OUTLINES OF LEARNING PROGRAM
LEARNING PLAN UNITS
COURSE CONTRACT

OBJECT ORIENTED ANALYSIS AND DESIGN (PAC137)

STUDY PROGRAM OF COMPUTER SCIENCE
DEPARTMENT OF MATHEMATICS - FACULTY OF MIPA
DIPONEGORO UNIVERSITY

OUTLINES OF LEARNING PROGRAM (GBPP)

Course Subject : Object Oriented Analysis and Design (OOAD)
Course ID : PAC137
Credits : 3

A. Course Description

OOAD is a course based on software development using object-oriented methodology, composing software development phase documentation, and using Unified Modeling Language (UML), emphasizing on component based generation. Software developed is a real world case based on survey and field study.

B. General Instructional Objectives

Accomplishing this course, students should have knowledge of software development and documentation in every phases in software development.

C. Learning Plan Units

No.	Specific Instructional Objectives	Topics	Subtopics	Time Estimation
1.	Asked about OOSDLC, student could answer correctly about 90%	Object Oriented System Development Life Cycle (OOSDLC)	1. OOA 2. OOD 3. OOAD 4. OMT 5. OOSE	3 x 50 minutes
2.	Asked about differences of conventional methodology and object oriented, students could explain the essence of each methodology correctly about 90%	Conventional methodology and object oriented software development	1. Data Modeling 2. Function Modeling 3. State Modeling 4. Encapsulation 5. Inheritance	3 x 50 minutes
3.	Asked about UML, students could explain usage of UML notations correctly about 90%	Unified Modeling Language (UML)	1. Activity Diagram 2. Use Cases Diagram 3. Sequence Diagram 4. Collaboration Diagram 5. State Diagram 6. Class Diagram 7. Deployment Diagram	4 x 3 x 50 minutes
4.	Asked about analysis, students could compose analysis documentation using UML notation correctly about 90%	Object Oriented Analysis (Use Cases Identification)	1. Identifying Use Case 2. Identifying Actor 3. Composing Use Case Diagram	3 x 50 minutes
5.	Learning process Evaluation	Mid Semester Test (UTS)		2 x 50 minutes

No.	Specific Instructional Objectives	Topics	Subtopics	Time Estimation
6.	Asked about business process of real world problem, students could identify and arrange objects correctly about 90%	Object Analysis (Classification)	1. Identifying Object 2. Object Choosing and Selection 3. Finalizing Object	2 x 3 x 50 minutes
7.	Asked about business process of real world problem, student could identify attributes, methods, relation using UML notation correctly about 90%	Identifying relation, attributes, and methods of object	1. Identifying Relation 2. Identifying Methods 3. Identifying Attributes	3 x 50 minutes
8.	Asked about business process of real world problem, student could identify design process correctly about 90%	Object Oriented Design Process	1. Dinamics of Object 2. Sequence Diagram 3. Collaboration Diagram	2 x 3 x 50 minutes
9.	Given a group of classes, students could compose class diagram using UML notation correctly about 90%	Designing Classes	1. Identifying Classes 2. Identifying Relation Among Classes 3. Composing Classes Diagram	3 x 50 minutes
10.	Given class diagram, students could justify differences of persistent and transient classes correctly about 90%	Access Layer : Object Storage, and Interoperability	1. Identifying Class interfaces and control 2. Mapping Persitent Classes into Relasional Table	3 x 50 minutes
11.	Given sequence diagram, students could compose interface prototype interfaces correctly 90%	View Layer : Designing Interface Objects	1. Composing Interfaces Prototype 2. Composing Deployment Diagram	3 x 50 minutes
			Total	1.750 minutes

LEARNING PLAN UNITS (SAP)

Couse Subject : Object Oriented Analysis and Design (OOAD)
Couse ID : PAC137
Credits : 3
Time Estimation : 3 x 50 minutes
Arrangement : I

A. Instuctional Object :
1. General : Accomplishing this course, students should have knowledge of software development and documentation in every phases in software development.

2. Specific : Asked about OOSDLC, student could answer correctly about 90%.

B. Topic : Object Oriented System Development Life Cycle (OOSDLC)

C. Subtopic :
1. OOA
2. OOD
3. OOAD
4. OMT
5. OOSE

D. Learning Activities and Learning Tools and Media

Phases	Lecturer Activities	Students Activities	Learning Tools and Media
1	2	3	4
Initiation	1. To explain scope of arrangement I. 2. To explain purposes of OOSDLC. 3. To explain competencies in TIU and TIK arrangement I.	• To pay attention. • To pay attention. • To pay attention.	• LCDP • LCDP • LCDP
Presentation	4. OAD: a. To explain every phases of OOA methodology. 5. OOD: a. To explain every phases of OOD methodology 6. OOAD: a. To explain every phases of OOAD methodology.	• To pay attention, and take a notice. • To pay attention, and take a notice. • To pay attention, and take a notice..	• LCDP, whiteboard. • LCDP, whiteboard. • LCDP, whiteboard. • LCDP, whiteboard. • LCDP, whiteboard

Phases	Lecturer Activities	Students Activities	Learning Tools and Media
1	2	3	4
	7. OMT a. To explain every phases of OMT methodology. 8. OOSE a. To explain every phases of OOSE methodology.	• To pay attention, and take a notice. • To pay attention, and take a notice.	
Termination	9. Close the arrangement: a. To raise questions to students and conduct discussion in order to get better understanding about material learned. b. To give emphasizing to students. c. To review materials have not understood yet. d. To summarize and correlate current to next material.	• To perform, raise opinion	• LCDP, whiteboard.

E. Evaluation

1. To assign students to write down phases sequence and differences among methodologies, to evaluate student understanding
2. Evaluation held next week after students store the written assignment.

F. References

1. Booch G., J. Rumbaugh, & Jacobson, The Unified Modeling Language, User Guide, Rational Software Corporation, Addison-Wesley, Massachusetts, USA, 1999.
2. Coad, Peter, Edward, Yourdon, Object Oriented Analysis, Prentice Hall, 1991.
3. Coad, Peter, Edward, Yourdon, Object Oriented Design, Prentice Hall, 1991.
4. Rumbaugh, James, Et., al., Object Oriented Modeling and Design, Prentice Hall, 1991.

LEARNING PLAN UNITS (SAP)

Couse Subject : Object Oriented Analysis and Design (OOAD)
Couse ID : PAC137
Credits : 3
Time Estimation : 3 x 50 minutes
Arrangement : II

A. Instuctional Object :
1. General : Accomplishing this course, students should have knowledge of software development and documentation in every phases in software development.

2. Specific : Asked about differences of conventional methodology and object oriented, students could explain the essence of each methodology correctly about 90%.

B. Topic : Conventional methodology and object oriented software development

C. Subtopic :
1. Data Modeling
2. Function Modeling
3. State Modeling
4. Encapsulation
5. Inheritance

D. Learning Activities and Learning Tools and Media

Phases	Lecturer Activities	Students Activities	Learning Tools and Media
1	2	3	4
Initiation	1. To explain scope of arrangement II.	• To pay attention.	• LCDP
	2. To explain purposes of Conventional methodology and object oriented software development.	• To pay attention.	• LCDP
	3. To explain competencies in TIU and TIK arrangement II.	• To pay attention.	• LCDP
Presentation	4. Data Modeling: a. To explain conventional data modeling using ERD.	• To pay attention, and take a notice.	• LCDP, whiteboard.
	5. Function Modeling: a. To explain conventional function modeling using DCD and	• To pay attention, and take a notice.	• LCDP, whiteboard.

Phases	Lecturer Activities	Students Activities	Learning Tools and Media
1	2	3	4
	DFD. 6. Encapsulation and inheritance: a. To explain data and function encapsulation into class b. To explain client server classes relation.	• To pay attention, and take a notice. • To pay attention, and take a notice.	• LCDP, whiteboard. • LCDP, whiteboard.
Termination	7. Close the arrangement: a. To raise questions to students and conduct discussion in order to get better understanding about material learned. b. To give emphasizing to students. c. To review materials have not understood yet. d. To summarize and correlate current to next material.	• To perform, raise opinion	• LCDP, whiteboard.

E. Evaluation

1. To assign students to identify differences of documenting convensional and object oriented software development to discussed in class.
2. Evaluation held next week after students store the written assignment.

F. References

1. Bahrami, Ali, Object Oriented System Development, McGraw-Hill, 2000.
2. Lunn, Kenn, Information Modeling and Development, 2001.
3. Booch G., J. Rumbaugh, & Jacobson, The Unified Modeling Language, User Guide, Rational Software Corporation, Addison-Wesley, Massachusetts, USA, 1999.
4. Coad, Peter, Edward, Yourdon, Object Oriented Analysis, Prentice Hall, 1991.
5. Coad, Peter, Edward, Yourdon, Object Oriented Design, Prentice Hall, 1991.
6. Rumbaugh, James, Et., al., Object Oriented Modeling and Design, Prentice Hall, 1991.

LEARNING PLAN UNITS (SAP)

Couse Subject	:	Object Oriented Analysis and Design (OOAD)
Couse ID	:	PAC137
Credits	:	3
Time Estimation	:	4 x 3 x 50 minutes
Arrangement	:	III + IV + V + VI

A. Instuctional Object :

1. General : Accomplishing this course, students have knowledge of phases/ways process area to be used in software development from several models and characteristics of each model.

2. Specific : Asked about UML, students could explain UML modeling notations correctly about 90%

B. Topic : Unified Modeling Language (UML)

C. Subtopic :

1. Activity Diagram
2. Use Cases Diagram
3. Sequence Diagram
4. Collaboration Diagram
5. State Diagram
6. Class Diagram
7. Deployment Diagram.

D. Learning Activities and Learning Tools and Media

Phases	Lecturer Activities	Students Activities	Learning Tools and Media
1	2	3	4
Initiation	1. To explain scope of arrangement II. 2. To explain purposes of Conventional methodology and object oriented software development. 3. To explain competencies in TIU and TIK arrangement II.	• To pay attention. • To pay attention. • To pay attention.	• LCDP • LCDP • LCDP
Presentation	4. UML Diagram: a. To explain Activity Diagram. b. To explain Use Cases Diagram.	• To pay attention, and take a notice.. • To pay attention,	• LCD, whiteboard. • LCD, whiteboard.

Phases	Lecturer Activities	Students Activities	Learning Tools and Media
1	2	3	4
	c. To explain Sequence Diagram. d. To explain Collaboration Diagram. e. To explain State Diagram. f. To explain Class Diagram. g. To explain Deployment Diagram	and take a notice. • To pay attention, and take a notice. • To pay attention, and take a notice. • To pay attention, and take a notice. • To pay attention, and take a notice. • To pay attention, and take a notice.	• LCD, whiteboard. • LCD, whiteboard. • LCD, whiteboard. • LCD, whiteboard. • LCD, whiteboard.
Termination	5. Close the arrangement: a. To raise questions to students and conduct discussion in order to get better understanding about material learned. b. To give emphasizing to students. c. To review materials have not understood yet. d. To summarize and correlate current to next material.	• To perform, raise opinion	• LCDP, whiteboard.

E. Evaluation

1. To assign students to make a paper about diagrams on UML, and implementation using certain methodology.
2. Evaluation held next week after students store the written assignment.

F. References

1. Bahrami, Ali, Object Oriented System Development, McGraw-Hill, 2000.
2. Lunn, Kenn, Information Modeling and Development, 2001.
3. Booch G., J. Rumbaugh, & Jacobson, The Unified Modeling Language, User Guide, Rational Software Corporation, Addison-Wesley, Massachusetts, USA, 1999.
4. Coad, Peter, Edward, Yourdon, Object Oriented Analysis, Prentice Hall, 1991.
5. Coad, Peter, Edward, Yourdon, Object Oriented Design, Prentice Hall, 1991.
6. Rumbaugh, James, Et., al., Object Oriented Modeling and Design, Prentice Hall, 1991.

LEARNING PLAN UNITS (SAP)

Couse Subject : Object Oriented Analysis and Design (OOAD)
Couse ID : PAC137
Credits : 3
Time Estimation : 3 x 50 minutes
Arrangement : VII

A. Instuctional Object :
1. General : Accomplishing this course, students have knowledge of analysis document composing area using object oriented methodology.

2. Specific : Asked about analysis, students could compose analysis documentation using UML notation correctly about 90%.

B. Topic : Object Oriented Analysis (Identifying Use Cases)

C. Subtopic :
1. Identifying Use Case
2. Identifying Actor
3. Composing Use Case Diagram.

D. Learning Activities and Learning Tools and Media

Phases	Lecturer Activities	Students Activities	Learning Tools and Media
1	2	3	4
Initialization	1. To explain scope of material. 2. To explain purposes of understanding SRS. 3. To explain competencies in TIU and TIK.	• To pay attention. • To pay attention. • To pay attention.	• LCD • LCD • LCD
Presentation	4. Use Case Diagram: a. To explain Identifying use case. b. To explain Identifying actor. c. To explain pembuatan uses case diagram.	• To pay attention, take notice. • To pay attention, take notice. • To pay attention, take notice.	• LCD, whiteboard. • LCD, whiteboard. • LCD, whiteboard.
Termination	6. Close the arrangement:	• To perform, raise	• LCD, whiteboard.

Phases	Lecturer Activities	Students Activities	Learning Tools and Media
1	2	3	4
	e. To raise questions to students and conduct discussion in order to get better understanding about material learned. f. To give emphasizing to students. g. To review materials have not understood yet. a. To summarize and correlate current to next material.	opinion	

E. Evaluation

1. To assign students to compose use case diagram based on real world business problem.
2. Evaluation held next week after students store the written assignment.

F. References

1. Bahrami, Ali, Object Oriented System Development, McGraw-Hill, 2000.
2. Lunn, Kenn, Information Modeling and Development, 2001.
3. Booch G., J. Rumbaugh, & Jacobson, The Unified Modeling Language, User Guide, Rational Software Corporation, Addison-Wesley, Massachusetts, USA, 1999.
4. Coad, Peter, Edward, Yourdon, Object Oriented Analysis, Prentice Hall, 1991.
5. Coad, Peter, Edward, Yourdon, Object Oriented Design, Prentice Hall, 1991.
1. Rumbaugh, James, Et., al., Object Oriented Modeling and Design, Prentice Hall, 1991.

SATUAN ACARA PENGAJARAN (SAP)

Course Subject	:	Object Oriented Analysis and Design (OOAD)
Course ID	:	PAC137
Credits	:	3
Arrangement	:	2 x 3 x 50 minutes
Pertemuan ke	:	IX + X

A. Instructional Objectives :

1. General : Accomplishing this course, students have knowledge of Identifying and classifying object.

2. Specific : Asked about business process of real world problem, students could identify and arrange objects correctly about 90%.

B. Topic : Object Analysis (Classification)

C. Subtopic :
1. Identifying Object
2. Choosing and Selecting Object
3. Finalyzing Object.

D. Learning Activities and Learning Tools Media

Phases	Lecturer Activities	Students Activities	Learning Tools and Media
1	2	3	4
Initialization	1. To explain scope of material. 2. To explain Object Analysis (Classification). 3. To explain competencies in current TIU and TIK.	• To pay attention. • To pay attention. • To pay attention.	• LCD • LCD • LCD
Presentation	4. Analisis Object: a. To explain Identifying Object. b. To explain classifying Object. c. To explain Choosing and Selecting Object	• To pay attention, take notice. • To pay attention, take notice. • To pay attention, take notice.	• LCD, whiteboard. • LCD, whiteboard. • LCD, whiteboard.
Termination	5. Close the arrangement: a. To raise questions to students and conduct discussion in	• To perform, raise opinion	• LCD, whiteboard.

Phases	Lecturer Activities	Students Activities	Learning Tools and Media
1	2	3	4
	order to get better understanding about material learned. b. To give emphasizing to students. c. To review materials have not understood yet. d. To summarize and correlate current to next material.		

E. Evaluation

1. To assign students Identifying and classifying Object based on *real world* problem.
2. Evaluation held next week after students store the written assignment.

F. References

1. Bahrami, Ali, Object Oriented System Development, McGraw-Hill, 2000.
2. Lunn, Kenn, Information Modeling and Development, 2001.
3. Booch G., J. Rumbaugh, & Jacobson, The Unified Modeling Language, User Guide, Rational Software Corporation, Addison-Wesley, Massachusetts, USA, 1999.
4. Coad, Peter, Edward, Yourdon, Object Oriented Analysis, Prentice Hall, 1991.
5. Coad, Peter, Edward, Yourdon, Object Oriented Design, Prentice Hall, 1991.
1. Rumbaugh, James, Et., al., Object Oriented Modeling and Design, Prentice Hall, 1991.

SATUAN ACARA PENGAJARAN (SAP)

Course Subject	:	Object Oriented Analysis and Design (OOAD)
Course ID	:	PAC137
Credits	:	3
Arrangement	:	3 x 50 minutes
Pertemuan ke	:	XI

A. Instructional Objectives :

1. General : Accomplishing this course, students have knowledge of document composing as result of software development using conventional approach.

2. Specific : Asked about business process of real world problem, student could identify attributes, methods, relation using UML notation correctly about 90%.

B. Topic : Identifying relation, attributes, and methods of object

C. Subtopic :
1. Identifying Relation.
2. Identifying Methods.
3. Identifying Attributes.

D. Learning Activities and Learning Tools Media

Phases	Lecturer Activities	Students Activities	Learning Tools and Media
1	2	3	4
Initialization	1. To explain scope of material. 2. To explain purposes of Phases of design. 3. To explain competencies in current TIU and TIK.	• To pay attention. • To pay attention. • To pay attention.	• LCD • LCD • LCD
Presentation	4. Relation, attributes, and methods: a. To explain Identifying relation. b. To explain Identifying attributes. c. To explain Identifying methods	• To pay attention, take notice. • To pay attention, take notice. • Memperhatikan, dan mencatat	• LCD, whiteboard. • LCD, whiteboard • LCD, whiteboard
Termination	5. Close the arrangement:	• To perform, raise	• LCD, whiteboard.

Phases	Lecturer Activities	Students Activities	Learning Tools and Media
1	2	3	4
	a. To raise questions to students and conduct discussion in order to get better understanding about material learned. b. To give emphasizing to students. c. To review materials have not understood yet. d. To summarize and correlate current to next material.	opinion	

E. Evaluation

1. To assign students Identifying and defining properties of class based on *real world* problem.
2. Evaluation held next week after students store the written assignment.

F. References

1. Bahrami, Ali, Object Oriented System Development, McGraw-Hill, 2000.
2. Lunn, Kenn, Information Modeling and Development, 2001.
3. Booch G., J. Rumbaugh, & Jacobson, The Unified Modeling Language, User Guide, Rational Software Corporation, Addison-Wesley, Massachusetts, USA, 1999.
4. Coad, Peter, Edward, Yourdon, Object Oriented Analysis, Prentice Hall, 1991.
5. Coad, Peter, Edward, Yourdon, Object Oriented Design, Prentice Hall, 1991.
6. Rumbaugh, James, Et., al., Object Oriented Modeling and Design, Prentice Hall, 1991.

SATUAN ACARA PENGAJARAN (SAP)

Course Subject	:	Object Oriented Analysis and Design (OOAD)
Course ID	:	PAC137
Credits	:	3
Arrangement	:	2 x 3 x 50 minutes
Pertemuan ke	:	XII + XIII

A. Instructional Objectives :

1. General : Accomplishing this course, students have knowledge of design process area.

2. Specific : Asked about business process of real world problem, student could identify design process correctly about 90%.

B. Topic : Object Oriented Design Process

C. Subtopic :
1. Dinamics of Object
2. Sequence Diagram
3. Collaboration Diagram.

D. Learning Activities and Learning Tools Media

Phases	Lecturer Activities	Students Activities	Learning Tools and Media
1	2	3	4
Initialization	1. To explain scope of material. 2. To explain design process. 3. To explain competencies in current TIU and TIK.	• To pay attention. • To pay attention. • To pay attention.	• LCD • LCD • LCD
Presentation	4. Object Oriented Design Process: a. To explain Dinamics of Object. b. To explain sequences diagram in certain case. c. To explain collaboration diagram in certain case.	• To pay attention, take notice. • To pay attention, take notice. • To pay attention, take notice.	• LCD, whiteboard. • LCD, whiteboard. • LCD, whiteboard.

Phases	Lecturer Activities	Students Activities	Learning Tools and Media
1	2	3	4
Termination	5. Close the arrangement: a. To raise questions to students and conduct discussion in order to get better understanding about material learned. b. To give emphasizing to students. c. To review materials have not understood yet. d. To summarize and correlate current to next material.	• To perform, raise opinion	• LCD, whiteboard

E. Evaluation

1. To assign students to learn material of Identifying Object Oriented Design Process.
2. Evaluation held next week after students store the written assignment.

F. References

1. Bahrami, Ali, Object Oriented System Development, McGraw-Hill, 2000.
2. Lunn, Kenn, Information Modeling and Development, 2001.
3. Booch G., J. Rumbaugh, & Jacobson, The Unified Modeling Language, User Guide, Rational Software Corporation, Addison-Wesley, Massachusetts, USA, 1999.
4. Coad, Peter, Edward, Yourdon, Object Oriented Analysis, Prentice Hall, 1991.
5. Coad, Peter, Edward, Yourdon, Object Oriented Design, Prentice Hall, 1991.
6. Rumbaugh, James, Et., al., Object Oriented Modeling and Design, Prentice Hall, 1991.

SATUAN ACARA PENGAJARAN (SAP)

Course Subject	:	Object Oriented Analysis and Design (OOAD)
Course ID	:	PAC137
Credits	:	3
Arrangement	:	3 x 50 minutes
Pertemuan ke	:	XIV

A. Instructional Objectives :

1. General : Accomplishing this course, students have knowledge to compose classes and their realtionship.

2. Specific : Given a group of classes, students could compose class diagram using UML notation correctly about 90%

B. Topic : Designing Classes

C. Subtopic :
1. Identifying Classes
2. Identifying Relation of Classes
3. Composing Class Diagram.

D. Learning Activities and Learning Tools Media

Phases	Lecturer Activities	Students Activities	Learning Tools and Media
1	2	3	4
Initialization	1. To explain scope of material. 2. To explain purposes of object oriented development. 3. To explain competencies in current TIU and TIK.	• To pay attention. • To pay attention. • To pay attention.	• LCD • LCD • LCD
Presentation	4. Designing Classes: a. To explain Identifying class. b. To explain relation of classes. c. To explain class diagram in certain case.	• To pay attention, take notice. • To pay attention, take notice. • To pay attention, take notice.	• LCD, whiteboard. • LCD, whiteboard. • LCD, whiteboard.
Termination	5. Close the arrangement:	• To perform, raise	• LCD, whiteboard

Phases	Lecturer Activities	Students Activities	Learning Tools and Media
1	2	3	4
	a. To raise questions to students and conduct discussion in order to get better understanding about material learned. b. To give emphasizing to students. c. To review materials have not understood yet. d. To summarize and correlate current to next material.	opinion	

E. Evaluation

1. To assign students learning material of class design process using object oriented method.
2. Evaluation held next week after students store the written assignment.

F. References

1. Bahrami, ***Object Oriented System Development***, McGraw-Hill, 2000.
2. Booch, G., J., Rumbaugh, Jacobson, ***The Unified Modeling Language***, User Guide, Rational Software Corporation, Addison-Wesley, Massachusetts, USA, 1999.
3. Davis, M., Alan, ***Software Requirement Object, Functions, and States***, Fifth Edition, Prentice Hall, 1993.
4. Ken Lunn , ***Information Modeling and Development***, Prentice Hall, 2001.
5. Pressman, Roger, S., ***Software Engineering A Practitioner's Approach***, Fifth Edition, Mac Graw-Hill, 2000.
6. Samorville, Ian, ***Software Engineering***, Third Edition, Prentice Hall, 1996.

SATUAN ACARA PENGAJARAN (SAP)

Course Subject	:	Object Oriented Analysis and Design (OOAD)
Course ID	:	PAC137
Credits	:	3
Arrangement	:	3 x 50 minutes
Pertemuan ke	:	XV

A. Instructional Objectives :

3. General : Accomplishing this course, students have knowledge of mapping area from objcet model to relational model.

4. Specific : Given class diagram, students could justify differences of persistent and transient classes correctly about 90%.

B. Topic : Access Layer : Object Storage, and Interoperability

C. Subtopic :
1. Identifying Classes interfaces and control
2. mapping Persitent Classes into Relasional Table.

D. Learning Activities and Learning Tools Media

Phases	Lecturer Activities	Students Activities	Learning Tools and Media
1	2	3	4
Initialization	1. To explain scope of material. 2. To explain purposes of object oriented development. 3. To explain competencies in current TIU and TIK.	• To pay attention. • To pay attention. • To pay attention.	• LCD • LCD • LCD
Presentation	4. Access Layer : Object Storage, and Interoperability: a. To explain Identifying Classes interfaces and control. b. To explain mapping Persitent Classes into Relasional Table.	• To pay attention, take notice. • To pay attention, take notice.	• LCD, whiteboard. • LCD, whiteboard.
Termination	5. Close the arrangement: a. To raise questions to students and conduct discussion in order to get better understanding about material learned. b. To give emphasizing to students.	• To perform, raise opinion	• LCD, whiteboard

Phases	Lecturer Activities	Students Activities	Learning Tools and Media
1	2	3	4
	c. To review materials have not understood yet. d. To summarize and correlate current to next material.		

E. Evaluation

1. To assign students exploring material of Access Layer in object oriented methodology.
2. Evaluation held next week after students store the written assignment.

F. References

1. Bahrami, ***Object Oriented System Development***, McGraw-Hill, 2000.
2. Booch, G., J., Rumbaugh, Jacobson, ***The Unified Modeling Language***, User Guide, Rational Software Corporation, Addison-Wesley, Massachusetts, USA, 1999.
3. Davis, M., Alan, ***Software Requirement Object, Functions, and States***, Fifth Edition, Prentice Hall, 1993.
4. Ken Lunn , ***Information Modeling and Development***, Prentice Hall, 2001.
5. Pressman, Roger, S., ***Software Engineering A Practitioner's Approach***, Fifth Edition, Mac Graw-Hill, 2000.
6. Samorville, Ian, ***Software Engineering***, Third Edition, Prentice Hall, 1996.

SATUAN ACARA PENGAJARAN (SAP)

Course Subject : Object Oriented Analysis and Design (OOAD)
Course ID : PAC137
Credits : 3
Arrangement : 3 x 50 minutes
Pertemuan ke : XVI

A. Instructional Objectives :
5. General : Accomplishing this course, students have knowledge of interface prototype composing area.

6. Specific : Given sequence diagram, students could compose interface prototype interfaces correctly 90%.

B. Topic : View Layer : Designing Interface Objects

C. Subtopic :
1. Composing Interfaces Prototype
2. Composing Deployment Diagram.

D. Learning Activities and Learning Tools Media

Phases	Lecturer Activities	Students Activities	Learning Tools and Media
1	2	3	4
Initialization	1. To explain scope of material. 2. To explain designing interface objects. 3. To explain competencies in current TIU and TIK.	• To pay attention. • To pay attention. • To pay attention.	• LCD • LCD • LCD
Presentation	4. View Layer : Designing Interface Objects: a. To explain Penyusunan Interfaces Prototype.	• To pay attention, take notice.	• LCD, whiteboard.
	b. To explain Penyusunan Deployment Diagram disertai dengan kasus.	• To pay attention, take notice.	• LCD, whiteboard.
Termination	5. Close the arrangement: a. To raise questions to students and conduct discussion in order to get better understanding about material learned. b. To give emphasizing to students. c. To review materials have not understood yet. d. To summarize and correlate current to next material.	• To perform, raise opinion	• LCD, whiteboard

E. Evaluation

1. To assign students exploring material of View Layer in object oriented methodology.
2. Evaluation held next week after students store the written assignment.

F. References

1. Bahrami, ***Object Oriented System Development***, McGraw-Hill, 2000.
2. Booch, G., J., Rumbaugh, Jacobson, ***The Unified Modeling Language***, User Guide, Rational Software Corporation, Addison-Wesley, Massachusetts, USA, 1999.
3. Davis, M., Alan, ***Software Requirement Object, Functions, and States***, Fifth Edition, Prentice Hall, 1993.
4. Ken Lunn , ***Information Modeling and Development***, Prentice Hall, 2001.
5. Pressman, Roger, S., ***Software Engineering A Practitioner's Approach***, Fifth Edition, Mac Graw-Hill, 2000.
6. Samorville, Ian, ***Software Engineering***, Third Edition, Prentice Hall, 1996.