هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

Course Title:	**PROGRAMMING -1**
Course Code:	**COMP-112**
Program:	**Bachelor in Computer Science**
Department:	**Computer Science**
College:	**College of Computer Science and Information Technology**
Institution:	**Jazan University**
Version:	**V2**
Last Revision Date:	**12 September 2021**

Table of Contents:

A. General information about the course:

Course Identification					
1. Credit hours:	3				
2. Course type					
a.	University ☐	College ☒	Department☒	Track☐	Others☐
b.	Required ☒	Elective☐			
3. Level/year at which this course is offered:	02				
4. Course general Description This course is designed to provide students with an overview of essential concepts and principles of programming. Programming basics will be explored using the Java programming language. Specific topics covered included are:-An Overview of Computers and Programming Languages, Basic Elements of Java, Variables, Types, Operators, Branching mechanism, Iteration and loops, Methods and Arrays.					
5. Pre-requirements for this course (if any): COMP 111					
6. Co- requirements for this course (if any): None					
7. Course Main Objective(s) • Give an overview of programming language. • Describe the basic elements of Java. • Make the student understand the different Data types and variables used in Java programming. • Explain the Branching mechanism as well as looping concepts for programming. • Provide an overview of Methods and Arrays.					

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	44	80%
2.	E-learning		
3.	Hybrid • Traditional classroom • E-learning		
4.	Distance learning (Self Learning)	11	20%

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	22
2.	Laboratory/Studio	22
3.	Field	
4.	Tutorial	
5.	Others (specify)	8
	Total	52

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	Describe the basic elements of computer programming languages	K1	Lectures/Presentations Media lectures Tutorials	Exam 1 Assignment- 1 Final Theory Exam
1.2	Define the variables, looping and branching mechanism of the specific programming language	K1	Lectures /Presentations Media Lectures	Exam 1 Assignment- 1 Final Theory Exam
2.0	Skills			
2.1	Analyze a computing problem and implement it into a program for solution.	S1	Lectures /Presentations Lab demonstration	Assignment –1 Lab Exam Assignment-2 Final Theory Exam
2.2	Develop a program using an efficient technique to solve particular problem.	S3	Lectures /Presentations Lab demonstration Active class participation	Assignment 2 Quiz Lab Exam Final Theory Exam
2.3	Implement a program and detect the errors of the program.	S4	Group Discussion	Assignment 2 Lab Exam Quiz Final Theory Exam

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
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3.0	Values, autonomy, and responsibility			
3.1	Demonstrate the ability to work in a team to perform in a group to design and develop a mini-software project	V2	Group Discussion	Group Assignment Presentation
3.2				
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C. Course Content

No	List of Topics	Contact Hours
1.	Chapter One: Introduction Lecture 1: Concept of: Program & Programming Language, High Level Language, Translator (Compiler, Interpreter), Basic Operations in Java, Debugging?, Types of errors in Java, Concept of Formal and natural Language Lecture 2: A Sample Java Application Program, Define object and methods in Java, What is System.out ? How to call calling a method?,Concepts of Comments , Arithmetic Operators and Expressions, Simple Java program, Exercise & Glossary Self-Study Topic(s): Difference between (println & print).	2T+ 2P
2.	Chapter Two: Variables & Types Lecture 1: Variables, Types of variables, Identifier, Variable Declarations & its naming Conventions, Primitive variable Types, Use of + for concatenation. Lecture 2: Assignment operator, Arithmetic Assignment operators, its examples, Enumerated data Type(enum), Difference between (int & double) and (float &. double), Type Casting, Class String, How to concatenate Strings Exercise & Glossary Self-Study Topic(s): Valid variable names, Keywords and Reserved words, Difference between variable & Constants.	2T + 2P
3.	Chapter Three: Branching Mechanism Lecture 1: Main concepts, Define Packages, How to import Packages and Classes, Use of Scanner Class for Console Input, Illustration with different types of inputs through console.	6T+ 6P

	Lecture 2: Branching, What is branching in Java?, Explain:- if, else, else if with examples. Lecture 3: Relational operators, Chained conditionals. Lecture 4: Nested conditions, Explain Chained vs. Nested conditions with examples. Lecture 5: Conditional Operators, (&&=>AND, ||=>OR, and !=>NOT) Lecture 6: switch statement, Problem of fall through Self-Study Topic(s): Difference between (= = & =) operators.	
4.	Chapter Four: Iteration & Loops Lecture 1: What is Iteration and loops?, Types of loops, Explain with examples, while loop, do-while loop. Lecture 2: Session for loop, Illustrate with examples, Conversion from one loop statement to another Lecture 3: Demonstrate Nested loops, Explain Infinite Loops with examples, Increment(++) & decrement(- -) operators. Lecture 4: Explain pre-increment/decrement & post increment/decrement with examples, Explain with example different types of jump statements, break, continue, return, exit statement, Self-Study Topic(s): Differentiate between while & do-while with examples. Explain difference between exit & break statement	4T+ 4P
5.	Chapter Five: Selected Topics : Methods and Arrays Lecture 1: Array: Define an array, One-Dimensional & Multi-Dimensional Array. Lecture 2: Array declaration, Array Assignment & Initialization Lecture 3: Copying values into an array, Array length Lecture 4: Method, Define class & method, Explain main method, Explain how to add new method, Explain with example. Lecture 5: What is parameter?, How to use parameters and arguments in a method?, Explain methods with multiple parameters. Lecture 6: void method, Returning values through method Exercise & Glossary	6T+ 6P
Total		20T+20P

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Midterm Exam	5th-6th week	15%
2.	Assignment I	3rd week	10%
3.	Assignment II (Case Study/ Group assignment)	6th-7th week	10%
4.	Quiz	9th week	5%
5.	Lab Exam + Lab Assignment	As per schedule	20%
6.	Final Theory Exam	As per schedule	40%
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*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	Downey, Allen B., and Chris Mayfield. Think Java: How to think like a computer scientist. O'Reilly Media, 2019.
Supportive References	Cosmina, Iuliana. Java for Absolute Beginners: Learn to Program the Fundamentals the Java 9+ Way. Apress, 2018.
Electronic Materials	• https://www.w3resource.com/java-exercises/ • https://beginnersbook.com/2013/05/java-introduction/
Other Learning Materials	• Lab Manual.

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	• Classroom equipped with projector, whiteboard, and sufficient seating arrangements. • Lab with software installed and individual computer terminal for each student.
Technology equipment (projector, smart board, software)	• Whiteboards and projectors for classroom and lab • Following software for lab work: • NetBeans • BlueJ
Other equipment (depending on the nature of the specialty)	None

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Indirect (Course evaluation survey form)
Effectiveness of students assessment	CRC / QAU / HoD	Direct (Course reports / result analysis)
Quality of learning resources	Track leaders / CRC	Indirect (Review, meetings and star rating with suggestions for further modification and improvements)
The extent to which CLOs have been achieved	CRC / QAU	Direct (CLO assessment template further verified at course coordinator, Track leader and QAU level)
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	DEPARTMENT COUNCIL
REFERENCE NO.	
DATE	15/10/2022