	Universitas Negeri Surabaya Faculty of Engineering , Information Technology Education Undergraduate Study Program	Document Code

SEMESTER LEARNING PLAN

Courses		CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Database Programming *		8320703057	Compulsory Study Program Subjects	T=3	P=0	ECTS=4.77	5	July 17, 2024
AUTHORIZATION		**SP Developer**		**Course Cluster Coordinator**			**Study Program Coordinator**	
		Drs. Bambang Sujatmiko, M.T. Ramadhan Cakra Wibawa, S.Pd., M.Kom.		....			Drs. Bambang Sujatmiko, M.T.	

Learning model	**Project Based Learning**

Program Learning Outcomes (PLO)	**PLO study program which is charged to the course**	
	PLO-13	Able to develop innovative educational products or learning resources using scientific design-based strategies to support teaching activities that can be integrated with ICT.
	Program Objectives (PO)	
	PLO-PO Matrix	

	P.O	PLO-13

PO Matrix at the end of each learning stage (Sub-PO)

P.O	Week															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Short Course Description	This course teaches: Basic concepts of visual programming in C#,

References	**Main :**	
		1. Tony Gaddis dkk, Starting Out with Visual C# 2012, Third Edition, Boston, Pearson . 2. Benyamin Perkins, Jacob V H, Jon D.Reid, Beginning Visual C# 2015 Programming , Canada, John Wiley. 3. Karli Watson, dkk, Beginning Visual C# 2012 Programming, Canada, John Wiley. 4. Andre Stellman, Jennifer Greene, Head First C#, Second Edition, USA, O 19Reilly. 5. Barbara Doyle, C# Programming From Problem Analysis to Program Design, Fourth Edition , Boston, Cengage Learning 6. Paul Deitel, Harvey Deital, Visual C# 2012 How To Program, Fifth Edition , Boston, Pearson
	Supporters:	

Supporting lecturer	Drs. Bambang Sujatmiko, M.T. Bonda Sisephaputra, M. Kom. Ramadhan Cakra Wibawa, S.Pd., M.Kom.

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	Students are able to understand the	- Explaining Learning	**Criteria:** Group Value	Scientific approach	Scientific approach with the Project Based	**Material:** Students can	2%

| | | objectives of the course and apply Visual Studio.NET and Database programming | Contracts and RPS - Explaining Database Integration with the .Net Framework - Implementing query creation and relationships between tables | (20%), Individual Value (35%), Project Value (30%), and Presentation and Report Value (15%)

Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment | with the Project Based Learning model with the following stages
1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face.
2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared
3. Students prepare a schedule for completing the project that will be worked on
4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on)
5 . Students make reports related to projects that have been carried out within the specified time period.
6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed.
3 X 50 | Learning model with the following stages
1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face.
2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared
3. Students prepare a schedule for completing the project that will be worked on
4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on)
5 . Students make reports related to projects that have been carried out within the specified time period.
6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed.
3 x 50 | explain Database Integration with the .Net Framework and apply the creation of queries and relationships between tables.
References:
Tony Gaddis et al., Starting Out with Visual C# 2012, Third Edition, Boston, Pearson. | |

| 2 | Students are able to apply Database programming | - Explaining database concepts - Explaining ADO.NET - Creating databases and tables - Writing SQL commands - Creating application connections to databases Implementing dataGridView | **Criteria:** Group Value (20%), Individual Value (35%), Project Value (30%), and Presentation and Report Value (15%)

 Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment | Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been | Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed. 3 x 50 | **Material:** Explaining database concepts - Explaining ADO.NET - Creating databases and tables - Writing SQL commands - Creating application connections to databases Implementing dataGridView **Libraries:** *Benyamin Perkins, Jacob VH, Jon D.Reid, Beginning Visual C# 2015 Programming, Canada, John Wiley .* | 3% |

				completed. 3 X 50			
3	Students are able to apply Database programming	- Explaining database concepts - Explaining ADO.NET - Creating databases and tables - Writing SQL commands - Creating application connections to the database Implementing dataGridView	**Criteria:** Group Value (20%), Individual Value (35%), Project Value (30%), and Presentation and Report Value (15%) **Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been carried out by displaying the outcomes of	Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed. 3 x 50	**Material:** Explaining database concepts - Explaining ADO.NET - Creating databases and tables - Writing SQL commands - Creating application connections to databases Implementing dataGridView **Libraries:** *Benyamin Perkins, Jacob VH, Jon D.Reid, Beginning Visual C# 2015 Programming, Canada, John Wiley .*	2%

				projects that have been completed. 3 X 50			
4	Students are able to apply database programming to simple case studies	- Display data from the database - Create an application to insert data - Implement dataGridView to display data Create a CRUD application with C#	**Criteria:** Group Value (20%), Individual Value (35%), Project Value (30%), and Presentation and Report Value (15%) **Form of Assessment** : Participatory Activities	Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been carried out by	Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed. 3 x 50	**Material:** Displaying data from a database - Creating an application to insert data - Applying dataGridView to display data Creating a CRUD application with C# **Library:** *Benyamin Perkins, Jacob VH, Jon D.Reid, Beginning Visual C# 2015 Programming, Canada, John Wiley.*	3%

No	Learning Outcomes	Indicators	Forms of Assessment	Learning Method	Learning Experience	Material / Library	Weight
				displaying the outcomes of projects that have been completed. 3 X 50			
5	Students are able to apply database programming to simple case studies	- Display data from the database - Create an application to insert data - Implement dataGridView to display data Create a CRUD application with C#	**Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment, Practices / Performance	Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been	Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed. 3 x 50	**Material:** - Displaying data from a database - Creating an application to insert data - Applying dataGridView to display data Creating a CRUD application with C# **Library:** *Benyamin Perkins, Jacob VH, Jon D.Reid, Beginning Visual C# 2015 Programming, Canada, John Wiley.*	3%

| | | | carried out by displaying the outcomes of projects that have been completed. 3 X 50 | | | | |
| 6 | Students are able to apply classes and objects to databases | - Explaining ORM Classes and Objects - Explaining constructors and destructors - Explaining ORM - Practice creating a simple ORM | **Criteria:** Group Value (20%), Individual Value (35%), Project Value (30%), and Presentation and Report Value (15%) **Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment | Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences | Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed. 3 x 50 | **Material:** ORM Classes and Objects - constructors and destructors - ORM - Creating a simple ORM **Library:** *Benyamin Perkins, Jacob VH, Jon D.Reid, Beginning Visual C# 2015 Programming, Canada, John Wiley.* | 3% |

				that have been carried out by displaying the outcomes of projects that have been completed. 3 X 50			
7	Students are able to apply classes and objects to databases	- Explaining ORM Classes and Objects - Explaining constructors and destructors - Explaining ORM - Practice creating a simple ORM	**Criteria:** Group Value (20%), Individual Value (35%), Project Value (30%), and Presentation and Report Value (15%) **Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period.	Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed. 3 x 50	**Material:** - Explaining ORM Classes and Objects - Explaining constructors and destructors - Explaining ORM - Practice creating a simple ORM **Library:** *Benyamin Perkins, Jacob VH, Jon D.Reid, Beginning Visual C# 2015 Programming, Canada, John Wiley.*	3%

				6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed. 3 X 50			
8	Students are able to implement and create controller classes	All competencies that have been studied previously	**Criteria:** 20% (Cognitive Value, Character Value, and Performance Value) **Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment, Portfolio Assessment, Tests	Midterm Exam (UTS) 2 X 50	Online Mid-Semester Exam (UTS) 2 x 50	**Material:** Students are able to explain OOP (Object Oriented Programming), controller concepts, and practice creating controller classes. **References:** *Benyamin Perkins, Jacob VH, Jon D.Reid, Beginning Visual C# 2015 Programming, Canada, John Wiley.*	20%
9	Students are able to implement and create controller classes	- Explaining OOP (Object Oriented Programming) - Explaining the concept of controllers - Practice creating controller classes	**Criteria:** Group Value (20%), Individual Value (35%), Project Value (30%), and Presentation and Report Value (15%) **Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students carry out the stages	Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed. 3 x 50	**Material:** 1. OOP (Object Oriented Programming), 2. controller concepts, 3. Practice creating controller classes. **References:** *Tony Gaddis et al, Starting Out with Visual C# 2012, Third Edition, Boston, Pearson.*	3%

				of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed. 3 X 50			
10	Students are able to implement and create controller classes	- Explaining OOP (Object Oriented Programming) - Explaining the concept of controllers - Practice creating controller classes	**Criteria:** Group Value (20%), Individual Value (35%), Project Value (30%), and Presentation and Report Value (15%) **Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students	Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed. 3 x 50	**Material:** 1. OOP (Object Oriented Programming), 2. controller concepts, 3. Practice creating controller classes. **References:** *Tony Gaddis et al, Starting Out with Visual C# 2012, Third Edition, Boston, Pearson.*	3%

No	Sub-CPMK (Learning outcomes)	Indicators	Assessment	Learning Methods	Learning Experience	Material/References	Weight
				carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed. 3 X 50			
11	Students are able to implement and create controller classes	- Explaining OOP (Object Oriented Programming) - Explaining the concept of controllers - Practice creating controller classes	**Criteria:** Group Value (20%), Individual Value (35%), Project Value (30%), and Presentation and Report Value (15%) **Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be	Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed. 3 x 50	**Material:** 1. OOP (Object Oriented Programming), 2. controller concepts, 3. Practice creating controller classes. **References:** *Tony Gaddis et al, Starting Out with Visual C# 2012, Third Edition, Boston, Pearson.*	5%

				worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed. 3 X 50			
12	Students are able to implement and create controller classes	- Explaining OOP (Object Oriented Programming) - Explaining the concept of controllers - Practice creating controller classes	**Criteria:** Group Value (20%), Individual Value (35%), Project Value (30%), and Presentation and Report Value (15%) **Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for	Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed. 3 x 50	**Material:** 1. OOP (Object Oriented Programming), 2. controller concepts, 3. Practice creating controller classes. **References:** *Tony Gaddis et al, Starting Out with Visual C# 2012, Third Edition, Boston, Pearson.*	5%

				completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed. 3 X 50			
13	Students are able to implement and create controller classes	- Explaining OOP (Object Oriented Programming) - Explaining the concept of controllers - Practice creating controller classes	**Criteria:** Group Value (20%), Individual Value (35%), Project Value (30%), and Presentation and Report Value (15%) **Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students	Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed. 3 x 50	**Material:** 1. OOP (Object Oriented Programming), 2. controller concepts, 3. Practice creating controller classes. **References:** *Tony Gaddis et al, Starting Out with Visual C# 2012, Third Edition, Boston, Pearson.*	5%

				prepare a schedule for completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed. 3 X 50	3 × 50		
14	Students are able to implement and create controller classes	- Explaining OOP (Object Oriented Programming) - Explaining the concept of controllers - Practice creating controller classes	**Criteria:** Group Value (20%), Individual Value (35%), Project Value (30%), and Presentation and Report Value (15%) **Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been	Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been carried out by displaying the outcomes of projects	**Material:** 1. OOP (Object Oriented Programming), 2. controller concepts, 3. Practice creating controller classes. **References:** *Tony Gaddis et al, Starting Out with Visual C# 2012, Third Edition, Boston, Pearson.*	5%

				prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed. 3 X 50	that have been completed. 3 x 50		
15	Students are able to implement and create controller classes	- Explaining OOP (Object Oriented Programming) - Explaining the concept of controllers - Practice creating controller classes	**Criteria:** Group Value (20%), Individual Value (35%), Project Value (30%), and Presentation and Report Value (15%) **Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the	Scientific approach with the Project Based Learning model with the following stages 1. Students observe the problem given by the lecturer, referring to the topic that has been agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face. 2. Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have	**Material:** 1. OOP (Object Oriented Programming), 2. controller concepts, 3. Practice creating controller classes. **References:** *Tony Gaddis et al, Starting Out with Visual C# 2012, Third Edition, Boston, Pearson.*	5%

No							
				hypothesis that has been prepared 3. Students prepare a schedule for completing the project that will be worked on 4. Students carry out the stages of the project according to the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5 . Students make reports related to projects that have been carried out within the specified time period. 6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed. 3 X 50	been carried out by displaying the outcomes of projects that have been completed. 3 x 50		
16	End of Course Project Presentation	1.Group Value (20%) 2.Individual Value (25 %) 3.Project Value (30 %) 4. Presentation and Report Value (25%)	**Criteria:** Cognitive Assessment, Attitude Assessment, and Psychomotor Assessment **Form of Assessment** : Project Results Assessment / Product Assessment, Test	Final Semester Examination (UAS) 3 x 50	Online Final Semester Examination (UAS) 3 x 50	**Material:** Final Course Project from portfolio results from meetings 9 to 15 **References:** **Material:** Final Course Project from the results of the portfolio from the 9th to 15th meeting. **References:** *Benyamin Perkins, Jacob VH, Jon D.Reid, Beginning Visual C# 2015 Programming, Canada, John Wiley.*	30%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	31%
2.	Project Results Assessment / Product Assessment	43%
3.	Portfolio Assessment	5%
4.	Practice / Performance	1%

5.	Test	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.