

## Universitas Negeri Surabaya Faculty of Engineering, Undergraduate Study Program in Informatics Engineering

Document Code

## SEMESTER LEARNING PLAN

Courses			CODE		Course Far	nily		Crea	lit We	ight	SEME	STER	Compilation Date
Object O	riented Program	ming	5520203058		Compulsory			T=3	P=0	ECTS=4.7	7	3	July 17, 2024
AUTHOR	IZATION		SP Developer		Program Su	injecis	Cours	se Clu	ster C	oordinator	Study	Program C	oordinator
			Drs. Bambang S	Sujatmiko, M.T	г.						Adity	va Prapanca	S.T., M.Kom.
Learning model	Project Ba	sed Learni	ng										
Program	PLO study	/ program	that is charged	to the cours	e								
Learning Outcome (PLO)		PLO-2 Able to design and simulate multi-platform technology applications that are relevant to the needs of industry and society using theoretical concepts in the field of computer science/informatics knowledge (KNO-02)											
Program Objectives (PO)													
	PLO-PO N	latrix											
			P.0	PLO-2	]								
	PO Matrix	at the end	l of each learnin	g stage (Sub	o-PO)								
		F	P.O         Week           1         2         3         4         5         6         7         8         9         10         11         12         13         14         15					.5 16					
Short Course Descript	ion be used be concepts, 3	cause Java ava Virtual	pject-oriented prog a uses the concep Machine (JVM), g, applets and exce	ots of objects objects, class	and classes	in mak	king pro	ograms	s. Tea	ching mater	ials inclu	de an intro	luction to OOP
Reference	ces Main :												
	2. Jav 3. Mo 4. Ho	larold, E.R. 2014. Java Network Programming, 4th edition. O'Reilly. aworski, J. 1998. Java 2 Unleashed. Sams Publishing. Iodul Teori dan Student Activity Iolmes, B.J., Joice D.T. 2001. Object-Oriented Programming With Java, second edition. akker, J. 2005. Beginning Java Objects From Concepts to Code, second edition, Apress.											
	Supporters	6:											
Support lecturer	Agus Priha I Made Sua	nto, S.Ť., M rtana, S.Ko	.Kom.										
Week-	Final abilities each learning stage	of	Eval	luation		Lear Stude		elp Le rning ent As <mark>stima</mark>	metho signm	ids, ients,	m	earning aterials ferences ]	Assessment Weight (%)
	(Sub-PO)		Indicator	Criteria	& Form		ine ( ine )	0	nline	( online )	1.10	1	
(1)	(2)		(3)	(4	1)	(!	5)	1	(	(6)		(7)	(8)

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Students are able to understand the basics of Java programming	<ol> <li>Identify the basics of Java programming</li> <li>Identify Java literals, primitive data types, variable types, identifiers and operators in Java</li> </ol>	Criteria: 1.Cognitive Value (C3, C4, C5, and C6) Score 1 - 100 2.Character/Attitude Score Score 1 - 100 Form of Assessment : Participatory Activities	1. Students observe the problems given by the lecturer, referring to the topics 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 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 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	<ol> <li>Students observe the problems given by the lecturer, referring to the topics agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face.</li> <li>Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared</li> <li>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)</li> <li>Students make reports related to projects that have been carried out within the specified time period.</li> <li>Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed.</li> <li>x 50</li> </ol>	Material: Identifying the basics of Java programs, Java literals, primitive data types, variable types, identifiers and operators in Java Library: Harold, ER 2014. Java Network Programming, 4th edition. O'Reilly.	3%
			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			

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2	Students are able to understand classes and methods in Java to receive input and produce output	<ol> <li>Identify the types of classes and methods in input and output</li> <li>Explain classes and methods in input and output in an interactive program</li> <li>Explain the use of packages and their relationship to classes</li> </ol>	Criteria: 1.Cognitive Value (C3, C4, C5, and C6) Score 1 - 100 2.Character/Attitude Score Score 1 - 100 3.Performance Value Score 1 - 100 Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment, Practical Assessment	1. Students observe the problems given by the lecturer, referring to the topics 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 to answer the 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 students 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 related to projects that have been carried out	1. Students observe the problems given by the lecturer, referring to the topics 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. $3 \times 50$	Material: 1. Identifying types of classes and methods in input and output, 2. Explaining classes and methods in input and output in an interactive program, 3. Explaining the use of packages and their relationship with classes. <b>Reference:</b> Holmes, BJ, Joice DT 2001. Object- Oriented Programming With Java, second edition.	3%
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edifference:         Form of Assessment:         propage.         propage the project that will be worked on any wriables/methods, and provide and provide parameters to methods and provide parameters to methods and provide parameters to methods and provide parameters to methods.         propage the project that will be worked on the propage		<ol><li>Explain the</li></ol>	Score 1 - 100				
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<ul> <li>Practical Assessment</li> <li>Practical Assessment</li> <li>Protection Assessment<td></td><td>between instance</td><td></td><td></td><td></td><td></td><td></td></li></ul>		between instance					
Image: Statute     Implementation     Implementation     Implementation       4     Explains     Implementation     Implementation       and provide     parameters to     schedule prepared     Implementation       parameters to     the status carry out     implementation     implementation       d) variables     5. Identify the range     implementation     implementation       d) variables     6. Cassing primave     implementation     implementation       d) variables     implementation     implementation     implementation       d) variables <td< td=""><td></td><td>variables/methods</td><td></td><td>discuss to</td><td>answer the hypothesis</td><td>4. methods and</td><td></td></td<>		variables/methods		discuss to	answer the hypothesis	4. methods and	
4       Explains methods       related to and now to call and now to call parameters to methods       related to the problems       completing for a value scored       methods, 5.         5       didentify the range of value scored       completing the project according to the project that they or value scored       methods, 5.         6       6.6       completing the project of value scored       methods, 5.         7       Comparing objects       project that have project that they project that been project that have been completied.       Class of an object.         8       Determining the completing been schedule transet out that will be completing the project that have been completing the project according to the schedule that will be schedule that they been arried out by displaying the ductores of projects that have been completied.       Programming With Java, second 4.			Practical Assessment				
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				3 X 50	<u> </u>		

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6	Students are able to understand the	1.Explains how to	Criteria:	1. Students	1. Students observe	Material: Explains	3%
	concept of class	create your own	1.Cognitive Value	observe the	the problems given by	1. creating your	
	by designing their	class	(C3, C4, C5, and	problems	the lecturer, referring to	own class, 2. declaring	
	own classes	2.Explains the	C6) Score 1 - 100	given by the lecturer,	the topics agreed upon during the lesson. In	attributes and	
		attribute and	2.Character/Attitude	referring to	groups, students	methods for a	
		method	Score Score 1 -	the topics	discuss to formulate	class, 3. reference	
		declarations for	100 3.Performance Value	agreed upon	hypotheses related to	this to access	
		classes	Score 1 - 100	during the	the problems they face.	instance data, 4.	
		3.Explains reference this to	Scole 1 - 100	lesson. In	2. Students begin to	creating and	
		access instance	Forms of Assessment :	groups,	prepare the project that	calling overload	
		data	Participatory Activities,	students discuss to	will be worked on to answer the hypothesis	methods, 5. how to import and create	
		4.Explains the	Project Results	formulate	that has been prepared	packages, and 6.	
		creation and	Assessment / Product	hypotheses	3. Students prepare a	using	
		calling of	Assessment, Practical Assessment	related to	schedule for	library access	
		overloaded	Assessment	the	completing the project	modifiers :	
		methods		problems	that will be worked on	Holmes, BJ, Joice	
		5.Explains how to		they face. 2. Students	<ol> <li>Students carry out the stages of the</li> </ol>	DT 2001. Object- Oriented	
		import and create		begin to	project according to the	Programming With	
		packages		prepare the	schedule that they	Java, second	
		<ol> <li>Explain the use of access modifiers</li> </ol>		project that	have prepared (the	edition.	
		access moumers		will be	lecturer observes each		
				worked on	stage of the student		
				to answer	project that is being		
				the hypothesis	worked on) 5 . Students make		
				that has	reports related to		
				been	projects that have been		
				prepared	carried out within the		
				3. Students	specified time period.		
				prepare a	6. Students reveal the		
				schedule for completing	experiences that have been carried out by		
				the project	displaying the		
				that will be	outcomes of projects		
				worked on	that have been		
				4. Students	completed.		
				carry out the	3 x 50		
				stages of the project			
				according to			
				the			
				schedule			
				that they			
				have			
				prepared (the lecturer			
				(the lecturer observes			
				each stage			
				of the			
				student			
				project that			
				is being worked on)			
				5 . Students			
				make			
				reports			
				related to			
				projects that have been			
				nave 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			
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7	Students are able to understand the concepts of inheritance, polymorphism and interfaces	<ol> <li>Describe superclasses and subclasses in inheritance</li> <li>Explain overriding methods from superclasses</li> <li>Explaining polymorphism (abstract classes and interfaces)</li> </ol>	Criteria: 1.Cognitive Value (C3, C4, C5, and C6) Score 1 - 100 2.Character/Attitude Score Score 1 - 100 Forms of Assessment : Participatory Activities, Project Results Assessment, Practical Assessment, Practical Assessment	<ol> <li>Students observe the problems given by the lecturer, referring to the topics agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face.</li> <li>Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared</li> <li>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)</li> <li>Students related to projects that have been carried out within the specified time period.</li> <li>Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been carried out within the specified time period.</li> <li>Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been</li> </ol>	<ol> <li>Students observe the problems given by the lecturer, referring to the topics agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face.</li> <li>Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared</li> <li>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)</li> <li>Students make reports related to projects that have been carried out within the specified time period.</li> <li>Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed.</li> <li>\$ 50</li> </ol>	Material: 1. Describe superclasses and subclasses in inheritance, 2. Explain overriding methods from superclasses, final methods and final classes, and polymorphism (abstract classes and interfaces) <b>References:</b> <i>Holmes, BJ, Joice</i> <i>DT 2001. Object-</i> <i>Oriented</i> <i>Programming With</i> <i>Java, second</i> <i>edition.</i>	3%
8	UTS (USS)	Cognitive Values, Character Values, and Psychomotor Values	Form of Assessment : Test	Offline Quiz 2 X 50	Online Quiz 2 x 50	Material: All material that has been taught Library: Theory Module and Student Activity Material: All material that has been taught. Reference: Holmes, BJ, Joice DT 2001. Object- Oriented Programming With Java, second edition.	20%

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11	Students are able to understand the	1.Explain the definitions of AWT	Criteria: 1.Group Value (20%)	1. Students observe the	1. Students observe the problems given by	Material: Explains 1. Definition of	10%
	User Interface	and Swing	2.Individual Value (35	problems	the lecturer, referring to	AWT and Swing,	
	using the Abstract Windowing Toolkit	2.Explain the AWT	%)	given by the	the topics agreed upon	2. AWT	
	(AWT) and Swing	components in	3.Project Value (30	lecturer,	during the lesson. In	components in	
	( )	program creation	%)	referring to	groups, students	making programs,	
		3.Explain the	4.Report Value (15	the topics agreed upon	discuss to formulate	3. Layout	
		components of	%)	during the	hypotheses related to the problems they face.	Managers components in	
		Layout Managers		lesson. In	2. Students begin to	making programs,	
		in program	Forms of Assessment : Participatory Activities,	groups,	prepare the project that	4. Swing GUI	
		creation	Project Results	students	will be worked on to	components in	
		4.Explain the	Assessment / Product	discuss to	answer the hypothesis	making programs	
		components of Swing GUI in	Assessment, Practical	formulate hypotheses	that has been prepared 3. Students prepare a	Library: Theory Module and	
		making programs	Assessment	related to	schedule for	Student Activity	
		maning programo		the	completing the project		
				problems	that will be worked on	Material: Explains	
				they face.	4. Students carry out	1. Definition of	
				<ol> <li>Students begin to</li> </ol>	the stages of the project according to the	AWT and Swing,	
				prepare the	schedule that they	2. AWT	
				project that	have prepared (the	components in making programs,	
				will be	lecturer observes each	3. Layout	
				worked on	stage of the student	Managers	
				to answer	project that is being	components in	
				the hypothesis	worked on) 5 . Students make	making programs,	
				that has	reports related to	4. Swing GUI components in	
				been	projects that have been	making programs	
				prepared	carried out within the	References:	
				3. Students	specified time period. 6. Students reveal the	Holmes, BJ, Joice	
				prepare a schedule for	experiences that have	DT 2001. Object- Oriented	
				completing	been carried out by	Programming With	
				the project	displaying the	Java, second	
				that will be	outcomes of projects	edition.	
				worked on 4. Students	that have been completed.		
				carry out the			
				stages of	2 X 00		
				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			
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12	Students are able to understand	1.Explain the	Criteria:	1. Students	1. Students observe	Material: Explains	10%
l	User Interface	definition and use	1.Group Value (20%)	observe the problems	the problems given by the lecturer, referring to	<ol> <li>Definition and use of the</li> </ol>	
	handling using	of the delegation	2.Individual Value (35	given by the	the topics agreed upon	delegation event	
	User Interface	event model	%) 2 Project \/olug (20	lecturer,	during the lesson. In	model, 2. event	
	Handling	2.Identify event	3.Project Value (30 %)	referring to	groups, students	listeners in	
		classes 3.Explaining event	4.Report Value (15	the topics	discuss to formulate	programming, 3.	
		listeners in	%)	agreed upon	hypotheses related to	event handling	
		programming	70)	during the	the problems they face.	techniques in	
		4.Explain event	Forms of Assessment :	lesson. In	2. Students begin to	creating	
		handling	Participatory Activities,	groups, students	prepare the project that will be worked on to	applications, 4. adapter classes in	
		techniques in	Project Results	discuss to	answer the hypothesis	programming, 5.	
		application	Assessment / Product	formulate	that has been prepared	inner classes and	
		creation	Assessment, Practical	hypotheses	3. Students prepare a	anonymous inner	
		5.Explaining	Assessment	related to	schedule for	classes in	
		adapter classes in		the	completing the project	programming, and	
		programming		problems	that will be worked on	identifying classes-	
		<ol><li>Explaining inner</li></ol>		they face.	4. Students carry out	class event	
		classes and		<ol> <li>Students begin to</li> </ol>	the stages of the project according to the	Library: Theory and Student	
ĺ		anonymous inner		prepare the	schedule that they	Activity Modules	
ĺ		classes in		project that	have prepared (the		
ĺ		programming		will be	lecturer observes each	Material: Explains	
				worked on	stage of the student	1. Definition and	
ĺ				to answer	project that is being	use of the	
				the	worked on)	delegation event	
				hypothesis that has	5 . Students make reports related to	model, 2. event	
l				that has been	projects that have been	listeners in	
				prepared	carried out within the	programming, 3. event handling	
				3. Students	specified time period.	techniques in	
				prepare a	6. Students reveal the	making	
				schedule for	experiences that have	applications, 4.	
				completing	been carried out by	adapter classes in	
				the project	displaying the	programming, 5.	
				that will be worked on	outcomes of projects that have been	inner classes and	
				4. Students	completed.	anonymous inner classes in	
				carry out the		programming, and	
				stages of		identifying classes-	
				the project		class event	
				according to		Bibliography:	
				the		Holmes, BJ, Joice	
				schedule		DT 2001. Object-	
				that they have		Oriented	
				prepared		Programming With Java, second	
				(the lecturer		edition.	
				observes		Culton.	
ĺ				each stage			
				of the			
				student			
l				project that is being			
				worked on)			
l				5 . Students			
				make			
				reports			
				related to			
				projects that			
				have been carried out			
ĺ				within the			
				specified			
ĺ				time period.			
				6. Students			
ĺ				reveal the			
				experiences			
ĺ				that have			
				been carried out by			
ĺ				displaying			
				the			
ĺ			1	outcomes of			
Į				projects that			
				have been			

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13	Students are able to understand threads in programming	<ol> <li>Explain the definition of thread</li> <li>Explaining threads</li> <li>Explaining thread classes in programming</li> <li>Explaining the thread</li> <li>Explains synchronization</li> <li>Explains communication methods between threads (interthread)</li> <li>Explain concurrency capabilities</li> </ol>	Criteria: 1. Cognitive Value (C3, C4, C5, and C6) Score 1 - 100 2. Character/Attitude Score Score 1 - 100 Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment / Product Assessment	<ol> <li>Students observe the problems given by the lecturer, referring to the topics agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to problems they face.</li> <li>Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared</li> <li>Students prepare a schedule for completing the project that will be worked on</li> <li>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)</li> <li>Students related to project that is being worked on)</li> <li>Students related to project that is being worked on)</li> <li>Students related to project that have been carried out within the specified time period.</li> <li>Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed.</li> <li>X 50</li> </ol>	<ol> <li>Students observe the problems given by the lecturer, referring to the topics agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face.</li> <li>Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared</li> <li>Students prepare a schedule for completing the project that will be worked on</li> <li>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.</li> <li>Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed.</li> <li>X to</li> </ol>	Material: Explains 1. definition of threads, 2. basics of threads, 3. thread classes in programming, 4. threads, 5. synchronization, 6. communication methods between threads (interthread), and 7. concurrency capabilities <b>Reader:</b> Holmes, <i>BJ</i> , Joice DT 2001. Object- Oriented Programming With Java, second edition.	5%

14	Students are able to understand the concept of network-based programming and applets in making programs	<ol> <li>Explain the basic concepts of networking</li> <li>Identify the types of Java network packages</li> <li>Explain the definition of Applet</li> <li>Explain how to use Applets</li> <li>Explain the Applet method in programming</li> </ol>	Criteria: 1.Group Value (30%) 2.Individual Value (25 %) 3.Project Value (30 %) 4.Report Value (15 %) Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment / Product Assessment	<ol> <li>Students observe the problems given by the lecturer, referring to the topics 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 project that is being worked on) 5. Students reports related to project shat 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 carried out by displaying the outcomes of projects that have been been carried out by displaying the outcomes of projects that have been been completed. 3 × 50</li> </ol>	<ol> <li>Students observe the problems given by the lecturer, referring to the topics agreed upon during the lesson. In groups, students discuss to formulate hypotheses related to the problems they face.</li> <li>Students begin to prepare the project that will be worked on to answer the hypothesis that has been prepared</li> <li>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.</li> <li>Students reveal the experiences that have been carried out by displaying the outcomes of projects that have been completed.</li> <li>X 50</li> </ol>	Material: Explains 1. basic networking concepts, 2. Applet definition, 3. How to use Applets, 4. Applet methods in programming, and Identifying types of Java network packages Library: Theory and Student Activity Modules	5%

15	Students are able to understand I/O Stream in managing files	<ol> <li>Explain the types of streams in general</li> <li>Explaining Reader classes</li> <li>Explain the InputStream classes</li> <li>Explain the OutputStream classes</li> <li>Explain serialization and deserialization</li> </ol>	Criteria: 1.Group Value (30%) 2.Individual Value (25%) 3.Project Value (30%) 4.Report Value (15%) Forms of Assessment : Participatory Activities, Assessment / Product Assessment, Practical Assessment	1. Students observe the problems given by the lecturer, referring to the topics 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 prepared 3. Students carry out the stages of 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 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: Students can explain 1. types of streams in general, 2. Reader classes, 3. Writer classes, 4. InputStream classes, snd 6. serialization and deserialization Library: Theory and Student Activity Modules	10%
16	Students are able to understand generic concepts (classes and methods) in programming	<ol> <li>Visual Design (15%)</li> <li>At least 2 algorithms involved (Sorting and Searching) (25%)</li> <li>Program complexity (20%)</li> <li>Functionality and Originality (15%)</li> <li>Packaging (10%)</li> <li>Databases (15%)</li> </ol>	Criteria: 1.Group Value (25 %) 2.Individual Value (25 %) 3.Project Value (40 %) 4.Report Value (10 %) Forms of Assessment : Project Results Assessment / Product Assessment, Portfolio Assessment, Practice / Performance, Tests	End of Course Project Presentation for each group 3 X 50	End of Course Project Presentation for each group	Material: Accumulated competency during one semester which is implemented in the form of a Final Project for Library Courses : Theory Module and Student Activity	0%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	29.16%
2.	Project Results Assessment / Product Assessment	24.66%
3.	Practical Assessment	26.16%
4.	Test	20%
		99.98%

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.
- Forms of learning: Lecture, Response, Tutorial, Seminar or equivalent, Practicum, Studio Practice, Workshop Practice, Field 8. 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 subtopics.
- 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.