Molekul</p> <p><b>Pustaka:</b> Brady, James.E. 2004 . <i>General Chemistry. Principle and Structure. 4th . ed. New York. John Willey and Sons, Inc.</i></p> <hr/> <p><b>Materi:</b> Atom, Ion, Molekul</p> <p><b>Pustaka:</b> Chang, Raymond. 2005. <i>General Chemistry The Essential Concepts Third Edition. USA: McGraw Hill.</i></p> <hr/> <p><b>Materi:</b> Atom, Ion, Molekul</p> <p><b>Pustaka:</b> Artikel terkait fenomena-fenomena/kasus kontekstual</p> | 10% |
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| 6 | Menjelaskan sejarah teori atom; Menjelaskan Teori Atom Modern; Menjelaskan konsep ion dan molekul; Menjelaskan konsep rumus molekul dan empiris; Menuliskan konfigurasi elektron; Menjelaskan konsep keperiodikan unsur; Menghitung muatan inti efektif dan shielding effect; Melakukan evaluasi suatu fenomena/kasus terkait Topik Atom, Ion, dan Molekul | <ol style="list-style-type: none"> <li>1. Mahasiswa dapat menjelaskan sejarah teori atom.</li> <li>2. Mahasiswa dapat menjelaskan Teori Atom Modern.</li> <li>3. Mahasiswa dapat menjelaskan konsep ion dan molekul.</li> <li>4. Mahasiswa dapat menjelaskan konsep rumus molekul dan empiris.</li> <li>5. Mahasiswa dapat menuliskan konfigurasi elektron.</li> <li>6. Mahasiswa dapat menjelaskan konsep keperiodikan unsur.</li> <li>7. Mahasiswa dapat mengevaluasi suatu fenomena/kasus terkait Topik Atom, Ion, dan Molekul.</li> </ol> | <p><b>Kriteria:</b><br/>Ketepatan dan penguasaan sesuai indikator penilaian (rubrik penilaian)</p> <p><b>Bentuk Penilaian :</b><br/>Aktifitas Partisipatif</p> | Case based learning dan diskusi 3 x 50' | Case based learning dan diskusi via aplikasi online/tatap maya atau LMS UNESA. 3 x 50' | <p><b>Materi:</b> Atom, Ion, Molekul</p> <p><b>Pustaka:</b> <i>Tim Kimia Umum. 2013. Kimia Umum . Surabaya: Jurusan Kimia FMIPA Unesa.</i></p> <hr/> <p><b>Materi:</b> Atom, Ion, Molekul</p> <p><b>Pustaka:</b> <i>Brady, James.E. 2004 . General Chemistry. Principle and Structure. 4th . ed. New York. John Willey and Sons, Inc.</i></p> <hr/> <p><b>Materi:</b> Atom, Ion, Molekul</p> <p><b>Pustaka:</b> <i>Chang, Raymond. 2005. General Chemistry The Essential Concepts Third Edition. USA: McGraw Hill.</i></p> <hr/> <p><b>Materi:</b> Atom, Ion, Molekul</p> <p><b>Pustaka:</b> <i>Artikel terkait fenomena-fenomena/kasus kontekstual</i></p> | 10% |
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|---|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 7 | Mendeskripsikan ikatan-ikatan kimia (ion, kovalen, logam); Mendeskripsikan gaya-gaya kimia (Ikatan Van der Walls) | <p>1. Mahasiswa dapat mendeskripsikan ikatan-ikatan kimia (ion, kovalen, logam).</p> <p>2. Mahasiswa dapat mendeskripsikan gaya-gaya kimia (Ikatan Van der Walls).</p> <p>3. Mahasiswa dapat mengevaluasi suatu fenomena/kasus terkait Topik Ikatan Kimia.</p> | <p><b>Kriteria:</b><br/>Ketepatan dan penguasaan sesuai indikator penilaian (rubrik penilaian)</p> <p><b>Bentuk Penilaian :</b><br/>Aktifitas Partisipatif</p> | Case based learning dan diskusi 3 x 50' | Case based learning dan diskusi via aplikasi online/tatap maya atau LMS UNESA. 3 x 50' | <p><b>Materi:</b> Ikatan Kimia</p> <p><b>Pustaka:</b> <i>Tim Kimia Umum. 2013. Kimia Umum . Surabaya: Jurusan Kimia FMIPA Unesa.</i></p> <hr/> <p><b>Materi:</b> Ikatan Kimia</p> <p><b>Pustaka:</b> <i>Brady, James.E. 2004 . General Chemistry. Principle and Structure. 4th . ed. New York. John Willey and Sons, Inc.</i></p> <hr/> <p><b>Materi:</b> Ikatan Kimia</p> <p><b>Pustaka:</b> <i>Chang, Raymond. 2005. General Chemistry The Essential Concepts Third Edition. USA: McGraw Hill.</i></p> <hr/> <p><b>Materi:</b> Ikatan Kimia</p> <p><b>Pustaka:</b> <i>Artikel terkait fenomena-fenomena/kasus kontekstual</i></p> | 10% |
| 8 |                                                                                                                   | Indikator penilaian dari Pertemuan 1 s.d 7                                                                                                                                                                                                                     | <p><b>Kriteria:</b><br/>Ketepatan dan penguasaan sesuai indikator penilaian (rubrik penilaian)</p>                                                             | UTS (Paper-pencil test) 2 x 50'         | UTS (Paper-pencil test via aplikasi online/LMS UNESA) 2 x 50'                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0%  |

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| 9 | Menjelaskan hukum-hukum dasar kimia: Hukum Kekekalan Massa, Perbandingan Tetap, Perbandingan Berganda, Perbandingan Timbal Balik, Perbandingan Volume, Avogadro; Melakukan perhitungan berdasarkan konsep stokiometri; Melakukan evaluasi suatu fenomena/kasus terkait Topik Stoikiometri; Mengaplikasikan konsep stokiometri berdasarkan hukum-hukum terkait pada kegiatan praktikum laboratorium | <p>1. Mahasiswa dapat menjelaskan hukum-hukum dasar kimia: Hukum Kekekalan Massa, Perbandingan Tetap, Perbandingan Berganda, Perbandingan Timbal Balik, Perbandingan Volume, Avogadro.</p> <p>2. Mahasiswa dapat melakukan perhitungan berdasarkan konsep stokiometri.</p> <p>3. Mahasiswa dapat melakukan evaluasi suatu fenomena/kasus terkait Topik Stoikiometri.</p> | <p><b>Kriteria:</b><br/>Ketepatan dan penguasaan sesuai indikator penilaian (rubrik penilaian)</p> <p><b>Bentuk Penilaian :</b><br/>Aktifitas Partisipatif, Penilaian Praktikum</p> | Case based learning dan diskusi 3 x 50' | Case based learning dan diskusi via aplikasi online/tatap maya atau LMS UNESA. 3 x 50' | <p><b>Materi:</b><br/>Stoikiometri</p> <p><b>Pustaka:</b> <i>Tim Kimia Umum. 2013. Kimia Umum . Surabaya: Jurusan Kimia FMIPA Unesa.</i></p> <hr/> <p><b>Materi:</b><br/>Stoikiometri</p> <p><b>Pustaka:</b> <i>Brady, James.E. 2004 . General Chemistry. Principle and Structure. 4th . ed. New York. John Willey and Sons, Inc.</i></p> <hr/> <p><b>Materi:</b><br/>Stoikiometri</p> <p><b>Pustaka:</b> <i>Chang, Raymond. 2005. General Chemistry The Essential Concepts Third Edition. USA: McGraw Hill.</i></p> <hr/> <p><b>Materi:</b><br/>Stoikiometri</p> <p><b>Pustaka:</b> <i>Artikel terkait fenomena-fenomena/kasus kontekstual</i></p> | 10% |
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| 10 | Menjelaskan hukum-hukum dasar kimia: Hukum Kekekalan Massa, Perbandingan Tetap, Perbandingan Berganda, Perbandingan Timbal Balik, Perbandingan Volume, Avogadro; Melakukan perhitungan berdasarkan konsep stokiometri; Melakukan evaluasi suatu fenomena/kasus terkait Topik Stoikiometri; Mengaplikasikan konsep stokiometri berdasarkan hukum-hukum terkait pada kegiatan praktikum laboratorium | <p>1. Mahasiswa dapat menjelaskan hukum-hukum dasar kimia: Hukum Kekekalan Massa, Perbandingan Tetap, Perbandingan Berganda, Perbandingan Timbal Balik, Perbandingan Volume, Avogadro.</p> <p>2. Mahasiswa dapat melakukan perhitungan berdasarkan konsep stokiometri.</p> <p>3. Mahasiswa dapat melakukan evaluasi suatu fenomena/kasus terkait Topik Stoikiometri.</p> | <p><b>Kriteria:</b><br/>Ketepatan dan penguasaan sesuai indikator penilaian (rubrik penilaian)</p> <p><b>Bentuk Penilaian :</b><br/>Aktifitas Partisipatif, Penilaian Praktikum</p> | Case based learning dan diskusi 3 x 50' | Case based learning dan diskusi via aplikasi online/tatap maya atau LMS UNESA. 3 x 50' | <p><b>Materi:</b><br/>Stoikiometri</p> <p><b>Pustaka:</b> <i>Tim Kimia Umum. 2013. Kimia Umum . Surabaya: Jurusan Kimia FMIPA Unesa.</i></p> <hr/> <p><b>Materi:</b><br/>Stoikiometri</p> <p><b>Pustaka:</b> <i>Brady, James.E. 2004 . General Chemistry. Principle and Structure. 4th . ed. New York. John Willey and Sons, Inc.</i></p> <hr/> <p><b>Materi:</b><br/>Stoikiometri</p> <p><b>Pustaka:</b> <i>Chang, Raymond. 2005. General Chemistry The Essential Concepts Third Edition. USA: McGraw Hill.</i></p> <hr/> <p><b>Materi:</b><br/>Stoikiometri</p> <p><b>Pustaka:</b> <i>Artikel terkait fenomena-fenomena/kasus kontekstual</i></p> | 10% |
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| 11 | Menjelaskan hukum-hukum dasar kimia: Hukum Kekekalan Massa, Perbandingan Tetap, Perbandingan Berganda, Perbandingan Timbal Balik, Perbandingan Volume, Avogadro; Melakukan perhitungan berdasarkan konsep stokiometri; Melakukan evaluasi suatu fenomena/kasus terkait Topik Stoikiometri; Mengaplikasikan konsep stokiometri berdasarkan hukum-hukum terkait pada kegiatan praktikum laboratorium | <p>1. Mahasiswa dapat menjelaskan hukum-hukum dasar kimia: Hukum Kekekalan Massa, Perbandingan Tetap, Perbandingan Berganda, Perbandingan Timbal Balik, Perbandingan Volume, Avogadro.</p> <p>2. Mahasiswa dapat melakukan perhitungan berdasarkan konsep stokiometri.</p> <p>3. Mahasiswa dapat melakukan evaluasi suatu fenomena/kasus terkait Topik Stoikiometri.</p> | <p><b>Kriteria:</b><br/>Ketepatan dan penguasaan sesuai indikator penilaian (rubrik penilaian)</p> <p><b>Bentuk Penilaian :</b><br/>Aktifitas Partisipatif, Penilaian Praktikum</p> | Case based learning dan diskusi 3 x 50' | Case based learning dan diskusi via aplikasi online/tatap maya atau LMS UNESA. 3 x 50' | <p><b>Materi:</b><br/>Stoikiometri</p> <p><b>Pustaka:</b> <i>Tim Kimia Umum. 2013. Kimia Umum . Surabaya: Jurusan Kimia FMIPA Unesa.</i></p> <hr/> <p><b>Materi:</b><br/>Stoikiometri</p> <p><b>Pustaka:</b> <i>Brady, James.E. 2004 . General Chemistry. Principle and Structure. 4th . ed. New York. John Willey and Sons, Inc.</i></p> <hr/> <p><b>Materi:</b><br/>Stoikiometri</p> <p><b>Pustaka:</b> <i>Chang, Raymond. 2005. General Chemistry The Essential Concepts Third Edition. USA: McGraw Hill.</i></p> <hr/> <p><b>Materi:</b><br/>Stoikiometri</p> <p><b>Pustaka:</b> <i>Artikel terkait fenomena-fenomena/kasus kontekstual</i></p> | 10% |
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| 12 | <p>Menjelaskan istilah-istilah dasar kelarutan serta syarat kelarutan melalui perhitungan hasil kali kelarutan; Menjelaskan istilah-istilah dasar Asam-Basa serta konsep dasar Asam-Basa berdasarkan Arrhenius, Bronsted-Lowry, dan Lewis; Menjelaskan istilah-istilah dasar sifat koligatif; Menjelaskan istilah-istilah dasar larutan penyangga dan syarat larutan dikatakan larutan penyangga; Menjelaskan istilah-istilah dasar hidrolisis larutan; Melakukan evaluasi suatu fenomena/kasus terkait Topik Larutan; Mengaplikasikan konsep dasar asam-basa pada kegiatan praktikum laboratorium</p> | <ol style="list-style-type: none"> <li>1. Mahasiswa dapat menjelaskan istilah-istilah dasar kelarutan serta syarat kelarutan melalui perhitungan hasil kali kelarutan.</li> <li>2. Mahasiswa dapat menjelaskan istilah-istilah dasar Asam-Basa serta konsep dasar Asam-Basa berdasarkan Arrhenius, Bronsted-Lowry, dan Lewis.</li> <li>3. Mahasiswa dapat menjelaskan istilah-istilah dasar sifat koligatif.</li> <li>4. Mahasiswa dapat menjelaskan istilah-istilah dasar larutan penyangga dan syarat larutan dikatakan larutan penyangga.</li> <li>5. Mahasiswa dapat menjelaskan istilah-istilah dasar hidrolisis larutan.</li> <li>6. Mahasiswa dapat mengevaluasi suatu fenomena/kasus terkait Topik Larutan.</li> <li>7. Mahasiswa dapat mengaplikasikan konsep dasar asam-basa pada kegiatan praktikum laboratorium.</li> </ol> | <p><b>Kriteria:</b><br/>Ketepatan dan penguasaan sesuai indikator penilaian (rubrik penilaian)</p> <p><b>Bentuk Penilaian :</b><br/>Aktifitas Partisipatif, Penilaian Praktikum</p> | Case based learning dan diskusi 3 x 50' | Case based learning dan diskusi via aplikasi online/tatap maya atau LMS UNESA. 3 x 50' | <p><b>Materi:</b> Konsep Dasar Larutan<br/><b>Pustaka:</b> <i>Tim Kimia Umum. 2013. Kimia Umum . Surabaya: Jurusan Kimia FMIPA Unesa.</i></p> <p><b>Materi:</b> Konsep Dasar Larutan<br/><b>Pustaka:</b> <i>Brady, James.E. 2004 . General Chemistry. Principle and Structure. 4th . ed. New York. John Wiley and Sons, Inc.</i></p> <p><b>Materi:</b> Konsep Dasar Larutan<br/><b>Pustaka:</b> <i>Chang, Raymond. 2005. General Chemistry The Essential Concepts Third Edition. USA: McGraw Hill.</i></p> <p><b>Materi:</b> Konsep Dasar Larutan<br/><b>Pustaka:</b> <i>Artikel terkait fenomena-fenomena/kasus kontekstual</i></p> | 10% |
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| 13 | <p>Menjelaskan istilah-istilah dasar kelarutan serta syarat kelarutan melalui perhitungan hasil kali kelarutan; Menjelaskan istilah-istilah dasar Asam-Basa serta konsep dasar Asam-Basa berdasarkan Arrhenius, Bronsted-Lowry, dan Lewis; Menjelaskan istilah-istilah dasar sifat koligatif; Menjelaskan istilah-istilah dasar larutan penyangga dan syarat larutan dikatakan larutan penyangga; Menjelaskan istilah-istilah dasar hidrolisis larutan; Melakukan evaluasi suatu fenomena/kasus terkait Topik Larutan; Mengaplikasikan konsep dasar asam-basa pada kegiatan praktikum laboratorium</p> | <ol style="list-style-type: none"> <li>1. Mahasiswa dapat menjelaskan istilah-istilah dasar kelarutan serta syarat kelarutan melalui perhitungan hasil kali kelarutan.</li> <li>2. Mahasiswa dapat menjelaskan istilah-istilah dasar Asam-Basa serta konsep dasar Asam-Basa berdasarkan Arrhenius, Bronsted-Lowry, dan Lewis.</li> <li>3. Mahasiswa dapat menjelaskan istilah-istilah dasar sifat koligatif.</li> <li>4. Mahasiswa dapat menjelaskan istilah-istilah dasar larutan penyangga dan syarat larutan dikatakan larutan penyangga.</li> <li>5. Mahasiswa dapat menjelaskan istilah-istilah dasar hidrolisis larutan.</li> <li>6. Mahasiswa dapat mengevaluasi suatu fenomena/kasus terkait Topik Larutan.</li> <li>7. Mahasiswa dapat mengaplikasikan konsep dasar asam-basa pada kegiatan praktikum laboratorium.</li> </ol> | <p><b>Kriteria:</b><br/>Ketepatan dan penguasaan sesuai indikator penilaian (rubrik penilaian)</p> <p><b>Bentuk Penilaian :</b><br/>Aktifitas Partisipatif, Penilaian Praktikum</p> | Case based learning dan diskusi 3 x 50' | Case based learning dan diskusi via aplikasi online/tatap maya atau LMS UNESA. 3 x 50' | <p><b>Materi:</b> Konsep Dasar Larutan<br/><b>Pustaka:</b> <i>Tim Kimia Umum. 2013. Kimia Umum . Surabaya: Jurusan Kimia FMIPA Unesa.</i></p> <p><b>Materi:</b> Konsep Dasar Larutan<br/><b>Pustaka:</b> <i>Brady, James.E. 2004 . General Chemistry. Principle and Structure. 4th . ed. New York. John Wiley and Sons, Inc.</i></p> <p><b>Materi:</b> Konsep Dasar Larutan<br/><b>Pustaka:</b> <i>Chang, Raymond. 2005. General Chemistry The Essential Concepts Third Edition. USA: McGraw Hill.</i></p> <p><b>Materi:</b> Konsep Dasar Larutan<br/><b>Pustaka:</b> <i>Artikel terkait fenomena-fenomena/kasus kontekstual</i></p> | 10% |
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| 14 | Menjelaskan istilah-istilah dasar energetika seperti entalpi, entropi, dan energi bebas gibs; Menjelaskan konsep dasar redoks dan persamaan reaksinya; Melakukan evaluasi suatu fenomena/kasus terkait Topik Energitika | <p>1. Mahasiswa dapat menjelaskan istilah-istilah dasar energetika seperti entalpi, entropi, dan energi bebas gibs.</p> <p>2. Mahasiswa dapat menjelaskan konsep dasar redoks dan persamaan reaksinya.</p> <p>3. Mahasiswa dapat mengevaluasi suatu fenomena/kasus terkait Topik Energitika.</p> | <p><b>Kriteria:</b><br/>Ketepatan dan penguasaan sesuai indikator penilaian (rubrik penilaian)</p> <p><b>Bentuk Penilaian :</b><br/>Aktifitas Partisipatif</p> | Case based learning dan diskusi 3 x 50' | Case based learning dan diskusi via aplikasi online/tatap maya atau LMS UNESA. 3 x 50' | <p><b>Materi:</b><br/>Energitika</p> <p><b>Pustaka:</b> <i>Tim Kimia Umum. 2013. Kimia Umum . Surabaya: Jurusan Kimia FMIPA Unesa.</i></p> <hr/> <p><b>Materi:</b><br/>Energitika</p> <p><b>Pustaka:</b> <i>Brady, James.E. 2004 . General Chemistry. Principle and Structure. 4th . ed. New York. John Willey and Sons, Inc.</i></p> <hr/> <p><b>Materi:</b><br/>Energitika</p> <p><b>Pustaka:</b> <i>Chang, Raymond. 2005. General Chemistry The Essential Concepts Third Edition. USA: McGraw Hill.</i></p> <hr/> <p><b>Materi:</b><br/>Energitika</p> <p><b>Pustaka:</b> <i>Artikel terkait fenomena-fenomena/kasus kontekstual</i></p> | 10% |
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| 15 | Menjelaskan konsep senyawa karbon; Mendeskripsikan struktur karbohidrat, lemak, dan protein; Melakukan evaluasi suatu fenomena/kasus terkait Topik Biokimia | 1. Mahasiswa dapat menjelaskan konsep senyawa karbon.<br>2. Mahasiswa dapat mendeskripsikan struktur karbohidrat, lemak, dan protein.<br>3. Mahasiswa dapat mengevaluasi suatu fenomena/kasus terkait Topik Biokimia. | <b>Kriteria:</b><br>Ketepatan dan penguasaan sesuai indikator penilaian (rubrik penilaian)<br><br><b>Bentuk Penilaian :</b><br>Aktifitas Partisipatif | Case based learning dan diskusi 3 x 50' | Case based learning dan diskusi via aplikasi online/tatap maya atau LMS UNESA. 3 x 50' | <b>Materi:</b> Aspek Biokimia<br><b>Pustaka:</b> <i>Tim Kimia Umum. 2013. Kimia Umum . Surabaya: Jurusan Kimia FMIPA Unesa.</i><br><br><b>Materi:</b> Aspek Biokimia<br><b>Pustaka:</b> <i>Brady, James.E. 2004 . General Chemistry. Principle and Structure. 4th . ed. New York. John Willey and Sons, Inc.</i><br><br><b>Materi:</b> Aspek Biokimia<br><b>Pustaka:</b> <i>Chang, Raymond. 2005. General Chemistry The Essential Concepts Third Edition. USA: McGraw Hill.</i><br><br><b>Materi:</b> Aspek Biokimia<br><b>Pustaka:</b> <i>Artikel terkait fenomena-fenomena/kasus kontekstual</i> | 10% |
| 16 |                                                                                                                                                             | Indikator penilaian dari Pertemuan 9 s.d 15                                                                                                                                                                           | <b>Kriteria:</b><br>Ketepatan dan penguasaan sesuai indikator penilaian (rubrik penilaian)                                                            | UAS (Paper-pencil test) 2 x 50'         | UAS (Paper-pencil test via aplikasi online/LMS UNESA) 2 x 50'                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0%  |

#### Rekap Persentase Evaluasi : Project Based Learning

| No | Evaluasi               | Persentase |
|----|------------------------|------------|
| 1. | Aktifitas Partisipatif | 95%        |
| 2. | Penilaian Praktikum    | 45%        |
|    |                        | 100%       |

#### Catatan

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

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