



**Universitas Negeri Surabaya**  
**Faculty of Mathematics and Natural Sciences**  
**Undergraduate Chemistry Education Study Program**

Document  
Code

## SEMESTER LEARNING PLAN

| <b>Courses</b>  | <b>CODE</b>   | <b>Course Family</b>  | <b>Credit Weight</b>              |        |           | <b>SEMESTER</b>                  | <b>Compilation Date</b> |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|-----------------------------------|--------|-----------|----------------------------------|-------------------------|------|-------|-------|--------|----|----|----|------|----|--|--|--|--|--|------|--|---|---|---|---|---|------|---|---|---|----|----|----|------|----|----|----|------|--|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Gaming Media  | 8420402309  | Chemistry Education   | T=2                               | P=0    | ECTS=3.18 | 5                                | January 20, 2023        |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>AUTHORIZATION</b>  | <b>SP Developer</b>   |   | <b>Course Cluster Coordinator</b> |        |           | <b>Study Program Coordinator</b> |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   | Prof. Dr. Achmad Lutfi, M.Pd.   |   | Dr. Sukarmin M.Pd.                |        |           | Prof. Dr. Utiya Azizah, M.Pd.    |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Learning model</b>                                       | <b>Project Based Learning</b>   |   |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Program Learning Outcomes (PLO)</b>                      | <b>PLO study program which is charged to the course</b>   |   |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   | <b>PLO-7</b>  | Applying logical, critical, systematic and innovative thinking in the context of the development or implementation of science, technology and art that pays attention to and applies humanities values appropriate to the field of chemistry education in solving problems (CPL 5)  |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   | <b>PLO-9</b>  | Mastering the principles of K3 (Work Safety and Security), managing the laboratory and using its equipment as well as how to operate chemical instruments (CPL 3)   |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   | <b>PLO-12</b>   | Able to demonstrate chemical pedagogical knowledge about designing, implementing and evaluating chemistry learning (CPL 2)  |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   | <b>Program Objectives (PO)</b>  |   |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   | <b>PO - 1</b>   | Explain the characteristics of the game and its types   |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   | <b>PO - 2</b>   | Analyzing game requirements can be used as a game medium  |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   | <b>PO - 3</b>   | Give consideration to choosing games as a learning medium   |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   | <b>PO - 4</b>   | Determine the steps to develop games as a chemistry learning medium   |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   | <b>PO - 5</b>   | Assessing games as a learning medium  |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   | <b>PLO-PO Matrix</b>  |   |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   |   | <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>P.O</th> <th>PLO-7</th> <th>PLO-9</th> <th>PLO-12</th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr><td>PO-1</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>PO-2</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>PO-3</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>PO-4</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>PO-5</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table> |                                   |        |           |                                  |                         | P.O  | PLO-7 | PLO-9 | PLO-12 |    |    |    | PO-1 |    |  |  |  |  |  | PO-2 |  |   |   |   |   |   | PO-3 |   |   |   |    |    |    | PO-4 |    |    |    |      |  |  | PO-5 |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   | P.O   | PLO-7   | PLO-9                             | PLO-12 |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   | PO-1  |   |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   | PO-2  |   |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PO-3  |   |   |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PO-4  |   |   |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PO-5  |   |   |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>PO Matrix at the end of each learning stage (Sub-PO)</b> |   |   |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   | <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2">P.O</th> <th colspan="16">Week</th> </tr> <tr> <th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th><th>16</th> </tr> </thead> <tbody> <tr><td>PO-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>PO-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>PO-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>PO-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>PO-5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table> |   |                                   |        |           |                                  | P.O                     | Week |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  | 1 | 2 | 3 | 4 | 5 | 6    | 7 | 8 | 9 | 10 | 11 | 12 | 13   | 14 | 15 | 16 | PO-1 |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  | PO-2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | PO-3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | PO-4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | PO-5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| P.O   | Week  |   |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   | 1   | 2   | 3                                 | 4      | 5         | 6                                | 7                       | 8    | 9     | 10    | 11     | 12 | 13 | 14 | 15   | 16 |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PO-1  |   |   |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PO-2  |   |   |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PO-3  |   |   |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PO-4  |   |   |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PO-5  |   |   |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Short Course Description</b>                             | Study of the meaning, types/classification, functions, basics of media development, as well as being able to select, design and produce learning media by utilizing the surrounding environment (contextual) and ICT  |   |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>References</b>   | <b>Main :</b>   |   |                                   |        |           |                                  |                         |      |       |       |        |    |    |    |      |    |  |  |  |  |  |      |  |   |   |   |   |   |      |   |   |   |    |    |    |      |    |    |    |      |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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2. Indriana, Dina. 2011. Ragam Alat Bantu Media Pengajaran. Yogyakarta: DIVA Press
3. Suger, Steven & Suger, Kim Kotoroski. 2002. Primary Games Experiential Learning Activities for Teaching. San Francisco: John Wiley & Sons, Inc.
4. Ancok, Djamaluddin. 2003. Outbound Management Training (cetakan keempat). Yogyakarta. UII Press.
5. \_\_\_\_\_. 1982. Permainan Rakyat Daerah Istimewa Yogyakarta. Jakarta: Departemen Pendidikan dan Kebudayaan

**Supporters:**

**Supporting lecturer**

Prof. Dr. Achmad Lutfi, M.Pd.  
Rusly Hidayah, S.Si., M.Pd.

| Week- | Final abilities of each learning stage (Sub-PO)                         | Evaluation  |   | Help Learning, Learning methods, Student Assignments, [ Estimated time] |                   | Learning materials [ References ]   | Assessment Weight (%) |
|-------|---|---|---|---|-------------------|---|-----------------------|
|       |   | Indicator   | Criteria & Form   | Offline ( offline )   | Online ( online ) |   |                       |
| (1)   | (2)   | (3)   | (4)   | (5)   | (6)               | (7)   | (8)                   |
| 1     | Explain the meaning of play as a game                                   | Students can explain the meaning of the game  | <b>Criteria:</b><br>Students are able to write two definitions of the game<br><br><b>Form of Assessment :</b><br>Participatory Activities   | Face to face 100 minute discussion                                      |                   | <b>Material:</b><br>Games<br><b>Reader:</b> <i>Ismail, Andang. 2006. Education Games. Yogyakarta: Pilar Media</i>                                   | 5%                    |
| 2     | Describes the activity as play  | Students can describe the characteristics of the game                                 | <b>Criteria:</b><br>Students can write a description of the characteristics of the game<br><br><b>Form of Assessment :</b><br>Participatory Activities                              | Face to face 100 minute discussion                                      |                   | <b>Material:</b><br>Games<br><b>Reader:</b> <i>Ismail, Andang. 2006. Education Games. Yogyakarta: Pilar Media</i>                                   | 5%                    |
| 3     | Classifying games and non-games   | Students are able to group games and non-games  | <b>Criteria:</b><br>Students are able to write the classification of games and non-games<br><br><b>Form of Assessment :</b><br>Participatory Activities                             | Face to face discussion 100 minutes                                     |                   | <b>Material:</b><br>Games<br><b>Reader:</b> <i>Ismail, Andang. 2006. Education Games. Yogyakarta: Pilar Media</i>                                   | 5%                    |
| 4     | Explain the benefits of games in learning                               | Students are able to explain the benefits of games as a learning medium               | <b>Criteria:</b><br>Students can explain the advantages if games are used as a learning medium<br><br><b>Form of Assessment :</b><br>Participatory Activities                       | Face-to-face Discussion Assignment 100 minutes                          |                   | <b>Material:</b><br>Educational Games<br><b>Reader:</b> <i>Ismail, Andang. 2006. Education Games. Yogyakarta: Pilar Media</i>                       | 5%                    |
| 5     | Differentiate between learning while playing and playing while learning | Students can differentiate between learning while learning and playing while learning | <b>Criteria:</b><br>Students can differentiate between learning while learning and playing while learning in writing<br><br><b>Form of Assessment :</b><br>Participatory Activities | Face-to-face Discussion Assignment 100 minutes                          |                   | <b>Material:</b><br>Choosing games for learning<br><b>Reader:</b> <i>Indriana, Dina. 2011. Various Teaching Media Tools. Yogyakarta: DIVA Press</i> | 5%                    |
| 6     | Explains how to choose games that can be used as learning media         | Students can explain how to choose games that can be used as learning media           | <b>Criteria:</b><br>Students can explain orally and in writing in choosing games that can be used as media<br><br><b>Form of Assessment :</b><br>Participatory Activities           | Face-to-face Discussion Demonstration Task 100 minutes                  |                   | <b>Material:</b><br>Choosing games for learning<br><b>Reader:</b> <i>Indriana, Dina. 2011. Various Teaching Media Tools. Yogyakarta: DIVA Press</i> | 5%                    |

|    |   |  |  |   |  |   |     |
|----|---|--|--|---|--|---|-----|
| 7  | Determine the characteristics of games that can be used as chemistry learning media | Students can explain the characteristics of games that can be used as chemistry learning media | <b>Criteria:</b><br>Students can describe the characteristics of games that can be used as chemistry learning media<br><br><b>Form of Assessment :</b><br>Participatory Activities | Face-to-face Discussion Assignment<br>100 minutes           |  | <b>Material:</b><br>Choosing games for learning<br><b>References:</b><br>Suger, Steven & Suger, Kim Kostoroski. 2002. <i>Primary Games Experiential Learning Activities for Teaching</i> . San Francisco: John Willy & Sons, Inc. | 10% |
| 8  | chemistry game media  | UTS  | <b>Criteria:</b><br>UTS<br><br><b>Form of Assessment :</b><br>Project Results Assessment / Product Assessment  | Midterm<br>100 minutes                                      |  | <b>Material:</b> UTS<br><b>Bibliography:</b><br>Suger, Steven & Suger, Kim Kostoroski. 2002. <i>Primary Games Experiential Learning Activities for Teaching</i> . San Francisco: John Willy & Sons, Inc.                          | 0%  |
| 9  | Designing games as a chemistry learning medium                                      | Students can plan to make games as a learning medium   | <b>Criteria:</b><br>Students can produce game plan designs as learning media<br><br><b>Form of Assessment :</b><br>Project Results Assessment / Product Assessment                 | Face-to-face Discussion Design assignment<br>100 Minutes    |  | <b>Material:</b><br>Developing games as a medium for learning chemistry<br><b>References:</b><br>_____. 1982. <i>Folk Games of the Special Region of Yogyakarta</i> . Jakarta: Department of Education and Culture                | 10% |
| 10 | Making games as a medium for learning chemistry                                     | Students can realize games as learning media based on designs that have been prepared          | <b>Criteria:</b><br>Students can make games as a medium for learning chemistry<br><br><b>Form of Assessment :</b><br>Project Results Assessment / Product Assessment               | Face-to-face discussion Assignments/projects<br>100 minutes |  | <b>Material:</b><br>Developing games as a chemistry learning medium.<br><b>Reference:</b><br>Ancok, Djamaluddin. 2003. <i>Outbound Management Training (fourth printing)</i> . Yogyakarta. UII Press.                             | 10% |
| 11 | Assessing games as a learning medium that has been developed                        | Students can assess/decide the type of game that can be used as a learning medium              | <b>Criteria:</b><br>Students can consider whether a game can be used as a learning medium<br><br><b>Form of Assessment :</b><br>Participatory Activities                           | Face-to-face Discussion Assignment<br>100 minutes           |  | <b>Material:</b><br>Assessing games as a learning medium<br><b>Reference:</b><br>Ancok, Djamaluddin. 2003. <i>Outbound Management Training (fourth printing)</i> . Yogyakarta. UII Press.   | 5%  |

|    |  |   |   |  |  |   |     |
|----|--|---|---|--|--|---|-----|
| 12 | Determine aspects and criteria for assessing games as a learning medium  | Students can determine the criteria for assessing games as a learning medium  | <b>Criteria:</b><br>Students can choose or determine criteria as a medium for learning chemistry<br><br><b>Form of Assessment :</b><br>Participatory Activities   | Face-to-face<br>Discussion<br>Assignment<br>100 minutes                                  |  | <b>Material:</b><br>Assessing games as a learning medium<br><b>References:</b><br><i>Suger, Steven &amp; Suger, Kim Kostoroski. 2002. Primary Games Experiential Learning Activities for Teaching. San Francisco: John Willy &amp; Sons, Inc.</i> | 5%  |
| 13 | Sorting and determining game assessment instruments as chemistry learning media  | Students can choose instruments to assess games as a learning medium  | <b>Criteria:</b><br>Students can determine the assessment instrument for a game as a learning medium<br><br><b>Form of Assessment :</b><br>Participatory Activities   | Face-to-face<br>Discussion<br>Structured assignment<br>100 minutes                       |  | <b>Material:</b><br>Assessing games as a learning medium<br><b>References:</b><br><i>Suger, Steven &amp; Suger, Kim Kostoroski. 2002. Primary Games Experiential Learning Activities for Teaching. San Francisco: John Willy &amp; Sons, Inc.</i> | 10% |
| 14 | Determine or write down the relationship between student characteristics and the need for games as a chemistry learning medium | Students write the relationship between student characteristics and the need for games as a chemistry learning medium | <b>Criteria:</b><br>Students can write down the relationship between student characteristics and the needs of games as a chemistry learning medium<br><br><b>Form of Assessment :</b><br>Participatory Activities | Face-to-face<br>Discussion<br>Structured assignment<br>100 minutes                       |  | <b>Material:</b><br>Assessing games as a learning medium<br><b>References:</b><br>_____. 1982. <i>Folk Games of the Special Region of Yogyakarta. Jakarta: Department of Education and Culture</i>  | 10% |
| 15 | The specifics of game media as a chemistry learning medium   | Students are able to write about the characteristics of game media as a chemistry learning medium                     | <b>Criteria:</b><br>Students can write about the characteristics of game media as a chemistry learning medium.<br><br><b>Form of Assessment :</b><br>Participatory Activities                                     | Face-to-face discussions<br>Structured assignments<br>Practice/simulation<br>100 minutes |  | <b>Material:</b><br>Assessing games as a learning medium<br><b>References:</b><br><i>Suger, Steven &amp; Suger, Kim Kostoroski. 2002. Primary Games Experiential Learning Activities for Teaching. San Francisco: John Willy &amp; Sons, Inc.</i> | 10% |
| 16 | chemistry game media   | UAS   | <b>Criteria:</b><br>UAS<br><br><b>Form of Assessment :</b><br>Participatory Activities  | UAS<br>100 minutes   |  | <b>Material:</b> UAS<br><b>Literature:</b><br><i>Ancok, Djamaluddin. 2003. Outbound Management Training (fourth printing). Yogyakarta. UII Press.</i>   | 0%  |

#### Evaluation Percentage Recap: Project Based Learning

| No | Evaluation                                      | Percentage |
|----|---|------------|
| 1. | Participatory Activities                        | 80%        |
| 2. | Project Results Assessment / Product Assessment | 20%        |
|    |   | 100%       |

## Notes

1. **Learning Outcomes of Study Program Graduates (PLO - Study Program)** are the abilities possessed by each Study Program graduate which are the internalization of attitudes, mastery of knowledge and skills according to the level of their study program obtained through the learning process.
2. **The PLO imposed on courses** are several learning outcomes of study program graduates (CPL-Study Program) which are used for the formation/development of a course consisting of aspects of attitude, general skills, special skills and knowledge.
3. **Program Objectives (PO)** are abilities that are specifically described from the PLO assigned to a course, and are specific to the study material or learning materials for that course.
4. **Subject Sub-PO (Sub-PO)** is a capability that is specifically described from the PO that can be measured or observed and is the final ability that is planned at each learning stage, and is specific to the learning material of the course.
5. **Indicators for assessing** ability in the process and student learning outcomes are specific and measurable statements that identify the ability or performance of student learning outcomes accompanied by evidence.
6. **Assessment Criteria** are benchmarks used as a measure or measure of learning achievement in assessments based on predetermined indicators. Assessment criteria are guidelines for assessors so that assessments are consistent and unbiased. Criteria can be quantitative or qualitative.
7. **Forms of assessment:** test and non-test.
8. **Forms of learning:** Lecture, Response, Tutorial, Seminar or equivalent, Practicum, Studio Practice, Workshop Practice, Field Practice, Research, Community Service and/or other equivalent forms of learning.
9. **Learning Methods:** Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project Based Learning, and other equivalent methods.
10. **Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
11. **The assessment weight** is the percentage of assessment of each sub-PO achievement whose size is proportional to the level of difficulty of achieving that sub-PO, and the total is 100%.
12. TM=Face to face, PT=Structured assignments, BM=Independent study.