

ATTACHMENT 5.

Kingdom of Saudi Arabia
The National Commission for Academic Accreditation &
Assessment

14014307-3 Software Architecture
(CS)

Course Specifications

Institution	Umm Al Qura University	Date	7 / 7 / 1437
College/Department	College of Computers and Information Systems		

A. Course Identification and General Information

1. Course title and code: 14014307-3 Software Architecture			
2. Credit hours 3			
3. Program(s) in which the course is offered. Computer Science			
4. Name of faculty member responsible for the course Curriculum Committee			
5. Level/year at which this course is offered 4th year (level 9 or 10)			
6. Pre-requisites for this course 14014110-3 Advanced Web Programming			
7. Co-requisites for this course			
8. Location if not on main campus Al-Abidiyah campus (Boys) and Al-Zaher campus (Girls), Makkah Al Mukarramah			
9. Mode of Instruction (mark all that apply)			
a. traditional classroom	<input checked="" type="checkbox"/>	What percentage?	<input type="text" value="100"/>
b. blended (traditional and online)	<input type="checkbox"/>	What percentage?	<input type="text"/>
c. e-learning	<input type="checkbox"/>	What percentage?	<input type="text"/>
d. correspondence	<input type="checkbox"/>	What percentage?	<input type="text"/>
f. other	<input type="checkbox"/>	What percentage?	<input type="text"/>
Comments:			

B Objectives

<p>1. What is the main purpose for this course? The goal of this course is to get the students to become more familiar with the different software architecture and to gain the knowhow on using these architecture</p> <ol style="list-style-type: none"> 1. Students will learn the concept of virtual software bus 2. Students will learn the concepts of CORBA and how to use it 3. Students will learn the concepts of RMI/java and will gain hand on experience on how to program RMI applications 4. Students will learn the concepts of SOA, web services and will gain hand on experience on how to program use it 5. Student will learn the concepts of OAuth, trust, security and how to implement OAuth application. 6. Web bases attacks (SQL injections, session stealing, etc...) and how to protect your application 7. Student will learn how to store login information on the client machine using temporary tokens
<p>2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)</p> <ol style="list-style-type: none"> 1. As this subject domain is wide and updated regularly, the course objectives will be reviewed regularly to reflect the new trends in advanced web programming, technologies and applications. 2. Increase the use of the latest Web-based reference material and textbooks. 3. Review and update the course materials as part of preparation to teach this course. 4. Gather students' opinions about their success in achieving course objectives by the end of the semester. This is done through number of survey questions that map one-to-one with course objectives. 5. Review and indicate which assessment instrument(s) to be used for assessing each course outcome, and what grading rubric will be used for each instrument.

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:

1. Topics to be Covered		
List of Topics	No. of Weeks	Contact hours
Virtual bus concept	1	2
CORBA concepts and implementation	2	2
RMI/Java	1	2
SOA and web services	2	2
OAuth concepts and implementation	2	2
Multi-tier web applications and web framework (such as Spring)	2	2

Web bases attacks (SQL injections, session stealing, etc...) and how to protect your application	3	2
Student will learn how to use encryption and temporary token to improve security and provide advanced services	3	2

2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory or Studio	Practical	Other:	Total
Contact Hours	30	0	30			
Credit	???	???	???			

3. Additional private study/learning hours expected for students per week.

4 hours

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Learn the concept of virtual software bus architectures such as CORBA, RMI and SOA and how to use them	Lectures, tutorial, labs, assignments	Quiz, lab evaluation, projects, assignment evaluation
1.2	Learn the concepts of OAuth, trust, security and how to implement OAuth application.	Lectures, tutorial, labs, assignments	Quiz, lab evaluation, projects, assignment evaluation
1.3	Learn Web bases attacks (SQL injections, session stealing, etc...) and how to protect your application	Lectures, tutorial, labs, assignments	Quiz, lab evaluation, projects, assignment evaluation
2.0	Cognitive Skills		

3.0	Interpersonal Skills & Responsibility		
3.1			
3.2			
4.0	Communication, Information Technology, Numerical		
4.1	Improve the ability to work in a group	Projects	Project evaluation
4.2			
5.0	Psychomotor		
5.1	Demonstrate skills in using computer machines and software tools to solve computer problems	Lab exercise, lab demonstration	Lab. exams In-lab. evaluation

5. Map course LOs with the program LOs. (Place course LO #s in the left column and program LO #s across the top.) (I = Introduction P = Proficient A = Advanced)

Course LOs #	Program Learning Outcomes (Use Program LO Code #s provided in the Program Specifications)													
	1.1	1.2	2.1	2.2	2.3	2.4	2.5	3.1	3.2	3.3	4.1	4.2	4.3	5.1
1.1			A	A	A	A	A			P		A	A	
1.2			A	A	A	A	A			P		A	A	
1.3			A	A	A	A	A			P		A	A	
4.1								A		P	A			
5.1										P				A

6. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Quiz every 2 weeks	every 2 weeks	20
2	Group Project #1	8	5
3	Practical Exam 1	9	20
4	Group Project # 2	12	5
5	Practical Exam 2	14	20
6	Final	16	30

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

Office hours between 2-4 hours per week.

E Learning Resources

1. List Required Textbooks

- Java RMI, 1st Edition, William Grosso, O'Reilly, ISBN-10: 1565924525
- SOA with Java: Realizing Service-Oriented with Java Technologies, 1st Edition, Thomas Erl, Andre Tost, Satadru Roy, Philip Thomas, Raj Balasubramanian, David Chou, Thomas Plunkett, Prentice Hall, ISBN-10: 0133859037
- Getting Started with OAuth 2.0, 1st Edition, Ryan Boyd, O'Reilly, ISBN-10: 1449311601
- Web Security Testing Cookbook: Systematic Techniques to Find Problems Fast, 1st Edition, Paco Hope, Ben Walther, O'Reilly, ISBN-10: 0596514832

2. List Essential References Materials (Journals, Reports, etc.)

Lecture slides and notes

3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)

Object-Oriented Analysis and Design: Undergraduate Topics in Computer Science, Sarnath Ramnath and Brahma Dathan, Springer, ISBN 978-1-84996-521-7

4. List Electronic Materials, Web Sites, Facebook, Twitter, etc.

5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

The main textbook: Java example codes

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) Lecture room (max 40 students) Computer lab (max 20 students) Overhead projector and internet connection
2. Computing resources (AV, data show, Smart Board, software, etc.) Integrated Development Environment (e.g., NetBeans, Eclipse, JBuilder). Java Development Kit (JDK)
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching A student-feedback form is distributed at the end of the course.
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department
3 Processes for Improvement of Teaching

4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)

5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

Name of Instructor: _____

Signature: _____ Date Report Completed: _____

Name of Course Instructor _____

Program Coordinator: _____

Signature: _____ Date Received: _____