هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

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Course Title:	**Programming 1**
Course Code:	**CS0122**
Program:	**Computer Science (Cybersecurity- Programming- Networks)**
Department:	**Applied Sciences**
College:	**Applied College**
Institution:	**Imam Muhammad Bin Saud Islamic University**
Version:	
Last Revision Date:	October 8, 2024

Table of Contents:

A. General information about the course:

Course Identification	
1. Credit hours:	3 (2 theory , 2 lab)
2. Course type	
a.	University ☐ College ☐ Department☒ Track☐ Others☐
b.	Required ☒ Elective☐
3. Level/year at which this course is offered:	Level 2
4. Course general Description: Through this course, the student is introduced to a set of basic skills in object-oriented programming (OOP). This course includes identifying the environment that is used for editing the program (Editing), translating it into machine language, executing it, recognizing and correcting errors, as well as representing data and operations of all kinds, in addition to using sentences, commands, and structural control tools. Throughout the semester, the course includes an integrated case study in which all previous concepts are employed to build an integrated project.	
5. Pre-requirements for this course (if any): CS0115	
6. Co- requirements for this course (if any): N/A	
7. Course Main Objective(s): The course aims to lay the foundation for the basic skills in object-oriented programming for the student to be able to propose solutions to problems so that they are valid for formulation in the form of a computer program.	

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	48	100%
2.	E-learning		
3.	Hybrid ● Traditional classroom ● E-learning		
4.	Distance learning		

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	24
2.	Laboratory/Studio	24
3.	Field	
4.	Tutorial	
5.	Others (specify)	
	Total	48

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Familiarity with the basic concepts of object-oriented programming.	K1, K2, K5	• Classroom Lecture • Dialogue and discussion • Survey • Learning by discovery • Self-learning • Developed lecture • Brainstorming • Web polling • KWL Learning Schedule • Mind Maps • Concept Maps	• Traditional and electronic achievement tests • Classroom Questions • Assignments and periodic evaluations • Presentations • Discussion and debate • Cognitive Performance Tests • Achievement File
2.0	Skills			
2.1	Write advanced programs in Java using the basic components of the language.	S1, S2, S3, S4, S7	• Practical presentation • Developed Lecture • Discovery learning • Peer Learning • Self-learning • Dialogue and discussion • Web polling • Brainstorming • Collaborative Learning • Problem solving • Project-Based Learning • Online discussion forums	• Presentations • Grading scales • Performance tests • Production Metrics • Observation • Software Projects • Achievement File • Peer Evaluation • Self-evaluation
2.2	Build a complex data architecture using one and two-dimensional arrays.	S1, S2, S4, S7		
2.3	Use all kinds of operations when writing a program in Java.	S1, S2, S3, S4, S7		
2.4	Use structural control string tools when writing a program in Java.	S1, S2, S3, S4, S7		
2.5	Adjust the mechanism for tracking the progress of the program's implementation.	S1, S2, S7		
2.6	The use of information and communication technology in communication, exchange of ideas, scientific research, and	S1, S2, S7		

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	performance of tasks and costs.			
2.7	Practice critical thinking and problem solving facing the learner in the course in creative ways.	S1, S2, S7		
3.0	Values, autonomy, and responsibility			
3.1	Cooperation, teamwork, and imitation of professional ethics.	V1	• Project-Based Learning • Collaborative Learning • Dialogue and discussion • Practical lecture • Modeling and role models • Web polling	• Note cards • Discussion and dialogue • Classroom Questions • Grading metrics • Measures of values • Self-evaluation • Peer Evaluation • Achievement File
3.2	Take responsibility for continuous learning and continued personal development.	V2		
3.3	Manage time efficiently and effectively when applying acquired knowledge and skills.	V3		

C. Course Content

No	List of Topics	Contact Hours
1.	**Chapter 1: Introduction to Java** ○ Statements ▪ Declaration Statements ▪ Comments Statements ▪ Input/Output Statements ● Standard Input/Output Statements ● GUI Input/Output Statements	6
2.	**Chapter 2: Operations in Java** ● Operations ○ Textual Operations ○ Casting Operations	6
3.	**Chapter 3: Control Structure - Conditional Statements** ● simple if ● if else ● nested if else ● ?: procedure ● nested conditional ● switch	12
4.	**Chapter 4: Control Structure – Looping and Jumping Statements** ● Looping Statements Tools: ○ for ○ while	12

	○ do while ○ nested loop ● Jumping Statements Tools: ○ break ○ continue ○ return	
	Chapter 5: Arrays ○ Matrix concept. ○ Matrix definition. ○ Matrix types: ▪ Single matrix. ▪ Multidimensional matrix. ○ Identify the elements of the matrix. ○ Access the matrix. ○ Operations on a single matrix. ○ Operations on the binary matrix.	12
Total		48

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Midterm	Week 7	15%
2.	Quizzes	All Semester	10%
3.	Lab Evaluations	All Semester	30%
4.	Group Project	Week 10-11	20%
5.	Participation	All Semester	5%
6.	Final Lab Exam	Week 12	20%
	Total		**100%**

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	Deitel P.J., Deitel H.M. - Java. How to Program, 10th Edition
Supportive References	1- Head First Java, by Kathy Sierra and Bert Bates. 2- Java: A Beginner's Guide, by Herbert Schildt. 3- Effective Java: Programming Language Guide (Java Series), by Joshua Bloch. 4- Simple Program Design, by Lesley Robertson.
Electronic Materials	Online resources will be provided during class lectures.
Other Learning Materials	N/A

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom, Computer lab
Technology equipment (projector, smart board, software)	Data Show, Smart Board, NetBeans software
Other equipment (depending on the nature of the specialty)	-

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Student , Peer Reviewer	1. Questionnaires and referendums approved by the department. 2. Peer evaluation of faculty members. 3. Review the results of student evaluation.
Effectiveness of students assessment	Students, Faculty, Program Leaders, Peer Reviewer	1. Questionnaires and referendums approved by the department. 2. Review course descriptions and course reports periodically. 3. Peer evaluation and periodic exchange of correction and auditing between faculty colleagues. 4. Review samples of students' work.
Quality of learning resources	Student, Faculty, Program Leaders	1. Questionnaires and referendums approved by the department. 2. Deletion and monitoring lists.
The extent to which CLOs have been achieved	Faculty, Program Leaders	1. Review the course report. 2. Analyze test forms, grades and student work and records of their achievements.
Other		

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	