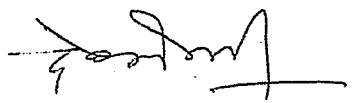


PART A: Introduction			
Program: Diploma		Class: BCA	Year: II Year
Session: 2022-23			
Subject: Computer Applications			
1.	Course Code	S2-BCAB2T	
2.	Course Title	Internet Applications using Java Programming	
3.	Course Type (Core Course/Elective/Generic Elective/ Vocational)	Core Course	
4.	Pre-Requisite (if any)	To study this course, a student must have basic knowledge of Object-Oriented Programming.	
5.	Course Learning Outcomes (CLO)	After the completion of this course, a successful student will be able to do the following: <ul style="list-style-type: none"> • Use an integrated development environment to write, compile, run, and test simple object-oriented Java programs. • Read and make elementary modifications to Java programs that solve real-world problems. • Validate input in a Java program. • Design and use basic applet for web page 	
6.	Credit Value	Theory – 4 Credits Practical – 2 Credits	
7.	Total Marks	Max. Marks : 30+70	Min. Passing Marks: 33

PART B: Content of the Course		
No. of Lectures (in hours per week): 2 Hrs. per week		
Total No. of Lectures: 60 Hrs.		
Module	Topics	No. of Lectures
I	The Java Environment: History and features of java, C++ Vs java, OOPs concept, how java works, the concept of PATH and CLASS PATH, A simple program, its compilation and execution, JAVA Program Structure, Java Virtual Machine concepts, java platform overview, Primitive data types, variables and constants, operators, expression, statement-branching, looping and jumping, labeled statements.	10
	Object Oriented Programming in Java: Classes, objects and methods: defining a class, adding variables and methods, creating objects, constructor, Instances, field and methods initialization by constructors, Copy constructor, memory allocation and garbage collection in java keywords, access methods Arrays, String and String buffer classes, Wrapper classes, using the JDK tools.	


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II	<p>Inheritance: Inheritance basics, Super class, Sub-class, Method overloading, abstract classes</p> <p>Interfaces: defining an interface, implementing & applying interfaces, variables in interfaces, extending interfaces.</p> <p>Multithreading and Exception Handling: Basic idea of multithreaded programming; The lifecycle of a thread, Creating thread with the thread class and runnable interface, Thread synchronization, Thread scheduling, Basic idea of exception handling: The try, catch and throw, throws</p>	14
III	<p>Applet programming-Local and Remote Applets, Applet Vs Application, creating and executing java applets, inserting applets in a web page, java security, passing parameter to applets, Aligning the Display,HTML Tags & Applet Tag, Getting Input from User.</p> <p>The AWT: The class hierarchy of window fundamentals; The basic user interface components Label, Button, Check Box, Radio Button, Choice menu, Text area, Scroll list, Scroll bar; Frame; Layout managers-flow layout, Grid layout, Border layout, Card layout.</p>	12
IV	<p>The Java Event Handling Model: Java's event delegation model ignoring the event, Self contained events, Delegating events, The event class hierarchy, The relationship between interface, methods called, parameters and event source; Adapter classes, Event classes action Event, Adjustment Event, Container Event, Focus Event, Item Event, Event, Mouse Event, Text Event, Window Event.</p> <p>Networking-basics, networking classes and interfaces, using java.net package, TCP/IP and datagram programming.</p>	12
V	<p>Input/ Output: Exploring Java i.o, Directories, stream classes</p> <p>The Byte Stream : Input stream, output stream, file input stream, file output stream, print stream, Random access file, the character streams, Buffered reader, buffered writer, print writer, serialization.</p> <p>JDBC: JDBC-ODBC bridge, The connectivity model, The driver manager, Navigating the result set object contents, java.sql Package, The JDBC exception classes, Connecting to Remote database.</p>	12

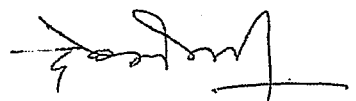
PART C: Learning Resources

Textbooks, Reference Books, Other Resources

Suggested Readings

Textbooks:

- Schildt java Complete Reference TMH
- Das Rashmikanta Core Java, IE, Vikas
- Bansal Nitin, AjiKumar, A Simplified approach to Java Programming , KALYANI
- Naughton&Schildt "The Complete Reference Java 2", Tata McGraw Hill
- Deitel "Java- How to Program:" Pearson Education, Asia
- Horstmann& Cornell "Core Java 2" (Vol I & II) , Sun Microsystems


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- IvanBayross "Java 2.0" : BPB publications
- Ivor Horton's "Beginning Java 2, JDK 5 Ed., Wiley India.
- Book published by M.P. Granth Academy , Bhopal

Suggestive digital platform web links

<https://www.youtube.com/watch?v=CFD9EFcNZTQ>

<https://www.youtube.com/watch?v=7WhnYwoBY24>

<http://www.mphindigranthacademy.org/>

Suggested equivalent online courses

S.No.	Online Course	Duration	Platform
1	Programming in Java https://youtu.be/J_d1fJy90GY	12 weeks	NPTEL
2	The Complete Java Certification Course https://www.udemy.com/course/master-practical-java-development/	Self paced	Udemy

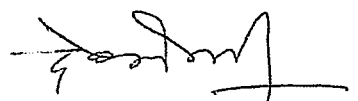
Part D-Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks : 100

Continuous Comprehensive Evaluation (CCE) : 30marks University Exam (UE) 70marks

Internal Assessment : Continuous Comprehensive Evaluation (CCE):30	Class Test Assignment/Presentation	Total 30
External Assessment : University Exam Section: 70 Time : 03.00 Hours	Section(A) : Objective Questions Section (B) : Short Questions Section (C) : Long Questions	Total 70


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PART A: IntroductionProgram: **Certificate**Class: **B.C.A.**Year: **III Year**Session: **2021-22****Subject: Computer Applications**

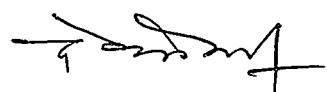
1.	Course Code	S2-BCAB2P
2.	Course Title	Java Programming Lab
3.	Course Type (Core Course/Elective/Generic Elective/ Vocational)	Core Course
4.	Pre-Requisite (if any)	To study this course, a student must have basic logical and analytical skills.
5.	Course Learning Outcomes(CLO)	<p>After the completion of this course, a successful student will be able to do the following:</p> <ol style="list-style-type: none"> 1. Develop simple applications of java. 2. Implementation and use of conditional statement. 3. Learn to formulate iterative solutions and array processing algorithms for problems. 4. Learn to implement method Overloading and Overriding. 5. Implementation of inheritance and interface in java. 6. Develop a small applet program using awt.
6.	Credit Value	Practical – 2 Credits
7.	Total Marks	Max. Marks : 30+70 Min. Passing Marks: 33

PART B: Content of the CourseNo. of Lab Practicals (in hours per week): **2 hours per week**Total No. of Lab.: **30 (each lab of 2 hours)****Suggestive list of Practicals****No. of Labs.**

Given the problem statement, students are required to write code in Java, execute and test it. Students should be given assignments on following :

1. Write a program to print numbers in words using **Nested if and Switch Case**.
2. Write a program called **PassFail** which prints "PASS" if the int variable "mark" is more than or equal to 50; or prints "FAIL" otherwise
3. Write a program called **OddEven** which prints "Odd Number" if the int variable "number" is odd, or "Even Number" otherwise.
4. Write a Program to find sum & average of 10 no. using arrays.
5. Write a program to display reverse of a digit no. using array.
6. Write a program to display grade according to the marks obtained by the student.
7. Find the factorial of number if number is given by user using

30


(Dr. G. S. Ramani)

	<p>command line argument.</p> <ol style="list-style-type: none"> 8. Write a program to print Fibonacci series. 9. Write a program to display tables from 2 to 10. 10. Write a program to take an input from user and check given number is prime or not. 11. Write a program to implement method overriding. 12. Write a program to convert given string into. Uppercase and lowercase and get the length of string Using array 13. Write a program to overload volume method to find out volume of cube and cuboid. 14. Write a program to design a class using abstract Methods and Classes. 15. Write a program to implement multiple inheritance by using Interface. 16. Write a program to create a package of your name and use that package in a class 17. Write a program to implement parameterized constructor with default argument. 18. Define an exception called "Marks out of Bound" exception that is thrown if the entered marks are greater than 100. 19. Develop a simple real life application to illustrate the use of multithreading. 20. Design an applet that takes three numerical values as input from the user and then displays the largest of those three numbers on the screen 	
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PART C: Learning Resources

Textbooks, Reference Books, Other Resources

Suggested Readings

- Naughton & Schildt "The Complete Reference Java 2", Tata McGraw Hill
- Java EE 6 for Beginners, Sharanam Shah, Vaishali Shah, Shroff Publishers and Distributors

Reference Books:

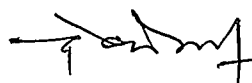
- Java EE Project using EJB 3, JPA and struts 2 for beginners, Shah, SPD
- Java Programming A practical Approach, C Xavier, McGraw Hill
- Java Server Faces A practical Approach for beginners, B M Harwani, Eastern Economy Edition (PHI).
- Advanced Java Technology, Savaliya, Dreamtech.

Suggestive digital platform web links

<https://www.youtube.com/watch?v=CFD9EFcNZTQ>

<https://www.youtube.com/watch?v=7WhnYwoBY24>

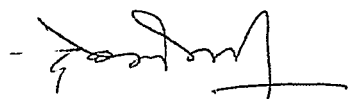
Suggested equivalent online courses


 (Dr. Goswami)

Suggested equivalent online courses			
S.No.	Online Course	Duration	Platform
1	Programming in Java https://youtu.be/J_d1fJy90GY	12 weeks	NPTEL
2	The Complete Java Certification Course https://www.udemy.com/course/master-practical-java-development/	Self paced	Udemy

Part D-Assessment and Evaluation
Suggested Continuous Evaluation Methods:

Internal Assessment	Marks	External Assessment	Marks
Class Interaction /Quiz		Viva Voce on Practical	
Attendance		Practical Record File	
Assignments (Charts/ Model Seminar / Rural Service/ Technology Dissemination/ Report of Excursion/ Lab Visits/ Survey / Industrial visit)		Table work / Experiments	
TOTAL	30		70


 Dr. G. Goswami