


|   |  |   |                            |  |                          |  |                              |                         |   |      |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|---|--|---|----------------------------|--|--------------------------|--|------------------------------|-------------------------|---|------|----|----|----|----|----|----|----|--|--|--|--|--|--|--|--|-----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|
|  |  | <b>Universitas Negeri Surabaya</b><br><b>Faculty of Engineering,</b><br><b>Undergraduate Study Program in Informatics Engineering</b> |                            |  |                          |  | <b>Document Code</b>         |                         |   |      |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
| <b>SEMESTER LEARNING PLAN</b>   |  |   |                            |  |                          |  |                              |                         |   |      |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
| <b>Courses</b>  |  | <b>CODE</b>   | <b>Course Family</b>       |  | <b>Credit Weight</b>     |  | <b>SEMESTER</b>              | <b>Compilation Date</b> |   |      |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
| Visual Programming  |  | 5520204064  |                            |  | T=4                      | P=0                                      | ECTS=6.36                    | 4<br>July 18, 2024      |   |      |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
| <b>AUTHORIZATION</b>  |  | <b>SP Developer</b>   |                            | <b>Course Cluster Coordinator</b>  |                          | <b>Study Program Coordinator</b>         |                              |                         |   |      |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|   |  | .....   |                            | .....  |                          | Aditya Prapanca, S.T.,<br>M.Kom.         |                              |                         |   |      |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
| <b>Learning model</b>   | <b>Project Based Learning</b>  |   |                            |  |                          |  |                              |                         |   |      |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
| <b>Program Learning Outcomes (PLO)</b>  | <b>PLO study program that is charged to the course</b>   |   |                            |  |                          |  |                              |                         |   |      |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|   | <b>Program Objectives (PO)</b>   |   |                            |  |                          |  |                              |                         |   |      |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|   | <b>PLO-PO Matrix</b>   |   |                            |  |                          |  |                              |                         |   |      |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|   | <table border="1" style="margin: auto;"> <tr> <td style="width: 100px; height: 30px;"></td> <td style="width: 100px; height: 30px; text-align: center;">P.O</td> </tr> </table>  |   |                            |  |                          |  |                              |                         |   | P.O  |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|   | P.O  |   |                            |  |                          |  |                              |                         |   |      |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
| <b>Short Course Description</b>   | <b>PO Matrix at the end of each learning stage (Sub-PO)</b>  |   |                            |  |                          |  |                              |                         |   |      |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|   | <table border="1" style="margin: auto;"> <tr> <td rowspan="2" style="width: 50px; height: 30px;"></td> <td colspan="16" style="text-align: center;">Week</td> </tr> <tr> <td style="width: 20px; height: 20px; text-align: center;">P.O</td> <td style="width: 20px; height: 20px; text-align: center;">1</td> <td style="width: 20px; height: 20px; text-align: center;">2</td> <td style="width: 20px; height: 20px; text-align: center;">3</td> <td style="width: 20px; height: 20px; text-align: center;">4</td> <td style="width: 20px; height: 20px; text-align: center;">5</td> <td style="width: 20px; height: 20px; text-align: center;">6</td> <td style="width: 20px; height: 20px; text-align: center;">7</td> <td style="width: 20px; height: 20px; text-align: center;">8</td> <td style="width: 20px; height: 20px; text-align: center;">9</td> <td style="width: 20px; height: 20px; text-align: center;">10</td> <td style="width: 20px; height: 20px; text-align: center;">11</td> <td style="width: 20px; height: 20px; text-align: center;">12</td> <td style="width: 20px; height: 20px; text-align: center;">13</td> <td style="width: 20px; height: 20px; text-align: center;">14</td> <td style="width: 20px; height: 20px; text-align: center;">15</td> <td style="width: 20px; height: 20px; text-align: center;">16</td> </tr> </table> |   |                            |  |                          |  |                              |                         |   | Week |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  | P.O | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|   | Week   |   |                            |  |                          |  |                              |                         |   |      |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|   | P.O  | 1   | 2                          | 3  | 4                        | 5  | 6                            | 7                       | 8 | 9    | 10 | 11 | 12 | 13 | 14 | 15 | 16 |  |  |  |  |  |  |  |  |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
| <b>References</b>   | <b>Main :</b><br><ol style="list-style-type: none"> <li>1. Wilbert O. Galitz. 2007. The essential guide to user interface design an introduction to GUI design principles and techniques. Wiley.</li> <li>2. Andrew Troelsen. Phillip Japikse. 2015. C# 6.0 and the .NET 4.6 Framework. Apress.</li> <li>3. Marino Posadas. 2016. Mastering C# and .NET Framework. Packt.</li> <li>4. Matthew MacDonald. 2012 Pro WPF 4.5 in C#. Apress.</li> <li>5. Ayan Chatterjee. 2017. Building Apps for the Universal Windows Platform: Explore Windows 10 Native, IoT, HoloLens, and Xamarin. Apress.</li> </ol>  |   |                            |  |                          |  |                              |                         |   |      |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|   | <b>Supporters:</b>   |   |                            |  |                          |  |                              |                         |   |      |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
| <b>Supporting lecturer</b>  | I Made Suartana, S.Kom., M.Kom.  |   |                            |  |                          |  |                              |                         |   |      |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
| <b>Week-</b>  | <b>Final abilities of each learning stage (Sub-PO)</b>   | <b>Evaluation</b>   |                            | <b>Help Learning, Learning methods, Student Assignments, [ Estimated time]</b> |                          | <b>Learning materials [ References ]</b> | <b>Assessment Weight (%)</b> |                         |   |      |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|   |  | <b>Indicator</b>  | <b>Criteria &amp; Form</b> | <b>Offline ( offline )</b>   | <b>Online ( online )</b> |  |                              |                         |   |      |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
| (1)   | (2)  | (3)   | (4)                        | (5)  | (6)                      | (7)                                      | (8)                          |                         |   |      |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |

|   |  |  |  |  |  |  |    |
|---|--|--|--|--|--|--|----|
| 1 |  |  |  | Approach:<br>Scientific,<br>Model:<br>Cooperative,<br>Method:<br>Discussion,<br>Presentation<br>4 X 50 |  |  | 0% |
| 2 | Students understand GUI programming concepts and GUI design principles   | 1. Explain the concept of GUI Programming<br>2. Introduction to GUI Application Design<br>3. Principles of GUI Based Application design    |  | Approach:<br>Scientific,<br>Model:<br>Cooperative,<br>Method:<br>Discussion,<br>Presentation<br>4 X 50 |  |  | 0% |
| 3 | Students understand the technological structure and architecture of the .Net Framework in C# and implement OOP in C# | 1. Explain .Net Technology<br>2. Explain .Net Architecture<br>3. Explain .Net Program Structure in C#<br>4. Create OOP programs using .Net |  | Approach:<br>Scientific,<br>Model:<br>Cooperative,<br>Method:<br>Discussion,<br>Presentation<br>4 X 50 |  |  | 0% |
| 4 | Students can use layout components and advanced GUI components in .Net   | Used layout components, Containers and advanced GUI components in WinForm  |  | Approach:<br>Scientific,<br>Model:<br>Cooperative,<br>Method:<br>Discussion,<br>Presentation<br>4 X 50 |  |  | 0% |
| 5 | Students can make modifications to the standard appearance of WinForm  | Using plugins or additional components to modify the standard appearance of WinForm  |  | Approach:<br>Scientific,<br>Model:<br>Cooperative,<br>Method:<br>Discussion,<br>Presentation<br>4 X 50 |  |  | 0% |
| 6 | Students master creating GUIs with Windows Forms   | Using Windows Forms in creating GUI  |  | Approach:<br>Scientific,<br>Model:<br>Cooperative,<br>Method:<br>Discussion,<br>Presentation<br>4 X 50 |  |  | 0% |
| 7 | Students master the use of GUI components using WPF (Windows Presentation Foundation)                                | Using GUI components in WPF in creating programs   |  | Approach:<br>Scientific,<br>Model:<br>Cooperative,<br>Method:<br>Discussion,<br>Presentation<br>4 X 50 |  |  | 0% |
| 8 | UTS  |  |  | 4 X 50   |  |  | 0% |
| 9 | Students master the use of GUI components in WPF using the MVVC concept  | Using GUI components in WPF Applying MVVM concepts to the program  |  | Approach:<br>Scientific,<br>Model:<br>Cooperative,<br>Method:<br>Discussion,<br>Presentation<br>4 X 50 |  |  | 0% |

|    |   |   |  |   |  |  |    |
|----|---|---|--|---|--|--|----|
| 10 | Students understand the concept of UWP (Universal Windows Platform)                   | Using control components on UWP                       |  | Approach: Scientific, Model: Cooperative, Method: Discussion, Presentation 4 X 50 |  |  | 0% |
| 11 | Students implement UWP in creating desktop-based applications                         | Create desktop applications with UWP                  |  | Approach: Scientific, Model: Cooperative, Method: Discussion, Presentation 4 X 50 |  |  | 0% |
| 12 | Students master the use of data and databases in programming                          | access data and databases from programs               |  | Access data Binding data Management File 4 X 50                                   |  |  | 0% |
| 13 | Students understand the concept of application development with Xamarin               | Using basic components in xamarin                     |  | Approach: Scientific, Model: Cooperative, Method: Discussion, Presentation 4 X 50 |  |  | 0% |
| 14 | Students are able to apply Xamarin in making mobile-based applications                | Create mobile programs with xamarin                   |  | Approach: Scientific, Model: Cooperative, Method: Discussion, Presentation 4 X 50 |  |  | 0% |
| 15 | Students are able to apply the concepts learned in lectures to complete a case study. | Create a program according to the case study provided |  | Approach: Scientific, Model: Cooperative, Method: Discussion, Presentation 4 X 50 |  |  | 0% |
| 16 |   |   |  |   |  |  | 0% |

#### Evaluation Percentage Recap: Project Based Learning

| No | Evaluation | Percentage |
|----|------------|------------|
|    |            | 0%         |

#### 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.