

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

Document Code

SEMESTER LEARNING PLAN

Courses				CODE		Course	e Famil	У	Cred	it Wei	ght	5	SEMESTER	Compilation Date
Database	e Pro	gramming *		832070305	7	Compu	Isory S	tudy	T=3	P=0	ECTS=4.7	77	5	July 17, 2024
AUTHOR	IZAT	ION		SP Develop	per	Piograi	n Əubjt	Cours	e Clu	ster C	oordinato	or s	Study Program	Coordinator
				Drs. Bamba Ramadhan M.Kom.	ng Sujatmiko, Cakra Wibawa	M.T. I, S.Pd.,							Drs. Bamban M.	g Sujatmiko, T.
Learning model		Project Based	Learn	ing										
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Reference	ces	Main :												
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		Supporters:												
Support lecturer	ing	Drs. Bambang S Bonda Sisepha Ramadhan Cak	Sujatm putra, ra Wib	iko, M.T. M. Kom. bawa, S.Pd., I	M.Kom.									
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	(Su	u-1ºO)	lı	ndicator	Criteria &	Form	Offl offl	ine(ine)	0	nline (online)			
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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 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 stages of the project that will be worked on 4. Students prepare a schedule for completing the project that will be worked on 4. Students prepared (the lecturer observes each stage of the student project that is being worked on 5. Students related to projects that have been carried out within the specified time perion. 5. Students related to projects that have been carried out by displaying the outcomes of projects that have been carb a been carb	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 sthat 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: <i>Tony Gaddis</i> <i>et al., Starting</i> <i>Out with</i> <i>Visual C#</i> <i>2012, Third</i> <i>Edition,</i> <i>Boston,</i> <i>Pearson.</i>	
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		Database programming	concepts - Explaining ADO.NET - Creating databases and tables - Writing SQL commands - Creating application connections to databases Implementing dataGridView	(20%), Individual Value (35%), Project Value (30%), and Presentation and Report Value (15%) Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment	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 prepared 3. Students prepared 3. Students completing the stages of 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 project that is being worked on) 5. Students make reports related to project that is being worked on) 5. Students make reports related to project sthat have been carried out by displaying the coures of project sthat have been	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	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 .	
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Learning model with
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3 X 50 Scientific approach
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Learning model with
the following stages
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 | Criteria:
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2. Students
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they face.
2. Students reveal the
project that will be
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3 X 50Scientific approach
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project that have been
carried out within the
schedule for
project that have been
completed.
Students
project that have been
carried out the stages
of the
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carried out
worked on
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 | Completed.
3 X 50Scientific approach
with the Project Based
Learning
model with
the following stages
the following stages
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model with the Stages
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issued to the problem size
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related to the problems
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2. Students begin to
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the project that they
they face.
2. Students make
they tace.
2. Students reveal the
experiences that have
been carried out with the
stages of the
project that that we been
to completing
the project that they
have prepared (the
the testages
of the
schedule that they
have been carried out with the
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3 X 50Scientific
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the following stages
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completing the project that
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they face.
2. Students make
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3X 50 Scientific approach
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Activities, Project
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Profuct
Assessment Material:
Explaining
Activities, Project
and activities
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schedule for
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project according to the
specified ima period.
6. Students related to
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specified ima period.
6. Students related to
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 | Criteria:
Group Value
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Project Value
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(15%)Scientific approach
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Project Value
(15%)Forms of
Assessment :
Participatory
AssessmentStudents
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 topic
that has
been
students
discuss to
formulate hypothesis
that has
been
agreed
upon during
the lesson.
in groups,
students
discuss to
formulate hypothesis
related to
the topic
that has
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upon during the project that
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related to
the stages of the
project according to the
project that will be worked on
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they face.
2. Students
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project that will be
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to answer
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worked on
to answer
the stages of the
project that will be
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the stages of the
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oucomes of projects
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 | Criteria:
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Assessment :
Participatory
Activites, Project
Results Assessment
(Product
Assessment)1. Students
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the stages of the student
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the specified
time periods.
that have been
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 | completed.
3 x 50Scientific
approach
with the Project Based
with the Project Based
(20%), Individual
Yould (25%), and
Trepert Value
(20%), and
model with
the following stages
1. Students observe the
problem
garced upon during the topic
that has been prepared
the topic that has been
agreed upon during the topic
students propert the problem schedule for
model with the following stages
stages
stages schedule for
problem
agreed upon during the tessor.
the topic that has been prepared
the topic that will be worked on to
answer the hypothesis
that has been prepared (her
the topic that will be worked on to
answer the hypothesis
that has been prepared (her
the twe face.
2. Students prepare the project that
will be worked on to
answer the hypothesis
that has been prepared (her
the tages of the
project that will be worked on
5. Students prepare (her
the twe face.
2. Students carcording to the
schedule that we been
carried out within the
specified time period.
6. Students prepare (her
the vace on
schedule for
project that will be worked on)
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4. Students cary out
the stages of the student on
project that we been
carried out within the
schedule for
worked on
4. Students
schedule for
the project that we been
completed.
3 x 50Material:
Matabase
schedule
that have been
carried out within the
schedule for
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 | completed.
3 X 50Scientific approach
with the Project Based
Learning
model with
the following stages
1. Students observe
the problem given by
the topic that has been
related to the problems
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related to the problems
agreed upon during the
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In groups,
students basen
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3 X 50Scientific
approach
with the Project Based
(20%), Individual
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Project Passesment:
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Explaining
database
the following stages
1. Students observe the
prolect passessment:
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3 X 50Scientific approach
with the Project Based
Learning
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(15%)Material:
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Explaining
ADO.NET -
Creating
related to the problem given by
the lecturer, referring to
related to the problems
students discuss to
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problem given by the
lecturer, referring to
the topic that has been
related to the problems
students been
agreed upon during the worked on to
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 | completed.Completed.CriteriaScientific approach
with the Project Based
(2006), individual
value (235%),
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 | Criteria:completed.Group ValueScientific approach
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Learning model with
the Bolowing stages
Based
Lissudents observe
the project that has been
greed upon during the
participatory
(15%)Material:
Explaining
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Creating
application
the topic that has been
prepared to the project that has
been
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schedule
for
the topic that has been
prepared to the project that has
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occupies of the students discuss to
prepare the project that has
prepared the spotheses
a schedule for
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Schedule to the project that is being
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3 X 50 completed.
20% Material:
Exclusion
with the Project Based
Learning model with
the following stages
1. Students observe
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stages Material:
2. Students observe
the problem given by
the topic that has been
related to problems
with the Project Based
Learning model with
the following stages
stages Material:
2. Students observe
the problem given by
the topic that has been
related to problems
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Project Value
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Presentation and
Report Value
(15%)Scientific approach
with the
Project the following stages
Based
1. Students observe the
problem given by
the lecturer, referring
the topic that has be
problem given by
the sessment i
assessmentStudents
stages
1. Students discuss to
formulate hypothese
related to the problem
given by the
lecturer, the topic
that has
been that has been prepare
agreed
upon during
the lesson.
In groups,
students
discuss to
formulate
hypotheses
related to
the stages of the
project that
begin to
prepare the
problems
the stages of the
sochedule for
completing the project that
will be worked on
to answer
they face.
2. Students
discuss to
formulate
hypotheses
schedule that will be
worked on
to answer
they face.
2. Students
discuss to
formulate
hypotheses
schedule that they
have prepared (the
voicet that is beign
to answer
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to answer the
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carried out within the
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Project
Based
(15%)Gobb), and
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(15%)Scientific
approach
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Project
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observe the
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the lesson.
In groups,
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discuss to
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discuss to
formulate
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project that will be worked on
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project that well be
worked on
to answer
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Learning model with
the following stages
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7 X 50 Scientific
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3 X 50 Scientific approach
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Learning model with
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3 X 500 Scientific approach
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the following stages
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carried out within the
specified time period. Creating
application
connections to
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3 x 50 Scientific approach
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3 X 50 Scientific approach
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Learning model with
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referring to
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related to
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will be worked on
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7 X 50 Scientific
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Learning
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In groups,
students prepare a
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the topic that is been
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the lesson.
In groups,
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carried out by
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reveal the
experiences
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3 X 50 Scientific approach
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Learning model with
the following stages
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3 X 500 Scientific approach
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Learning model with
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carried out within the
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3 x 50 Scientific approach
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3 X 50 Scientific approach
with the Project Based
Learning model with
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Learning model with
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with the Project Based
Learning model with
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robusty of
the project Scientific approach
with the Project Based
Learning model with
the topic that has been
agreed upon during the
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3 X 500 Scientific approach
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Learning model with
the following stages
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the lecturer, referring to
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concepts -
Explaining
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concepts -
Explaining
Atabase
concepts -
Students observe
the problem given by
the lecturer, referring to
product Material:
Explaining
Atabase
concepts -
Explaining
Atabase
concepts -
Explaining
Atabase
concepts -
Students discuss to
ommands -
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lecturer,
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is being
worked on
5. Students
carry out
the stages
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7. Students
rev</td><td>completed. Scientific approach with the Project Based (20%), Individual Yahle (35%). Material: Explaining (20%), and (2</td><td>completed
3x50 Scientific approach
with the Project Based
Learning model with
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(29%), and
Report Value
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Explaining
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1. Students observe
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3 × 50 Scientific
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Presentation and
Report Value
(35%) Material:
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Learning model with
the following
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Material:
Scientific approach
with the Project Based
Learning model with
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3X 50 Scientific
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Learning model with
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3 X 500 Scientific approach
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Learning model with
the following stages
1. Students observe
the problem given by
the lecturer, referring to
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Students observe
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product Material:
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concepts -
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Students discuss to
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5. Students
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3x50 Scientific approach
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Learning model with
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Explaining
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Learning model with
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Learning model with
the following stages
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sessesment Material:
Explaining
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concepts -
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concepts -
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Students observe
the problem given by
the lecturer, referring to
product Material:
Explaining
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Students discuss to
ommands -
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agreed upon during the
lecturer,
referring to
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3x50 Scientific approach
with the Project Based
Learning model with
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Learning model with
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Students discuss to
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3x50 Scientific approach
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Learning
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related to the problem
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the lesson. Students begin to
prepare the project
that will be worked on
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In groups,
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schedule for
completing the project
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In groups,
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they face.
2. Students prepare a
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with the Project Based
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3X 50 Scientific
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the following stages
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3 X 500 Scientific approach
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Learning model with
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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
that has been prepared
3. Students prepare a
great worked on to
answer the hypothesis
that has been prepared
3. Students prepare a
great due 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.
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 | 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
that has been prepared
3. Students begin to
prepare the project that
will be worked on to
answer the hypothese
schedule for
completing the project
that will be worked on
4. Students carry out
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Learning model with
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Learning model with
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carried out within the
specified time period
6. Students reveal th
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 | 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
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that will be worked on
4. Students carry out
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carried out within the
specified time period.
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Learning model with
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specified time period.
6. Students reveal the
experiences that have
been carried out by
displaying the
outcomes of projects
that have been
carried out by
displaying the
outcomes of projects
that have been
completed.
3 x 50

 | 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 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 to
answer the hypothesis
that has been prepared
3. Students carry out
the stages of the
project according to the
schedule that they
have prepared (the
lecturer observes each
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

 | 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
thay 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 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
 | Scientific approach
with the Project Based
Learning model with
the following stages
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will be worked on to
answer the hypothesis
that has been prepared
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that will be worked on
4. Students carry out
the stages of the
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have prepared (the
lecturer observes each
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carried out within the
specified time period.
6. Students reveal the
experiences that have
been carried out by
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 | Scientific approach
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Learning model with
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6. Students make
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3 x 50
 | Scientific approach
with the Project Based
Learning model with
the following stagesMaterial:
Explaining
database
concepts -
Explaining
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Creating
databases and
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Students discuss to
formulate hypotheses
related to the problems
they face.
2. Students begin to
prepare the project that
will be worked on to
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that has been prepared
3. Students carry out
the stages of the
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schedule that they
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lecturer observes each
stage of the student
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carried out within the
specified time period.
6. Students reveal the
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(B. Students reveal the
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3×50 Material:
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with the Project Based
Learning model with
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Project Value
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Learning
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1. Students
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the lesson.
In groups,
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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 they project that will be worked on 4. Students prepare a schedule for completing the stages of the project that the stages of 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 project sthat 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 stat 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%

				displaying the outcomes of projects that have been completed.			
5	students are able to apply database programming to simple case studies	- UISplay 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, 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 project that will be worked on 4. Students prepare a schedule for completing the troject that will be worked on 4. Students prepare a schedule for completing the project that will be worked on 5. Students project that is being worked on) 5. Students related to project that is being the project tha	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 CRUD application with C# Library: Benyamin Perkins, Jacob VH, Jon D.Reid, Beginning Visual C# 2015 Programming, Canada, John Wiley.	3%

6	Students are able	- Explaining	Criteria	carried out by displaying the outcomes of projects that have been completed. 3 X 50 Scientific	Scientific approach	Material	30%	
	to apply classes and objects to databases	ORM Classes and Objects - Explaining constructors - Explaining ORM - Practice creating a simple ORM	Group Value (20%), Individual Value (35%), Project Value (15%) Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment	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 prepare a schedule for completing the stages of the project that will be worked on 5. Students prepared (the lecturer observes each stage of the student project that is being worked on) 5. Students 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	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 sthat 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	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.		

				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 - 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 prepare 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 prepared 3. Students prepared 3. Students prepared 4. Students prepared 5. Students project that they have prepared (the lecturer observes each stage of the schedule that they have prepared (the lecturer observes each stage of the student project that is being worked on) 5. Students related to project sthat have been carried out within the stime 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 stuat 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. 3×50	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%

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	6. Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed. 3 X 50 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: <i>Benyamin</i> <i>Perkins, Jacob</i> <i>VH, Jon</i> <i>D.Reid,</i> <i>Beginning</i> <i>Visual C#</i> 2015 <i>Programming,</i> <i>Canada, John</i> <i>Wiley.</i>	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 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 sthat 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: <i>Tony Gaddis</i> <i>et al, Starting</i> <i>Out with</i> <i>Visual C#</i> <i>2012, Third</i> <i>Edition,</i> <i>Boston,</i> <i>Pearson.</i>	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 carried out			
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 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: <i>Tony Gaddis</i> <i>et al, Starting</i> <i>Out with</i> <i>Visual C#</i> <i>2012, Third</i> <i>Edition,</i> <i>Boston,</i> <i>Pearson.</i>	3%

				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 carried out by displaying the outcomes of projects that have been carried out by			
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 propared 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: <i>Tony Gaddis</i> <i>et al, Starting</i> <i>Out with</i> <i>Visual C#</i> <i>2012, Third</i> <i>Edition,</i> <i>Boston,</i> <i>Pearson.</i>	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 carried out by displaying the outcomes of projects that have been carried out by displaying the outcomes of projects that have been carried out by displaying the outcomes of projects that have been carried out by displaying the outcomes of projects that have been completed. 3 x 50			
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 project atat will be worked on to answer the hypothesis that has been grepared 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: <i>Tony Gaddis</i> <i>et al, Starting</i> <i>Out with</i> <i>Visual C#</i> <i>2012, Third</i> <i>Edition,</i> <i>Boston,</i> <i>Pearson.</i>	5%

13	Students are able	- Explaining	Criteria:	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 by displaying the outcomes of projects that have been carried out by displaying the completed. 3 × 50 Scientific	Scientific approach	Material: 1.	5%
	to implement and create controller classes	OP (Object Oriented Programming) - Explaining the concept of controllers - Practice creating controller classes	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	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	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 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. 2 × 50	Naterial: 1. OOP (Object Oriented Programming), 2. controller concepts, 3. Practice creating controller classes. References: <i>Tony Gaddis</i> <i>et al, Starting</i> <i>Out with</i> <i>Visual C#</i> <i>2012, Third</i> <i>Edition,</i> <i>Boston,</i> <i>Pearson.</i>	2-20

				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 completed.			
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: <i>Tony Gaddis</i> <i>et al, Starting</i> <i>Out with</i> <i>Visual C#</i> <i>2012, Third</i> <i>Edition,</i> <i>Boston,</i> <i>Pearson.</i>	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 carried out by displaying the outcomes of projects. that have been carried out by displaying the outcomes of projects. 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: <i>Tony Gaddis</i> <i>et al, Starting</i> <i>Out with</i> <i>Visual C#</i> <i>2012, Third</i> <i>Edition,</i> <i>Boston,</i> <i>Pearson.</i>	5%

				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 within the specified time period.	displaying the outcomes of projects that have been completed. 3 x 50		
16	End of Course Project Presentation	 Group Value (20%) Individual Value (25%) Project Value (30%) Presentation and Report Value (25%) 	Criteria: Cognitive Assessment, Attitude Assessment, and Psychomotor Assessment Form of Assessment : Project Results Assessment / Product Assessment, Test	3 x 50 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.
- 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.