

BITS-Pilani, K.K.Birla Goa Campus

Second Semester: 2018-2019

Course Handout: Part-II

08/01/19

In addition to Part-I (General Handout for all courses appended to the time table), this portion gives further specific details regarding the course.

Course No. : **CS F213****Course Title** : Object Oriented Programming**Instructor-in-Charge** : Prof. Anita Agrawal (aagrawal@goa.bits-pilani.ac.in)**1. Scope and Objectives of the course:**

This course provides the students with an understanding of the object-oriented programming paradigm. The topics include Introduction to Object Oriented Programming, Classes and Methods, Encapsulation, Inheritance, Polymorphism, and Multithreaded Programming. The covered topics will be further explained in lab sessions using Java as the programming language. Upon successful completion of this course, students will have a thorough understanding of object oriented analysis and design process, and will be able to demonstrate object-oriented concepts in Java programming language.

2. Components: Lectures and Laboratory Experiments**3. Text Books:**

T1: The Complete Reference Java J2SE, 5th Edition, Herbert Schildt, Tata McGraw Hill Publishing, 2005

T2: Objects First with Java: A Practical Introduction Using BlueJ, David J. Barnes and Michael Kolling, Pearson Education, 5th Edition, 2012

4. Reference Books

R1: Head First Java, Bert Bates, O'Reilly, 2nd Edition, 2005

R2: Core Java Volume I - Fundamentals, Cay Horstmann, Pearson Education, 8th Edition 2008

5. Course Plan:

No. of Lectures	Topics to be covered	Reference to Text Book
1	Introduction and review	Class notes + course handout
3	Introduction to Object Oriented Programming, Class definition, Object, Principles of OOP, Introduction to Java program syntax, Compiling & execution of Java program	T1 Ch2, T2 Ch1, Class Notes
2	Primitive data types, Type conversion and casting, Arrays, Operators, Control statements, Minor differences between C & Java	T1 Ch3, Ch4, Ch5 T2 Ch2, class notes
3	Class fundamentals, Objects, Constructors and Methods, Garbage collection	T1 Ch6, T2 Ch2 Class notes
2	UML, Sequence, and State diagrams	R2 Ch4, class notes
4	Variables of class and null type, Method overloading, Object as parameters, Argument passing, Access Specifiers	T1 Ch7, class notes
4	Static variable and static methods, Accessors and Mutators, Introducing final: Final methods, Final classes, Introducing nested and inner class,	T1 Ch7, class notes

2	Revisiting arrays, Exploring string class, Variable length arguments	T1 Ch7, class notes
4	Inheritance, Keyword: super, Instance variable hiding, Multilevel hierarchy, Method overriding, Abstract classes, Final with inheritance.	T1 Ch8, T2 Ch8, Ch9, class notes
2	Packages, Importing packages, Creating packages, Access protection, Interfaces, Defining and implementing interfaces	T1 Ch9, class notes
4	Exception handling fundamentals, Exception types, Try and catch, Nested try statements, Java's built-in exceptions, Keywords: throw, throws, and finally	T1 Ch10, T2 Ch12, class notes
3	Thread model and basics, Creating new threads, The Main thread, Thread synchronization	T1 Ch11, class notes
4	File handling in Java, I/O Classes and Interfaces, Stream classes	T1 Ch19, class notes
2	Advanced Topics in OOP and Java	Class Notes

6. Evaluation Scheme:

Component	Type	Weightage Percentage (marks)	Duration	Date, day & Time
Mid-sem Exam	Closed Book	30% (60)	90 mins	16/03/2019, 2 to 3:30 pm
Regular Labs	Open Book	30 % (60)	2 hours/week	Thursday 5 to 7 pm
Comprehensive Exam	Closed Book	40% (80)	3 hours	14/05/2019, Tuesday (FN)

** Best 8 out of 10 evaluated labs shall be considered for grading.*

7. Chamber Consultation Hour: Monday, 3rd hour

8. Make-up Policy: Make-ups shall be allowed only in genuine cases, on a case-by-case basis and on proper justification. Prior permission from the IC is necessary.

9. Notices: All notices will be displayed in the course folder on photon

10. Evaluation Policy: *Any attempt of cheating or plagiarism in tests or labs will attract disciplinary committee action.*



Instructor-in-Charge
CS F213

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