

Core Java
Core Java
[CORE COURSE]

Semester: V	Credits: 3	Subject Code: BC52203	Lectures: 48
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Course Outcomes:

At the end of this course ,the learner will be able to:

- Understand the basics of OOP techniques
- Solve problems using java collection framework and I/O classes
- Develop multithreaded applications with synchronization
- Design GUI based applications.

Unit 1: Java Fundamentals and Classes, Objects	16
<ul style="list-style-type: none">• Introduction to Java.• Features of Java• Basics of Java: - Data types, variable, expression, operators, constant.• Structure of Java Program.• Execution Process of java Program.• JDK Tools.• Command Line Arguments.• Array and String:• Single Array & Multidimensional Array• String, String Buffer• Built In Packages and Classes:• java.util:- Scanner, Date, Math etc.• java.lang• Class and Object• Object reference• Constructor: Constructor Overloading• Method: Method Overloading, Recursion, Passing and• Returning object form Method• new operator, this and static keyword, finalize() method• Nested class, Inner class, and Anonymous inner class	



Unit 2: Inheritance, Package and Collection	10
<ul style="list-style-type: none">• Overview of Inheritance• Inheritance in constructor• Inheriting Data members and Methods,• Multilevel Inheritance – method overriding Handle multilevel	

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- constructors
- Use of super and final keyword
- Interface:
 - Creation and Implementation of an interface, Interface reference
 - Interface inheritance
 - Dynamic method dispatch
 - Abstract class
 - Comparison between Abstract Class and interface
 - Access control
 - Packages
 - Packages Concept
 - Creating user defined packages
 - Java Built in packages
 - Import statement, Static import
- Collection
 - Collection Framework.
 - Interfaces: Collection, List, Set
 - Navigation: Enumeration, Iterator, ListIterator
 - Classes: LinkedList, ArrayList, Vector, HashSet

Unit 3: File and Exception Handling

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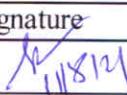
- Exception
- Exception and Error
- Use of try, catch, throw, throws and finally
- Built in Exception
- Custom exception
- Throwable Class.
- File Handling
- Overview of Different Stream (Byte Stream, Character stream)
- Readers and Writers class
- File Class
- File Input Stream , File Output Stream
- Input Stream Reader and Output Stream Writer
- class
- FileReader and FileWriter class
- Buffered Reader class

Unit 4: AWT and Swing Programming

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- AWT
- Components and container used in AWT
- Layout managers
- Listeners and Adapter classes
- Event Delegation model
- Swing



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- Introduction to Swing Component and Container Classes
- Exploring Swing Controls- JLabel and Image Icon, JTextField, The Swing Buttons JButton, JToggle Button, JCheck Box, JRadio Button, JTabbed Pane, JScrollPane, JList, JTable, JComboBox, Swing Menus, Dialogs, JFileChooser

#12 hours for Library work, assignments, practical or field work

Recommended Text Books:

- Ebalgurusamy, *Programming with JAVA*
- S. Malhotra, S. Chudhary, *Programming in Java*, 2nd edition, Oxford Univ. Press

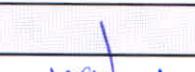
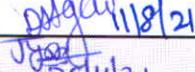
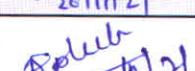
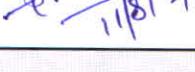
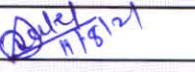
Reference Books:

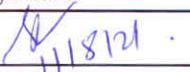
- Ebalgurusamy, *Programming with JAVA*
- JAVA HerbertSchildt, *The Complete Reference*
- R. A. Johnson, Ceng, *Java Programming and Object-oriented Application Development*
- S. Malhotra, S. Chudhary, *Programming in Java*, 2nd edition, Oxford Univ. Press.

Websites:

- www.w3cschool.com



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Subject Expert (Outside SPPU)	Dr. Sagar Jambhorkar	 11/8/21
VC Nominee	Prof Anjum Patel	 11/8/21
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