

ATTACHMENT 5.

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

14013103-4 Advanced Programming
(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: 14013103-4 Advanced Programming			
2. Credit hours 4			
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 3 rd year / level 7			
6. Pre-requisites for this course 14011102-4 Object Oriented Programming			
7. Co-requisites for this course 14012301-3 Database I			
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? By completing this course the students should be able to:</p> <ol style="list-style-type: none"> Students will be familiar with exception handling and input validation. Students will gain knowledge about I/O file management and object persistence Students will be able to develop GUI-based Java applications. Students will learn how to use different types of collections provided in the standard library as well as the fundamental operations of the Arrays and Collections classes Students will learn about other advanced Java topics. <u>Students will learn how to map java objects to database tables</u> <u>Students will learn how to use Object Oriented concept to solve practical problems</u> Students will get the experience of working in groups to design and develop complete GUI-based Java application projects.
<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"> Increase the use of the latest Web-based reference material and textbooks. Review and update the course materials as part of preparation to teach this course. 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. 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
<u>Java and Object Oriented programming overview</u>	<u>4</u>	<u>2</u>
<u>Java Collections</u>	<u>2</u>	<u>2</u>
<u>Mapping Java Objects to Tables</u>	<u>2</u>	<u>2</u>
<u>Building GUI</u>	<u>3</u>	<u>2</u>

Recursion Techniques	4	2
Java Collections	2	2
Generic Programming	2	2
File I/O	2	2
Recursion Techniques	1	2
Building GUI	2	2
Introduction to Design patterns	1	2
Java Database Connectivity (JDBC)	2	2
Multi-threading and synchronization	21	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.

[6 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	Students will be familiar with exception handling and input validation.	Lectures, tutorial, labs, assignments	Quiz, lab evaluation, projects, assignment evaluation
1.2	Students will gain knowledge about I/O file management and object persistence	Lectures, tutorial, labs, assignments	Quiz, lab evaluation, projects, assignment evaluation
1.3	Students will be able to develop GUI-based Java applications.	Lectures, tutorial, labs, assignments	Quiz, lab evaluation, projects, assignment evaluation
1.4	Students will learn how to use different types of collections provided in the standard library as well as the fundamental operations of the Arrays and Collections classes	Lectures, tutorial, labs, assignments	Quiz, lab evaluation, projects, assignment evaluation
1.5	Students will learn about other advanced Java topics.	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
5.2	Perform a task with minimum assistance	Lab exercise	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	5.2
1.1			A	A	A	A	A			I		A	A		
1.2			A	A	A	A	A			I		A	A		
1.3			A	A	A	A	A			I		A	A		
1.4			A	A	A	A	A			I		A	A		
1.5			A	A	A	A	A			I		A	A		
4.1								P		I	P				
5.1										I				A	A
5.2										I				A	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	Assignments	-	0
2	Quiz 1	3	5
3	Quiz 2	7	5
4	Group Project/ <u>practical exam</u>	8	<u>20</u> 30
5	Midterm	9	20
6	Quiz 3	12	5
7	Quiz 4	14	5
8	Final	16	<u>40</u> 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: How to Program, 9e, Dietel and Dietel, Pearson 0273759760

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

Head First Java, 2nd Edition by Kathy Sierra and Bert Bates, 2005

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

Java API - Oracle Documentation: <http://docs.oracle.com/javase/7/docs/api/>

The Java Tutorial: <http://docs.oracle.com/javase/tutorial/>

The Java Tutorials: <http://docs.oracle.com/javase/tutorial/getStarted/index.html>

Language Basics: <http://docs.oracle.com/javase/tutorial/java/nutsandbolts/index.html>

Java for Complete Beginners: <http://www.homeandlearn.co.uk/java/java.html>

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

<p>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <p>A student-feedback form is distributed at the end of the course.</p>
<p>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</p>
<p>3 Processes for Improvement of Teaching</p>
<p>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)</p>
<p>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</p>

Name of Instructor: _____

Signature: _____ Date Report Completed: _____

Name of Course Instructor _____

Program Coordinator: _____

Signature: _____ Date Received: _____