

BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI-HYDERABAD CAMPUS
FIRST SEMESTER 2019-20
COURSE HANDOUT (PART II)

01/08/2019

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 Number : CS F213
Course Title : **Object Oriented Programming**
Instructor-In-Charge : **Dr. R. Gururaj**
Instructor : **Dr. Barsha Mitra, Dr. Sudeepta Mishra,**
Mrs. T Sahithi, Mrs. Priyanka and Mrs. BSAS Rajita

1. Scope of the course:

The scope of this course includes basics of Object Orientated Concepts; Fundamentals of Object model; Essential features of Object model; Classes and Objects; Operations/Methods and Messages; Abstraction mechanism; Inheritance; Polymorphism; Multithreading; Exception handling; I/O; Event handling; Object serialization; Process of Object Oriented Design; Design Patterns; Brief introduction to other Object Oriented Applications (other than Java). Important point to be noted is that the important Object Oriented Concepts like- Exceptions, Multithreading, IO etc., are understood by working with Java.

2. Course objectives:

- Provide the student with an understanding of the need for Object Oriented Paradigm.
- To gain knowledge on important features of Object Orientation with the help of Java (through hands-on lab experience).
- To gain basic knowledge on Object Oriented Design methodology, and notations in modeling.
- To get a rough idea about Object Oriented Design Patterns.

3. Text Book:

T1: Object Oriented Design and patterns, Cay Hortsman, Wiley, 2004.

4. Reference Books:

R1. The Complete Reference- Java, 7th Edition, Herbert Schildt, Tata McGraw Hill Publishing.

R2. Object Oriented Analysis and Design with Applications, Grady Booch, Addison Wesley, 2nd Edition.

R3. The Unified Modeling Language User Guide, the ultimate tutorial to the UML from the Original Designers, G Booch, J Rumbaugh, I Jacobson, Pearson Education, 2006.

5.Course Plan

Lecture No.	Learning Objectives	Topics Covered	Chapter in the Text Book
1-3	To understand the need for Object Orientated Programming Paradigm	Introduction to Object Oriented Concepts and Principles	T1.Ch.2 ; R2-Ch.1 and Class notes
4-8	To learn the fundamentals of Object model in terms of classes and methods	Object Model	T1.Ch.2 ; R2- Ch.2
9-12		Classes and Objects	T1.Ch.2&3; R1-Ch.6,7; R2-Ch.3
13		Encapsulation and Data hiding	T1-Ch.3; R1.ch.2; and Class notes
14-15		Methods and Messages	T1.Ch.3; R1-Ch.6,7 ; R2-Ch.3; and Class notes
16-17	To understand the basics of class hierarchies in Object Orientation	Classification and Abstraction mechanism	T1.Ch.2; R2- Ch.4;
18-20		Inheritance and Polymorphism	T1 –Ch.6; R1.Ch.7&8
21-25	To understand multithreading concepts and apply it through Java programming	Multithreading and Synchronization concepts	T1 –Ch.9; R1- Ch.11; and class notes
26-28	To learn Java Exception handling mechanism	Exception Handling essentials	T1.Ch.1.8; R1-Ch.10
29-32	To learn and work with IO streams in Java	I/O Streams	R1- Ch.13 and Ch.19
33		Object Serialization	T1.Ch.7.5; R2- Ch.19
34-37	Introducing students to Object Oriented Analysis and Design activity in the context of UML	Process of Object Oriented Design	T1- Ch.2&3; R2-Ch. 2-5; R3 for notations; and Class notes
38-39		Object Oriented Design Patterns	T1- Ch.5&11
40-41	To provide an overview of other popular Object Oriented Programming Languages	Object oriented Programming languages (overview)	R2-Appendix; and Class notes
42		Conclusion	

5. Evaluation

Component	Duration	Weightage	Date & Time	Nature of Component
Mid-semester Exam	90 Mins.	25%	4/10, 11.00 -- 12.30 PM	Closed Book
Mini-project (with viva)	Take home	15%	To be announced	Open Book
End-semester Lab Exam	1 Hr.	15%	24-11-2019	Open Book
Comprehensive Exam	3 Hrs.	45%	11-12-2019 AN	Closed Book

6. Make-up Policy

For genuine reasons other than medical, prior approval from the IC is mandatory. Requests coming after the test will not be honored. For make-up on medical grounds, first inform the warden about the illness and take his help for consulting the doctor, and finally Chief Hostel Warden's recommendation is a must and such students should not leave the campus during Test dates (please refer to the guidelines by Timetable and Exams in this regard). No make-up will be given by just producing some medical prescription. The above mentioned rules will be followed very strictly.

7. Course Notices

All notices pertaining to this course will be displayed on the CMS/CS&IS Notice Board.

8. Chamber Consultation: To be announced.

9. Academic Honesty and Integrity Policy: Academic honesty and integrity are to be maintained by all the students throughout the semester and no type of academic dishonesty is acceptable.

Instructor-In-Charge, CS F213