جامعــة الزيتونـــة الأردنيـة
Al-Zaytoonah University of Jordan
كلية العلوم وتكنولوجيا المعلومات
Faculty of Science and Information Technology

" عراقة وجودة"
"Tradition and Quality"

Detailed Course Description - Course Plan Development and Updating Procedures/ Computer Information Systems Department	QF01/0408-3.0E

Faculty	Science and Information Technology	Department	Computer Information Systems
Course Number	**0113343**	**Course Title**	**Object Oriented Analysis and Design**
Number of Credit Hours	3	Pre-Requisite/Co-Requisite	System Analysis and Design (**0113342**)

Brief Course Description

Object oriented analysis and design (OOAD) is a course that presents the up-to-date understanding of designing and construction of software systems using techniques that view a system as a set of objects that work together to realize the system's functionality. OOAD in modern software engineering is best conducted in an iterative and incremental way. Iteration by iteration, the outputs of OOAD activities, analysis models for OOA and design models for OOD respectively, will be refined and evolve continuously driven by key factors like risks and business value.

	Course Goals and Learning Outcomes
Goal 1	**Analyzing and Designing Problems Using Object-Oriented Analysis and Design Techniques.**
Learning Outcomes	**1.1** To teach the students a solid foundation on object-oriented principles. **1.2** To teach the student the essential and fundamental aspects of object oriented analysis and design, in terms of "how to use" it for the purpose of specifying and developing software. **1.3** Explore and analyze different analysis and design models, such OO Models, Structured Analysis and Design Models, etc. **1.4** Understanding the insight and knowledge into analyzing and designing software using different object-oriented modeling techniques.
Goal 2	**Analyzing and Designing Problems Using UML.**
Learning Outcomes	**2.1** To know the benefits and the risks of using UML. **2.2** Understanding the fundamental principles through advanced concepts of analysis and design using UML. **2.3** Providing clear instructions and information on the "How-to" dimension for applying the UML models and to the ways to document their products.
Goal 3	**Understanding from Experience with UML.**
Learning Outcomes	**3.1** Discussing and understanding analysis and design heuristics that are involved in the course. **3.2** Students will learn and understand how to map one style of diagrammatic notations into another. **3.3** Understanding by studying and developing examples of existing UML models. **4.4** Focusing on lessons learned of using UML and its applications.

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Goal 4	**Practical using Case Tools.**
Learning Outcomes	**4.1** Using latest case tools in building enterprise architecture such as (Rational Rose, Sparax, or others).
Textbook	1. "**Systems Analysis and Design in a Changing World**" John W. Satzinger, Robert B. Jackson, and Stephen D. Burd, 7th Edition, Course Technology, 2016. 2. "**Object-Oriented Analysis and Design with the Unified Process**"John W.Satzinger, Robert B.Jackson, Stephen D.Burd, Fourth Edition, 2005. 3. "**Mastering UML with Rational Rose 2002**", Wendy Boggs, Michael Boggs, Wiley, 2002.
Supplementary References	1. "**Object Oriented Analysis and Design with UML**" Daminni Grover, I K International Publishing House, 2012. 2. "**The Object-Oriented Thought Process**" Matt Weisfeld, 4th Edition, Developer's Library, 2013.

Course Timeline				
Week	**Number of Hours**	**Course Topics**	**Pages (Textbook)**	**Notes**
01	1 1 1	**Chapter 1:** An Overview of Systems Analysis and Design ▪ Software Development and Systems Analysis and Design ▪ Systems Development Life Cycle Iterative Development	3-8	
02	1 1 1	**Chapter 1:** Introduction to UML ▪ Introduction to the Object−Oriented Paradigm ▪ What Is Visual Modeling? ▪ Object Management Technology (OMT) ▪ Unified Modeling Language (UML)	4-26	Mastering UML with Rational Rose 2002
03	1 1 1	**Chapter 2:** Object-Oriented Development and the Unified Process ▪ Overview; The System Development Life Cycle; Methodologies, Models, Tools, and Techniques; ▪ The Unified Process as a System Development	36-50	Object-Oriented Analysis and Design with the Unified Process
04	1	**Chapter 2:** Object-Oriented Development and the Unified Process		Object-Oriented

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	1 1	▪ Methodology, The Unified Discipline; ▪ Overview of Object-Oriented Concepts; Tools to Support System Development	51-77	Analysis and Design with the Unified Process
05	1 1 1	**Chapter 3:** Use Cases ▪ Use Cases and User Goals ▪ Use Cases and Event Decomposition ▪ Use Case Diagrams ▪ Case Study Using Case Tools	91-105	
06	1 1 1	**Chapter 2:** A Tour of Rose ▪ What Is Rose? ▪ Getting Around in Rose ▪ Working with Rose ▪ Creating Models	27-58	Mastering UML with Rational Rose 2002
07	1 1 1	▪ Practice Different Case Studies (Scenarios) with Rational Rose Implementation **First Exam 20%**		
08	1 1 1	**Chapter 6:** Use Case Modeling and Detailed Requirements ▪ Detailed Object-Oriented Requirements Definitions ▪ System Process-A Use case/ Scenario View ▪ Use Case Description	210-214	Object-Oriented Analysis and Design with the Unified Process
09	1 1 1	**Chapter 6:** Use Case Modeling and Detailed Requirements ▪ Activity Diagram ▪ Case Study ▪ Implementation Using Rational Rose	215-220	Object-Oriented Analysis and Design with the Unified Process
10	1 1 1	**Chapter 4:** Domain Modeling ▪ Things" in the Problem Domain ▪ The Domain Model Class Diagram ▪ Case Study	91-116	
11	1 1	**Chapter 5:** Use Cases and Domain Classes ▪ Class Diagram Types		Object-Oriented Analysis and

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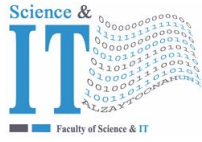|				
	1	▪ Association Types ▪ Case Study	164-184	Design with the Unified Process
12	1 1 1	▪ Practice Different Case Studies (Scenarios) with Rational Rose Implementation **Second Exam 20%**		
13	1 1 1	**Chapter 6:** Use Case Modeling and Detailed Requirements ▪ Identifying Inputs and Outputs ▪ The System Sequence Diagram	214-226	Object-Oriented Analysis and Design with the Unified Process
14	1 1 1	**Chapter 5:** Object Interaction ▪ Interaction Diagrams ▪ Sequence Diagrams	159-164	Mastering UML with Rational Rose 2002
15	1 1 1	**Chapter 6:** Use Case Modeling and Detailed Requirements ▪ Identifying Object Behavior ▪ The State Chart Diagram ▪ Integrating Object-Oriented Models	227-258	Object-Oriented Analysis and Design with the Unified Process
16	1 1 1	▪ Practice Different Case Studies (Scenarios) with Rational Rose Implementation **Final Exam 50%**		

Theoretical Course Evaluation Methods and Weight	Participation = 10% First Exam 20% Second Exam 20% Final Exam 50%	**Practical Course Evaluation Methods**	Semester Students' Work = 50% (Reports, Research, Quizzes, Etc.) Final Exam = 50%

Approved by Head of Department		**Date of Approval**	

Extra information (to be updated every semester by corresponding faculty member)

Name of Teacher		**Office Number**	

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Phone Number (extension)		Email	_____@zuj.edu.jo
Office Hours			