

BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI-HYDERABAD CAMPUS
INSTRUCTION DIVISION, FIRST SEMESTER 2016-17
COURSE HANDOUT (PART II)

Date: 01/08/2016

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 : Mrs. Prafulla Kalapatapu, Mrs. Neha Singh, and Mr. Muthukumaran

Course Description:

Object Orientated Concepts; Basics of Object model; Encapsulation, 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; Object Oriented Applications.

Objectives:

- Provide the student with an understanding of the need for Object Oriented Paradigm.
- Understand the basics of object model like- Classes, Objects, Associations, Operations/Methods, and Encapsulation etc.
- Understand the other important features of object orientation, like- Abstraction, Inheritance, and Polymorphism, Serialization etc.
- Understand the concepts like- Multithreading, Exception handling, IO and Event handling.
- Gain basic knowledge on Object Oriented Design methodology, and notations in modeling.
- Learn the concept and use of important Object Oriented Design Patterns.
- Understand the concepts of object orientation mentioned above, by hands-on experience through working on Java during the lab sessions.

Text Book:

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

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.

Lecture Schedule:

Lecture No.	Learning Objectives	Chapters
1-3	Introduction to Object Oriented Concepts and Principles	T1.Ch.2 ; R2-Ch.1 and Class notes
4-8	Fundamentals of 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	Classification and Abstraction mechanism	T1.Ch.2; R2- Ch.4;
18-20	Inheritance and Polymorphism	T1 –Ch.6; R1.Ch.7&8
21	Object type casting and Reflection	R1. Ch.3 & Class notes
22-25	Multithreading and Synchronization concepts	T1 –Ch.9; R1- Ch.11; and class notes
26-28	Exception Handling essentials	T1.Ch.1.8; R1-Ch.10
29-31	I/O Streams	R1- Ch.13 and Ch.19
32	Object Serialization	T1.Ch.7.5; R2- Ch.19
33-36	Process of Object Oriented Design	T1- Ch.2&3; R2-Ch. 2-5; R3 for notations; and Class notes
37-38	Object Oriented Design Patterns	T1- Ch.5&11
39-40	Sample Applications- to understand the object orientation and features from the application perspective.	Class notes & PPTs
41	Object oriented Programming languages (overview)	R2-Appendix; and Class notes
42	Conclusion	

Evaluation

Component	Mode	Date & Time	Weightage
Test-1	Closed Book	08-09-2016, 2-30 to 3-30PM	20%
Test-2	Closed Book	25-10-2016, 2-30 to 3-30PM	20%
Online/Lab	Open Book	27-11-2016	20%
Comprehensive	Closed Book	06-12-2016 AN	40%

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 ID in this regard). No make-up will be given by just producing some medical prescription. The above mentioned rules will be followed very strictly.

Course Notices

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

Chamber Consultation

To be announced.

**Instructor-In-Charge,
CS F213**