Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Computing Department, Community College Dammam
University of Dammam

Course Specifications
(CS)

Object Oriented Programming

CS220

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Course Specifications

Institution: University of Dammam	Date of Report
College/Department: Dammam-Community College / Computer Science Department	

A. Course Identification and General Information

1.   Course title and code: Object Oriented Programming (CS220)
2.   Credit hours: 3 (2 Theoretical + 2 Practical)
3.   Program(s) in which the course is offered.   (If general elective available in many programs indicate this rather than list programs)   Information systems and Information technology tracks
4.   Name of faculty member responsible for the course
5.   Level/year at which this course is offered: 2nd Level - Year 1
6.   Pre-requisites for this course (if any): CS110
7.   Co-requisites for this course (if any):
8.   Location if not on main campus

9.   Mode of Instruction (mark all that apply)

a. Traditional classroom	√	What percentage?	%70
b. Blended (traditional and online)		What percentage?	
c. e-learning	√	What percentage?	%30
d. Correspondence		What percentage?	
f. Other		What percentage?	

Comments:

B Objectives

1. What is the main purpose for this course?
 	
By the end of this course, the student should be able to:
  1. Describe the importance and power of abstraction in the context of virtual machines and explain the benefits of intermediate languages in the compilation process.
  2. Justify the philosophy of object-oriented design and the concepts of encapsulation, inheritance and polymorphism.
  3. Explain how abstraction mechanisms support the creation of reusable software components.
  4. Acquire basics of how translate solution problem into object oriented form.
  5. Design and implement simple programs in an object-oriented programming language.
  6. Design and implement program that use exceptions and multithreads.
  7. Design a GUI using object oriented concepts

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) The purpose of this course is to provide students with fundamental knowledge of object oriented programming (OOP). It emphasizes good software engineering principles and developing programming skills. It focuses on object-oriented concepts, analysis and software development.

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1. Topics to be Covered

List of Topics	No. of Weeks	Contact Hours
1. Fundamental concepts of object oriented (classes, methods, instantiation, communication by message, encapsulation, inheritance, overriding, dynamic dispatch, polymorphism, etc.)	3	6T + 6P
2. Advanced techniques of OOP (exceptions, multithreaded programming, etc.) and some interesting packages (I/O, strings, etc.).	3	6T + 6P
3. Object oriented concepts and tools such as the Unified Modeling Language (UML)	3	6 T + 6P
4. Basics of Graphical User Interface (GUI) design using object oriented programming.	3	6 T + 6P
5. In practice the programming language used is JAVA, as an introduction to JAVA language; students should acquire some understanding of abstraction mechanisms, JAVA Virtual Machines (JVM) and the byte code notion.	3	6 T + 6P

2. Course components (total contact hours and credits per semester):						
	Lecture	**Tutorial**	**Laboratory**	**Practical**	**Other:**	**Total**
Contact Hours	3			2		30
Credit	3			1		15

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

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

	NQF Learning Domains And Course Learning Outcomes	**Course Teaching Strategies**	**Course Assessment Methods**
1.0	**Knowledge**		
1.1	Demonstrate an understanding of the core concepts and constructs used in object oriented programming;	Lectures, Class discussions, presentations	Seat Work, , Major exam
1.2	demonstrate the knowledge of data structures and algorithms used in an object oriented programming environment;		
2.0	**Cognitive Skills**		
2.1	Simulate a given object-oriented program and determine its correctness in the application of the OOP concepts;	Lectures, Class discussions, Independent Work	Assignment, Lab Activity, Major exam
2.2	Apply Object-oriented structures and constructs in solving a given problem;		
3.0	**Interpersonal Skills & Responsibility**		
3.1	Implement and develop an object-oriented program using advanced OOP concepts;	Lectures, Class discussions, presentations	Lab activity, , Major exam
3.2	Design and develop computer programs based on user requirements and system specifications		

4.0	**Communication, Information Technology, Numerical**		
4.1	Communicate effectively	Lectures, Class discussions, presentations	Lab activity, , Major exam
4.2	Work effectively as an individual and as a member of a team		
5.0	**Psychomotor**		
5.1	N/A	N/A	N/A

5. Course Learning Outcomes Mapping Matrix
Identify on the table below the Course Outcomes and Relationship to PLOs

Course Learning Outcomes	**Program Learning Outcomes**
1. Knowledge	
1.1	**1.1**
1.2	**1.2**
2. Cognitive skills	
2.1	**2.3**
2.2	**2.1 , 2.2**
3. Interpersonal Skills and responsibility	
3.1	**3.1, 3.2**
3.2	**3.3**
4. Communication IT and Numeral Skills	
4.1	**4.2, 4.3**
4.2	**4.1**
5. Psychomotor Skills	
5.1	**N/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	First quiz	3	%2.5
2	First midterm	6	%15
3	Second quiz	8	%2.5
4	Second midterm	10	%15

5	Project	12	10%
6	Lab	13	10%
7	Attendance/Participation	All weeks	5%
8	Final	17	40%

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)

- Each group of students is assigned to a member of staff who will be available for help and academic guidance office hours at specific 2 hours on daily basis.

E. Learning Resources

1. List Required Textbooks
- Rajkumar Buyya, S. Thamarai Selvi, and Xingchen Chu, "Object Oriented Programming with Java: Essentials and Applications", McGraw Hill Publishing Company, 2009.

2. List Essential References Materials (Journals, Reports, etc.)
- Danny Poo, Derek Kiong, and Swarnalatha Ashok, "Object-Oriented Programming and Java " Springer; 2nd Edition (June 2, 2010) ISBN-10: 9781846289620 , ISBN-13: 978-1846289620
- Paul Deitel and Harvey Deitel, "Java How to Program", 9th Edition, 2011.

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

4. List Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)
- Blackboard and Social Media

5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.
- CDs accompanied with the text book, power point lectures and essential references

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.)

Classrooms:
- Furnished with a large central table or multiple small tables that can be grouped into one central table
- Designed for up to 25 students
- Size the room allowing 1sq meter per seat

Laboratories:
25 PC's (one for each students)

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2. Computing resources (AV, data show, Smart Board, software, etc.)

- Smart Board, projector, internet, and whiteboard.

3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)
- No

G. Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching:

- Student questionnaires to be assessed by independent body.
- Assessment of course teaching strategies by independent body.

2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor:

- Student questionnaires to be assessed by department.

3 Processes for Improvement of Teaching:

- Attending workshop, reading books, and the searching for e-resources.
- Revision of course contents, course specifications, and strategies every 5 years.

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)

- Check marking by an independent member of staff of a sample of student work.
- Periodic exchange and remarking of a sample of assignments with a member of staff in another institution

5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.
- Reviewing student's feedback.
- Update text books.
- Consulting other top universities course specifications and contents.