OBJECT ORIENTED PROGRAMMING USING JAVA

MICRO SYLLABUS

S.N	CONTENT	HOUR	BREAK	REMARKS
1	INTRODUCTION TO OOP	7		
	• Introduction to OO: Classes and Objects • Comparison between structured programming and OOP • Declaring objects • Member data and functions • Encapsulation • Constructor, destructor and finalize() method • Chain of constructor • Invoking base class constructor • Objects and arrays • "this" keyword • Wrapper classes • Objects as parameter		0.5 0.5 0.5 0.5 1 1 0.5 0.5 0.5 0.5 0.5 0.5 0.5	Introduction Portion PRESENTATION 2 LABS Required
2	INHERITANCE AND POLYMORHISM	10		
	• Super class, sub class, inheritance and member access • Types of inheritance • extends and super keyword • Overriding methods • The Object class • Final classes and methods • Abstract classes and methods • Creating and using interface • Method overloading • Upcasting and downcasting • Object equivalence		1 0.5 1 1 0.5 1 1 1.5 1.5 0.5 0.5	2 LABS Required UNIT TEST (17) PRESENTATION
3	STRING AND STRINGBUFFER CLASS	3		
	• String vs StringBuffer • Accessor methods • Immutable string • Converting objects to string • Strings and the Java compiler		0.5 0.5 0.5 1 0.5	1 LAB Required

4	EXCEPTION HANDLING	9		
	• Errors and exceptions • Why we need to deal with exception • Life cycle of exception • Checked and unchecked exception • Exception hierarchy • Catching and handling exceptions • Try, catch and finally block • Throwing the exception • Exception class • Creating our own exception		1 0.5 0.5 0.5 0.5 1 1 1 1 2	2 LAB Required PRESENTATION
5	INPUT AND OUTPUT STREAMS	4		
	• Representing and managing file paths • I/O class hierarchy • Byte streams and character streams • Exception handling in Java I/O • Java file I/O classes • Object serialization		0.5 0.5 0.5 1 0.5 1	1 LAB Required MID TERM(16)
6	JAVA COLLECTIONS	7		
	• Java collection and generic • Iterating collection • List, ArrayList, LinkedList, Set, HashSet, Map • Type safety in java collection • Type wildcards		1 1 3 1 1	2 LAB Required
7	DESIGN PATTERN	5		
	• Introduction to design pattern • Singleton, factory, abstract factory • Adapter • Composite • Decorator • Chain of responsibility • Observer		1 1 0.5 0.5 0.5 0.5 0.5 0.5	PRESENTATION
	TOTAL CLASSES	45 Hours		

LAB PREPARATION

S.N	CONTENT	LAB HOUR
1	INTRODUCTION TO OOP	5
2	INHERITANCE AND POLYMORPHISM	5
3	STRING	4
4	EXCEPTION HANDLING	5
5	INPUT / OUPUT	4
6	JAVA COLLECTION	7
TOTAL		30 Hours LAB

TASK DIVISION

S.N	CONTENT	UNIT	HOURS
1	UNIT TEST	2	17
2	MID TERM	5	16
3	PRE BOARD	7	12
Total Hours		45	

Books:-

1. Java : The Complete Reference, 7th edition, Herbert Schildt
2. Java How to Program, 9th edition, Paul Deitel, Harvey Deitel