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

Document Code

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|--|-------|---|--|------------------------------------|--------------------------------|---------------------------------|---------------------------------------|--------------------------------|-------------------------------------|------------------------------|---------------------------------|-------------------------|--------------------------------|--------------------------------|-----------------------------------|--------------------------|---------------------------------|-------------------------------|-------------------|------------------------------|----------|
| | | | | | SI | EME | STE | R L | EAR. | RNIN | IG P | LA | N | | | | | | | | |
| Courses | | | | CODE | | | | | | | Course | Fam | ily | C | Credit | Weigl | ht | SEMES | | Compilatio Date | n |
| Object Ba | ase F | Programming | | 832070 | 3058 | | | | | | | | | 1 | =3 | P=0 E | CTS=4.77 | 0 | | July 18, 202 | 24 |
| AUTHOR | | | | SP Dev | | | | | | | | | | | | | ordinator | | | , . | |
| , and the state of | | | | | | | | | | | | | | | | | | Study Coordi | | ng Sujatmiko | |
| Learning | | Project Based L | earning | | | | | | | | | | | | | | | | М. | .Ť. ´ | _ |
| model | | DI O study and | | | 41 | | | | | | | | | | | | | | | | _ |
| Program Learning | 9 | Program Object | gram that is cha | rgeu to | the cot | ırse | | | | | | | | | | | | | | | |
| Outcome (PLO) | es | PO - 1 | Able to describe, | explain (| create i | use obie | cts and | classe | s in obje | ct-orien | ted prog | ramr | mina | | | | | | | | |
| | | PO - 2 | Able to design pro | | | | | | 3 III Objet | Ct-Officit | teu prog | ıaııı | illing | | | | | | | | |
| | | PO - 3 | Able to define get | | | | | | | | | | | | | | | | | | |
| | | PO - 4 | Able to design an | | | | | | | | | | | | | | | | | | |
| | | PO - 5 | Able to use excep | | | | | | | | | | | | | | | | | | |
| | | PO - 6 | | | | | | | | | | | | | | | | | | | |
| | | PO - 6 Able to create programs using AWT and Swing in Java PLO-PO Matrix | | | | | | | | | | | | | | | | | | | |
| | | P.O. PO-1 PO-2 PO-3 PO-6 PO-6 PO-6 PO-1 PO-6 PO-1 PO-6 PO-1 PO-0 PO-1 PO-0 PO-1 PO-1 PO-1 PO-1 PO-2 PO-3 PO-1 PO-2 PO-3 PO-4 PO-3 PO-4 PO-5 PO-6 PO-6 PO-6 PO-6 PO-6 PO-6 PO-6 PO-6 | | | | | | | | | 16 | | | | | | | | | | |
| Short Course Descript | ion | This course tead uses the concept methods, constru | hes object-oriente is of objects and cl actors, I/O, inherita | d prograr asses in nce, enca | nming o making apsulatio | oncepts progran on, polyr | and te | echnique ching m m, over | es. In te aterials i loading, | aching include UML, fi | the PBC an intro iles, AW | O cor ducti T, Sv | ncept, thion to Oo wing, ap | ne Java OP cond plets an | prog cepts d exc | rammir Java eption | ng languag Virtual Mac s. | je will be chine (JV | used M), obj | because Jar jects, classe | va s, |
| Reference | ces | Main : | | | | | | | | | | | | | | | | | | | |
| | | 2. Jaworski 3. Modul Te 4. Holmes, 5. Bakker, 3 | E.R. 2014. Java Ne , J. 1998. Java 2 L eori dan Student A B.J., Joice D.T. 20 J. 2005. Beginning | Jnleashed ctivity 101. Objed | d. Sams | Publish | ning. grammir | ng With | Java, se | | | | | | | | | | | | |
| | | Supporters: | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| Supporti | ing | g Drs. Bambang Sujatmiko, M.T. | | | | | | | | | | | | | | | | | | | |
| Week- | eac | | | | | Evalua | ation | | | | _ | | | Learni Student Esti | ng m Assi <mark>mate</mark> | gnmer d time | nts, | Learr mater [Refere | rials ences | Assessme Weight (% | |
| | (Suř | | Indicator Criteria & Form | | | | Offline (Online (online) offline) | | | 1 | | | | | | | | | | | |

(4)

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(6)

(7)

(8)

(3)

| 1 | Students are able to understand the objectives of the course and apply VisualStudio.NET and Database programming | 1. ExplainingDatabaseIntegrationWithFramework. Net 2. Implementing query creation and relationships between tables 1. ExplainingDatabaseIntegrationWithFramework. Net 3. Implementing query creation and relationships between tables 1. ExplainingDatabaseIntegrationWithFramework. Net 3. Implementing query creation and relationships between tables | 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 problems given by the lecturer, referring to the topics that have been agreed upon during the lesson. As a group, students discuss to formulate hypotheses related to the problems faced.2. Students begin to prepare projects that will be carried out to answer the hypotheses that have been gropers a schedule for completing the project to be carried out 4. Students prepare a schedule for completing the project to be carried out 4. Students carry out the stages of the project according to the schedule they have prepared (the lecturer observes each stage of the project the stages of the project are working on) 5. Students make reports related to protest that have been carried out and within the specified | | 0% |
|---|--|--|--|---|--|----|
| | | | | reports related to projects that have been carried out and within | | |

| 2 | Students are able | 1.explain the concept of databases | Criteria: | Scientific | | 0% |
|---|-------------------|--|---|----------------------|---|----|
| | to apply database | 2.explains ADO.NET | Group Value (20%), | approach | | |
| | programming | 3.create databases and tables | Individual Value (35%), | with the | | |
| | | 4.write SQL commands | Group Value (20%), Individual Value (35%), Project Value (30%), and Presentation and | Project | | |
| | | 5.create an application connection to the database | Report Value (15%) | Based | | |
| | | 6.implement dataGridView | | Learning | | |
| | | O.Implement dataOnd view | Forms of Assessment : | model with | | |
| | | | Participatory Activities, | the following | | |
| | | | Project Results | stages 1. | | |
| | | | Assessment / Product | Students | | |
| | | | Assessment | observe the | | |
| | | | | problems | | |
| | | | | given by the | | |
| | | | | lecturer, | | |
| | | | | referring to | | |
| | | | | the topics | | |
| | | | | that have | | |
| | | | | been agreed | | |
| | | | | upon during | | |
| | | | | the lesson. | | |
| | | | | As a group, | | |
| | | | | students | | |
| | | | | discuss to | | |
| | | | | formulate | | |
| | | | | hypotheses | | |
| | | | | related to | | |
| | | | | the | | |
| | | | | problems faced.2. | | |
| | | | | | | |
| | | | | Students begin to | | |
| | | | | prepare | | |
| | | | | projects that | | |
| | | | | will be | | |
| | | | | carried out | | |
| | | | | to answer | | |
| | | | | the | | |
| | | | | hypotheses | | |
| | | | | that have | | |
| | | | | been | | |
| | | | | prepared 3. | | |
| | | | | Students | | |
| | | | | prepare a | | |
| | | | | schedule for | | |
| | | | | completing | | |
| | | | | the project | | |
| | | | | to be carried | | |
| | | | | out 4. | | |
| | | | | Students | | |
| | | | | carry out the | | |
| | | | | stages of | | |
| | | | | the project | | |
| | | | | according to | | |
| | | | | the | | |
| | | | | schedule | | |
| | | | ĺ | they have | | I |
| | | | | prepared | | |
| | | | | (the lecturer | | |
| | | | | observes | | |
| | | | | each stage | | |
| | | | | of the | | |
| | | | | project the | | |
| | | | | students are | | |
| | | | | working on) | | |
| | | | | 5. Students | | |
| | | | | make | | |
| | | | | reports | | |
| | | | | related to | | |
| | | | | projects that | | |
| | | | | have been | | |
| | | | | carried out | | |
| | | | | and within | | |
| | | | | the specified | | |
| | | | | time period | | |
| | | | | 6. Students | | |
| | | | | reveal their | | |
| | | | | experiences | | |
| | | | | by showing | | |
| | | | | the | | |
| | | | | outcomes of | | |
| | | | | completed | | |
| | | | | projects | | |
| | | | | 3x50 | | |
| | | | 1 | | I | |

| | control structures | | 1.Cognitive Score | observe the | | 1 |
|---|--|--|--|----------------------------|--|----|
| | | 2.explain the loop control structure 3.explain branching statements | (C3, C4, C5, and | problems | | |
| | | | C6) Score 1 - 100 2.Character/Attitude | given by the lecturer, | | |
| | | | Score Score 1 - | referring to | | |
| | | | 100 | the topics that have | | |
| | | | 3.Performance Score Score 1 - 100 | been agreed | | |
| | | | Score 1 - 100 | upon during | | |
| | | | Form of Assessment : | the lesson. As a group, | | |
| | | | Participatory Activities | students | | |
| | | | | discuss to formulate | | |
| | | | | hypotheses | | |
| | | | | related to the | | |
| | | | | problems | | |
| | | | | faced.2. | | |
| | | | | Students begin to | | |
| | | | | prepare | | |
| | | | | projects that | | |
| | | | | will be carried out | | |
| | | | | to answer | | |
| | | | | the hypotheses | | |
| | | | | that have | | |
| | | | | been prepared 3. | | |
| | | | | Students | | |
| | | | | prepare a | | |
| | | | | schedule for completing | | |
| | | | | the project | | |
| | | | | to be carried out 4. | | |
| | | | | Students | | |
| | | | | carry out the stages of | | |
| | | | | the project | | |
| | | | | according to | | |
| | | | | the schedule | | |
| | | | | they have | | |
| | | | | prepared (the lecturer | | |
| | | | | observes | | |
| | | | | each stage of the | | |
| | | | | project the | | |
| | | | | students are | | |
| | | | | working on) 5. Students | | |
| | | | | make | | |
| | | | | reports related to | | |
| | | | | projects that | | |
| | | | | have been carried out | | |
| | | | | and within | | |
| | | | | the specified | | |
| | | | | time period 6. Students | | |
| | | | | reveal the | | |
| | | | | experiences they have | | |
| | | | | had by | | |
| | | | | showing the outcomes of | | |
| | | | | the projects | | |
| | | | | they have completed. | | |
| | | | | 3x50 | | |
| 4 | Students are able | 1.explains the definition of an array | Criteria: | | | 0% |
| | to understand the concept of arrays | explains the declaration and use of 1-dimensional | 1.Cognitive Score | | | |
| | | arrays | (C3, C4, C5, and C6) Score 1 - 100 | | | |
| | | 3.describes the elements in the array 4.Explains determining the number of elements in | 2.Character/Attitude | | | |
| | | an array | Score Score 1 - | | | |
| | | 5.Explain the declaration and use of multi- | 100 3.Performance Value | | | |
| | | dimensional arrays | Score 1 - 100 | | | |
| | | | | | | |
| | | | Form of Assessment : Participatory Activities | | | |

| 1 | 1 | | | | 1 | |
|---|---------------------------|---|-------------------------------------|------------------------------|---|----|
| 5 | Students are able | 1.Explain the concept of Object Oriented | Criteria: | Students | | 0% |
| | to understand the | Programming | 1.Cognitive Score | observe the | | |
| | classes available in | 2.Explain the difference between objects and | (C3, C4, C5, and | problems | | |
| 1 | the Java Class Library | classes | C6) Score 1 - 100 | given by the | 1 | |
| | Library | | 2.Character/Attitude | lecturer, | | |
| 1 | | 3.Explain the difference between instance | | referring to | | l |
| | | variables/methods and class (static) | Score Score 1 - | the topics | | |
| | | variables/methods | 100 | that have | | |
| | | 4.Explains methods and how to call and provide | Performance Value | haan agraad | | |
| | | parameters to methods | Score 1 - 100 | been agreed | | |
| | | 5.Identify the range of variables | 000.01 100 | upon during | | |
| | | | Form of Assessment : | the lesson. | | |
| | | Casting primitive and object data types | Participatory Activities, | As a group, | | |
| | | 7.Comparing objects | Prostical Assessment | students | | |
| | | 8.Determines the class of an object | Practical Assessment | discuss to | | |
| | | • | | formulate | | |
| | | | | hypotheses | | |
| | | | | related to | | |
| | | | | the | | |
| | | | | problems | | |
| | | | | | | |
| | | | | faced.2. | | |
| | | | | Students | | |
| 1 | | | | begin to | | |
| 1 | | | | prepare | | |
| 1 | | | | projects that | | |
| | | | | will be | | |
| 1 | | | | carried out | | |
| 1 | | | | to answer | | |
| 1 | | | | | | |
| 1 | | | | the | | |
| | | | | hypotheses | | |
| | | | | that have | | |
| | | | | been | | |
| | | | | prepared 3. | | |
| | | | | Students | | |
| | | | | prepare a | | |
| | | | | schedule for | | |
| | | | | completing | | |
| | | | | | | |
| | | | | the project | | |
| | | | | to be carried | | |
| | | | | out 4. | | |
| | | | | Students | | |
| | | | | carry out the | | |
| | | | | stages of | | |
| | | | | the project | | |
| | | | | according to | | |
| | | | | | | |
| | | | | the | | |
| | | | | schedule | | |
| | | | | they have | | |
| | | | | prepared | | |
| | | | | (the lecturer | 1 | |
| | | | | observes | 1 | |
| | | | | each stage | 1 | |
| | | | | of the | 1 | |
| 1 | | | | | | |
| | | | | project the | 1 | |
| 1 | | | | students are | | |
| 1 | | | | working on) | | |
| | | | | Students | | |
| | | | | make | 1 | |
| | | | | reports | 1 | |
| | | | | related to | 1 | |
| 1 | | | | projects that | | |
| 1 | | | | have been | | |
| | | | | carried out | | |
| | | | | and within | 1 | |
| | | | | | 1 | |
| | | | | the specified | 1 | |
| | | | | time period | 1 | |
| | | | | Students | 1 | |
| | | | | reveal their | 1 | |
| 1 | | | | experiences | 1 | |
| 1 | | | | by showing | 1 | |
| 1 | | | | the | 1 | |
| 1 | | | | outcomes of | | |
| | | | | | 1 | |
| | | | | completed | 1 | |
| | | | | projects | 1 | |
| 1 | | | | 3x50 | 1 | |
| | ı L | | L | | 1 | |

| | | | _ | | 1 | |
|---|--|--|---|----------------------------|---|----|
| 6 | Students are able | 1.Explains how to create your own class | Criteria: | 1. Students | | 0% |
| | to understand the concept of class by | 2.Explains the attribute and method declarations for | 1.Cognitive Score | observe the | | |
| | designing their own | classes | (C3, C4, C5, and | problems | | |
| | classes | 3.describes reference this to access instance data | C6) Score 1 - 100 | given by the | | |
| | | 4.explains the creation and calling of overloaded | 2.Character/Attitude | lecturer, | | |
| | | methods | Score Score 1 - | referring to | | |
| | | 5.explains how to import and create packages | 100 | the topics | | |
| | | 6.explain the use of access modifiers | Performance value | that have been agreed | | |
| | | | score 1-100 | upon during | | |
| | | | _ | the lesson. | | |
| | | | Forms of Assessment : | As a group, | | |
| | | | Participatory Activities, | students | | |
| | | | Project Results | discuss to | | |
| | | | Assessment / Product Assessment, Practical | formulate | | |
| | | | Assessment | hypotheses | | |
| | | | 7 ISSESSITION | related to | | |
| | | | | the | | |
| | | | | problems | | |
| | | | | faced.2. Students | | |
| | | | | begin to | | |
| | | | | prepare | | |
| | | | | projects that | | |
| | | | ĺ | will be | | |
| | | | | carried out | | |
| | | | | to answer | | |
| | | | | the | | |
| | | | | hypotheses | | |
| | | | | that have | | |
| | | | | been | | |
| | | | | prepared 3. Students | | |
| | | | | prepare a | | |
| | | | | schedule for | | |
| | | | | completing | | |
| | | | | the project | | |
| | | | | to be carried | | |
| | | | | out 4. | | |
| | | | | Students | | |
| | | | | carry out the | | |
| | | | | stages of | | |
| | | | | the project | | |
| | | | | according to | | |
| | | | | the | | |
| | | | | schedule they have | | |
| | | | | prepared | | |
| | | | | (the lecturer | | |
| | | | | observes | | |
| | | | ĺ | each stage | | |
| | | | | of the | | |
| | | | | project the | | |
| | | | ĺ | students are | | |
| | | | | working on) | | |
| | | | | 5. Students | | |
| | | | | make | | |
| | | | | reports | | |
| | | | ĺ | related to | | |
| | | | ĺ | projects that have been | | |
| | | | | carried out | | |
| | | | ĺ | and within | | |
| | | | ĺ | the specified | | |
| | | | | time period | | |
| | | | | 6. Students | | |
| | | | | reveal the | | |
| | | | ĺ | experiences | | |
| | | | | they have | | |
| | | | | had by | | |
| | | | | showing the | | |
| | | | | outcomes of | | |
| | | | | the projects | | |
| | | | | they have | | |
| | | | | | | |
| | | | | completed. 3x50 | | |

| 7 | Students are able to understand the concepts of inheritance, polymorphism and interfaces | 1.Describe superclasses and subclasses in inheritance 2.explains the overriding method of the superclass 3.explains final methods and final classes 4.explain polymorphism (abstract classes and interfaces) | Criteria: 1.Cognitive Score (C3, C4, C5, and C6) Score 1 - 100 2.Character/Attitude Score Score 1 - 100 3.Performance Value Score 1 - 100 Form of Assessment: Participatory Activities | 1. Students observe the problems given by the lecturer, referring to the topics that have been agreed upon during the lesson. As a group, students discuss to formulate hypotheses related to the problems faced.2. Students begin to prepare projects that will be carried out to answer the hypotheses that have been prepared 3. Students prepare a schedule for completing the project to be carried out 4. Students carry out the stages of the project to be carried out 4. Students carry out the stages of the project the stages of the project the students carry out the stages of the project the students are working on) 5. Students reports related to projects that have been carried out and within the specified time period 6. Students reveal the experiences they have | | 0% |
|---|--|--|---|---|--|----|
| | | | | the specified time period 6. Students reveal the experiences they have had by showing the outcomes of the projects they have completed. 3x50 | | |
| 8 | UTS | | Form of Assessment : Test | offline quiz 2x50 | | 0% |

| Sudders are abide to indexistant object-criemed appropriation using UMA interior. I Explains between degramms in complex designation of design A Explaining activity diagrams in object-oriented application design A Explaining activity diagrams in object-oriented application design I Explaining activity diagrams A Explaining activity diagrams A Explaining activity diagrams A Explaining ac | | | | _ | | | |
|--|------|-------------------|--|---------------------------|----------------------------|---|----|
| To understand Company | St | Students are able | 1.Explains how to design in Object Oriented | Criteria: | 1. Students | | 0% |
| Categor with and approach usang application design 3. Explaining class diagrams in object-oriented application design 5. Explaining places of design 4. As a control of application design 5. Explaining classing of the control of application design 5. Explaining control of the place oriented application design 6. Explaining classing of the control of application design 6. Explaining classing of the place oriented application design 6. Explaining classing or the place of | to | o understand | | | observe the | | - |
| application design Libration | de | lesign with an | | | | | |
| UML notation 3. Explaining class diagrams in object-oriented application design 4. Explaining activity diagrams in object-oriented application design 5. Explain sequence diagrams in object-oriented application design 4. Explaining activity diagrams in object-oriented application design 5. Explain sequence diagrams in object-oriented application design 4. Septiment I Product Assessment | ob | bject-oriented | | (25%) | | | |
| a. Explaining activity diagrams in object-oriented application design 5. Explain sequence diagrams in object-oriented application design 6. Explain sequence diagrams in object-oriented application design 7. Explain sequence diagrams in object-oriented application design 8. Explain sequence diagrams in object-oriented application design 8. Explain sequence diagrams in object-oriented application design and the sequence of | ap | pproach using | application design | 2 project value (2001) | | | |
| 4 Explaining activity diagrams in object-oriented application design 5 Explain sequence diagrams in object-oriented application design 6 Explaining activity diagrams in object-oriented application design 7 Explain sequence diagrams in object-oriented application design 8 Explaining activity diagrams in object-oriented application design 8 Explaining activity diagrams in object-oriented application design 8 Explaining activity diagrams in object-oriented application design 9 Explaining activity diagrams in object-oriented application design 1 Explaining activity diagrams in object-oriented application design 1 Explaining activity diagrams in object-oriented application design 2 Explaining activity diagrams in object-oriented application design 2 Explaining activity diagrams in object-oriented application design 2 Explaining activity diagrams in object-oriented application design activity diagrams in object design activity diagrams are application design and activity diagrams are application designed at activity diagrams are activitied to activities and activities are act | l oi | ivi∟ HUlaliUH | o.⊨xpiaining class diagrams in object-oriented | 3.project value (30%) | | | |
| S. Explain sequence diagrams in object-oriented application design 5. Explain sequence diagrams in object-oriented application design Assessment / Forduct | 1 | | | 4.Report value (15%) | | | |
| specialism design 5 Explain sequence diagrams in object-oriented replication design Assessment / Product Assessm | | | | F | | | |
| S.Explain acquerice diagrams in object-oriented Assessment / Product Ass | | | | | | | |
| Project Heasins Assessment of Product Assessment services the services of the | | | 5.Explain sequence diagrams in object-oriented | Participatory Activities, | | | |
| Assessment Product Assessment Product Assessment I young and group, students discuss to formulate so related to the problems faced. 2. The product of the problems faced 2. The product of the problems faced 3. The product of the problems faced 3. The propert of | | | application design | | | | |
| subdens discuss to formulate the problems formulate the problems formulated to the proper proper proper proper proper proper formulated to some formulated to the proper a schedule for completing the proper a schedule for completing the proper to some formulated to the stages of the proper to some formulated to proper to some formulated | | | .,, | | | | |
| discuss to formulate hypotheses related to selected to | | | | Assessment | | | |
| formulate hypotheses related to several problems related to several problems taced 2. Students begin to proper the property of the property of the carned out to answer the carned out to answer the property of the property | | | | | | | |
| lypotheses related to the present a common a com | | | | | | | |
| related to the problems faced 2.2 So the problems faced 2.2 So the problems faced 2.2 So the problems of the proper of propers of propers of propers of propers of propers of projects that will be carried out the prosect of the propers of the prop | | | | | | | |
| the problems faced 2. Students below the proper projects that will be carried out to answer the proper projects that will be carried out to answer the proper projects that will be carried out to answer the proper projects that will be carried out to answer the proper proper proper proper project to be carried out 4. Students prepare a schedule for our project to be carried out 4. Students carry out the stages of the project to be carried out 4. Students carry out the stages of the project | | | | | | | |
| problems faced 2. Students begin to prepare prepare problems faced 2. Students begin to prepare problems problems for the students are for the students for | | | | | | | |
| faced 2. Students begin to prepare that will be carried out to answer the hypotheses that have be hypotheses that have the project that hypotheses that have the stages of the project the project that hypotheses that have been carried out and within the specified the specified that have been carried out and within the specified the specified that have been carried out and within the specified the specified that have been carried out and within the specified that have been carried out that hypotheses that hypothese | | | | | | | |
| Students begin to prepare projects that will be stop another to another the hypotheses that have been prepared 3. Students project the students project to be carried out 4. Students dout the stages of the project to be carried out 4. Students dout the stages of the project the carried out 4. Students dout the stages of the project the carried out 4. Students dout the stages of the project the carried the project the carried to the the they have prepared up the project the schedule they have prepared of the the schedule they have prepared of the of the students are working on) S. Students related to projects that have been carried out and with the the period d. S. Students reports related to projects that have been carried out and with the period d. S. Students reveal their experiences by showing the owners of completed | | | | | | | |
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| 10 | Students are able | 1.explain exceptions | Criteria: | 1. Students | | 0% |
| | to understand the | 2.explains exception handling using the try-catch- | 1.Group Value(20%) | observe the |] | |
| | basics of exception handling and | finally block | 2.Individual Value | problems | | |
| | assertions in | 3.explain recursive programming | (35%) | given by the |] | |
| | advanced | 4.explain abstract data types in programming | 3.Project Value | lecturer, |] | |
| | programming | 5.explain algorithms in programming | (30%) | referring to |] | |
| | | 3.explain algorithms in programming | 4.Report Value (15%) | the topics | | |
| | | | 4.Report Value (15%) | that have | | |
| | | | Form of Assessment : | been agreed | | |
| | | | Participatory Activities | upon during | | |
| | | | Faiticipatory Activities | the lesson. | | |
| | | | | As a group, | | |
| | | | | students | | |
| | | | | discuss to | | |
| | | | | formulate | | |
| | | | | hypotheses | | |
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| | | | | completing | | |
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| 13 | Students are able | 1.Explain the definition of thread | Criteria: | 1. Students | | 0% |
|----|---------------------------|--|---------------------------|--------------------------|---|----|
| | to understand | 2.Explains the basics of threads | 1.Cognitive Score | observe the | | |
| | threads in programming | 3.Explaining thread classes in programming | (C3, C4, C5, and | problems | | |
| | programming | 4.explains the thread | C6) Score 1 - 100 | given by the | | |
| | | 5.Explains synchronization | 2.Character/Attitude | lecturer, | | |
| | | 6.Explains communication methods between | Score Score 1 - | referring to | | |
| | | threads (interthread) | 100 | the topics | | |
| | | 7.Explain concurrency capabilities | 3.Performance Value | that have | | |
| | | 7. Explain concurrency capabilities | Score 1 - 100 | been agreed | | |
| | | | 3core 1 - 100 | upon during | | |
| | | | Forms of Assessment : | the lesson. | | |
| | | | Participatory Activities, | As a group, | | |
| | | | Project Results | students | | |
| | | | Assessment / Product | discuss to | | |
| | | | Assessment, Practical | formulate | | |
| | | | Assessment | hypotheses | | |
| | | | | related to | | |
| | | | | the | | |
| | | | | problems | | |
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| | | | | Students | | |
| | | | | begin to | | |
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| | | | | projects that | | |
| | | | | will be | | |
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| | | | | that have been | | |
| | | | | prepared 3. | | |
| | | | | Students | | |
| | | | | prepare a | | |
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| | | | | completing | | |
| | | | | the project | | |
| | | | | to be carried | | |
| | | | | out 4. | | |
| | | | | Students | | |
| | | | | carry out the | | |
| | | | | | | |
| | | | | stages of the project | | |
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| | | | | they have | | |
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| | | | | observes | | |
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| | | | | of the | | |
| | | | | project the | | |
| |] | | | students are | Ì | 1 |
| | | | | working on) | Ì | 1 |
| |] | | | 5. Students | Ì | 1 |
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| | | | | related to | | |
| |] | | | projects that | Ì | 1 |
| |] | | | have been | Ì | 1 |
| | | | | carried out | | |
| |] | | | and within | Ì | 1 |
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| | | | | 6. Students | | |
| |] | | | reveal the | Ì | 1 |
| | | | | experiences | | |
| |] | | | they have | Ì | 1 |
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| Suderits are able to conceive and the co | | | | | | | |
|--|----|---------------------|--|-----------------------|----------------------------|---|----|
| Uninderland place of the programming and progr | 14 | Students are able | 1.explain the basic concepts of networking | Criteria: | | | 0% |
| besided in common and applies making programming and applies in making programming and applies and a | | to understand the | | 1.group value (30%) | observe the | | |
| programming and applies in making program the Appliet method in programming of 5.Explain the Appliet method in programming of 5.Explain the Appliet method in programming of 4.Explain the Appliet method in programming of 5.Explain the Appliet method in programm | | concept of network- | | 2.individual value | | | |
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| Areport value (15%) Forms of Assessment Porticipatory Activities Project Result Assessment i Product Assessment | | applets in making | | 3.project value (30%) | | | |
| Forms of Assessment Projectatory Assessment Projectatory Assessment Projectatory Assessment Product Assessment, Practical Assessment, Practical Assessment, Practical Assessment, Practical Assessment Assessment before the problems for the proble | | programs | | 4.report value (15%) | | | |
| Participatory Activities, Project Results Assessment, Product Assessment, Assessment Assessment, Product Assessment, Product Assessment, Product Assessment, Assessment Assessment, Product Assessment, Assessment Assessment, Product Assessment, Assessment Assessment, Product Assessment Ass | 1 | | | | | | |
| Participatory Activities, Project Reconstituted Assessment, Practical Assessment, Practical Assessment, Practical Assessment before Assessment before problems problems problems proper | 1 | | | Forms of Assessment : | | | |
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| | | | | | 3x50 | Ì | |

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|----|----------------------------------|--|--------------------------------|-----------------------------|------|----|
| 15 | Students are able | 1.Explain the types of streams in general | Criteria: | 1. Students | | 0% |
| | to understand I/OStream in | 2.Explaining Reader classes | 1.group value (30%) | observe the | | |
| | managing files | 3.Explaining Writer classes | 2.individual value | problems given by the | | |
| | | 4.Explain the InputStream classes 5.Explain the OutputStream classes | (25%) 3.project value (30%) | lecturer, | | |
| | | 6.explain the Outputstream classes | 4.report value (15%) | referring to | | |
| | | O.explain serialization and deserialization | 4.1eport value (1570) | the topics | | |
| | | | | that have | | |
| | | | | been agreed upon during | | |
| | | | | the lesson. | | |
| | | | | As a group, | | |
| | | | | students | | |
| | | | | discuss to | | |
| | | | | formulate hypotheses | | |
| | | | | related to | | |
| | | | | the | | |
| | | | | problems | | |
| | | | | faced.2. | | |
| | | | | Students begin to | | |
| | | | | prepare | | |
| | | | | projects that | | |
| | | | | will be | | |
| | | | 1 | carried out | | |
| | | | 1 | to answer the | | |
| | | | 1 | tne hypotheses | | |
| | | | | that have | | |
| | | | | been | | |
| | | | | prepared 3. | | |
| | | | | Students | | |
| | | | 1 | prepare a schedule for | | |
| | | | | completing | | |
| | | | | the project | | |
| | | | | to be carried | | |
| | | | | out 4. | | |
| | | | | Students carry out the | | |
| | | | | stages of | | |
| | | | | the project | | |
| | | | | according to | | |
| | | | | the | | |
| | | | | schedule they have | | |
| | | | | prepared | | |
| | | | | (the lecturer | | |
| | | | | observes | | |
| | | | | each stage | | |
| | | | | of the | | |
| | | | | project the students are | | |
| | | | | working on) | | |
| | | | | 5. Students | | |
| | | | | make | | |
| | | | | reports | | |
| | | | | related to projects that | | |
| | | | 1 | have been | | |
| | | | 1 | carried out | | |
| | | | 1 | and within | | |
| | | | | the specified | | |
| | | | 1 | time period 6. Students | | |
| | | | 1 | reveal the | | |
| | | | | experiences | | |
| | | | 1 | they have | | |
| | | | | had by | | |
| | | | 1 | showing the | | |
| | | | | outcomes of the projects | | |
| | | | 1 | they have | | |
| | | | | completed. | | |
| | | | <u> </u> | 3x50 | | |
| 16 | Students are able | 1.Visual Design (15%) | Criteria: | Final Project | | 0% |
| | to understand | 2.Algorithms involved are at least 2 (Sorting and | 1.Group Value (25 %) | Presentation | | • |
| | generic concepts (classes and | Searching) (25%) | 2.Individual Value | Courses for | | |
| | (classes and methods) in | 3.Program complexity (20 %) | (25%) | each group | | |
| | programming | 4.Functionality and Originality (15 %) | 3.Project Value (40% | 3x50 | | |
| | | 5.Packaging (10 %) | 4.Report Value (10% | | | |
| | | 6.Databases (15 %) | Forms of Assessment : | | | |
| | | | Participatory Activities, | | | |
| | | | Project Results | | | |
| | | | Assessment / Product | | | |
| | | | Assessment | | | |
| | | | | | | |

Evaluation Percentage Recap: Project Based Learning

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

Notes

- 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.
- 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. 6.
- Forms of assessment: test and non-test.
- 7. 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.
 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.