Course number Programming and Tee	: chnolog	COIT 403 ies	Name :	Integrative		
Credits	:	4	Contact hours:	42 Hrs Lecture 14 Hrs Lab		
Course acordinator?	a					
Course coordinator	S	T) T C 4 1 1				
name	:	L.Nouf Alghanmi				
Text book Other references	:	"Professional Java Programming" by Brett Spell, George Gongo, Wrox Publication, 2000, ISBN: 186100382X.				
		" <i>The Complete Book of Middleware</i> ", 1 st Edition by Judith M. Myerson, Auerbach Publications, 2002, ISBN-13: 9780849312724				
		<i>Design patterns: elements of reusable object-oriented</i> <i>software</i> " by Erich Gamma, Ralph Johnson, Richard Helm, John Vlissides, Addison-Wesley, 1994, ISBN: 0201633612				

COIT 403 Integrative Programming and Technologies

Specific course information

a.	Synopsis	:	Organizations typically use many disparate technologies that need to communicate and work with each other. A key component to the discipline of Information Technology is the integration of applications and systems. This knowledge area examines the various types of programming languages and their appropriate use. The course addresses the use of architectures, application programming interfaces and programming practices to facilitate the management, integration and security of the systems that support an organization.
b.	Prerequisites	:	COCS 203 Programming II

c. Type of course: Department

Specific goals for the course:

- 1. Upon finishing this course, the students should:
 - Recognize different types of architectures for integrating systems

- Have knowledge of data representation and exchange techniques and their appropriate use.
- Describe the role of socket programming in communicating between systems
- Understand the use of integrative coding techniques like interface, inheritance and design patterns.
- 2. This course aims to meet student outcomes (a), (c) and (l) of criterion 3.

Topics covered

- Intersystems Communications
 - Architectures for integrating systems
 - o DCOM, CORBA, RMI
 - Web Services and Middleware
 - Network programming
- Data Mapping and Exchange
 - Metadata Data representation and encoding HTML, XML, DTD, XML schemas Parsing XML documents XSL, XSLT and XPath
- Integrative Coding
 - o Design Patterns, Interfaces, Inheritance

• Network Programming

• Ports, Input Stream, Output Stream, Socket programming

	Time table for distributing theoretical course contents					
Week	Theoretical course contents	ABET Criteria	Remarks			
1	Overview of Programming Languages - History of programming languages, Programming paradigms, Effects of scale,	а				
2	Compiled vs. interpretative languages, Application vs. scripting languages	а				
3	Integrative Coding - Inheritance	С				
4	- Polymorphism	С				
5	- Interfaces,	С				
6	Network Programming	с	Exam 1			
7	Data Mapping and Exchange - Metadata Data representation and encoding HTML, XSL, XSLT and XPath	I				
8	Data Mapping and Exchange - XML, DTD, XML, schemas Parsing XML documents	I				
9-10	Data Mapping and Exchange - XSL, XSLT and XPath	I				
11	Intersystems Communications - Architectures for integrating systems - RMI	c,l	Exam 2			
12	Intersystems Communications - Virtual Machines - Web Services and Middleware	I				
13	Integrative Coding - Design Patterns, overview of integrative coding, using this kind of programming	I				
14	A comprehensive review					
	Final exam.					