

National Computer Education Accreditation Council NCEAC

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INSTITUTION

PAF-KIET

**PROGRAM (S) TO BE
EVALUATED**

BACHELORS OF SCIENCE IN COMPUTER SCIENCE
BS (CS) FOUR YEAR DEGREE

A. Course Description

Course Code	SE321			
Course Title	Object Oriented Analysis & Design			
Credit Hours	3 + 0			
Prerequisites by Course(s) and Topics	Object Oriented Programming			
Assessment Instruments with Weights (homework, quizzes, midterms, final, programming assignments, lab work, etc.) Note: This is tentative plan.	Quizzes 10% Midterm 30% Assignment 5% Final Exam 40% Project 15%			
Course Coordinator	Mohammad Ayub Latif			
URL (if any)	NIL			
Current Catalog Description	Object-Oriented Analysis: Developing the Static Model Class Diagrams, UML Relationships: Association, Aggregation, Composition, Inheritance. UML Packages, Object Diagrams. Object-Oriented Analysis: Developing the Dynamic Model, Use Case Diagrams, Sequence Diagrams, Collaboration Diagrams, Statechart Diagrams, and Advanced States: sub states, Super states, Activity Diagrams.			
Textbook (or Laboratory Manual for Laboratory Courses)	Visual Modeling with Rational Rose by Terry Quatranie			
Reference Material	Unified Software Development by Booch, Rumbaugh, Jacobson			
Course Goals	After successful completion of this course students should be able to do analysis of software system. Do modeling using UML and create diagram like use cases, activity, class, sequence, collaboration etc.			
Topics Covered in the Course, with Number of Lectures on Each Topic (assume 15-week instruction and one-hour lectures)	Extra sheet is attached			
Laboratory Projects/Experiments Done in the Course	This course is without lab			
Programming Assignments Done in the Course	Assignments will be as case studies requiring students to do analysis and designing activities.			
Class Time Spent on (in credit hours)	Theory	Problem Analysis	Solution Design	Social and Ethical Issues
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Oral and Written Communications	Every student is required to submit at least 1 written report of typically 5-6 pages and to make 1 oral presentations of typically 10-15 minute's duration.
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Instructor Name _____ **Instructor Signature** _____
Date _____

Session No.	Book Ch.	Topics to be Covered	Date	Signature
1		Introduction to Analysis and Designing		
		SAD and OOAD		
		Different software development models		
2		What is USD		
		The different phases of USD		
		What are the workflows		
3		What are use cases and why we need them		
		Use case stereotypes		
		Case studies about use case diagram		
4		Activity diagram and its notations		
		Case studies of activities diagrams		
		Concepts of classes and objects in UML		
5		What is meant by use case realization in UML		
		Different stereotypes of classes		
		Why stereotypes are required at class level		
6		Entity or long lived classes		
		Boundary classes and GUIs		
		Control classes and use cases		
7		How objects communicates		
		Different relationships in classes		
		Association		
8		Aggregation and its examples		
		Case study to discuss relationships of classes		
		Interaction diagrams in UML		

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9		The sequence diagram		
		The collaboration diagram What is the difference is sequence and collaboration		
10		Case studies for sequence and collaboration		
		Changes to the class diagram after sequence Concept of reflexive relationship		
11		Concept of association class		
		Homogenization of the system Why is homogenization required		
12		Changing the class model through homogenization		
		Case study for homogenization What are components and why we need them		
13		The runtime components		
		The executable components Class assignment and interfaces of components		
14		Dependency, multiplicity implementation and composition		
		Architectural views of the system Logical and process views		
15		Implementation, deployment and use case views		
		Revision Revision		