

GUJARAT TECHNOLOGICAL UNIVERSITY

SUBJECT NAME: Advanced Object Oriented Programming (Core I)

SUBJECT CODE: 3715301

Semester I

Type of course:

Prerequisite:

1. Fundamental concepts of object oriented programming

Rationale:

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
			C	ESE (E)	PA (M)	PA (V)	PA (I)	
								ESE
3	2	0	4	70	30	30	20	150

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment;

Content:

Sr. No.	Content	Total Hrs	% Weightage
1	Data Types, Operators and Language, Constructs, Classes and Objects	6	10
2	Inner Classes and Inheritance, Interface and Package	6	10
3	TCP and Datagram sockets, Servlets, Java Server Pages, Remote Method Invocation, JDBC, JavaBeans	6	10
4	Enterprise Java Beans, Introduction to Struts Framework	7	20
5	Introduction to hibernate, HQL, J2EE (struts) and hibernate, Introduction to Spring Framework	7	20

Text Books:

1. Ali Bahrami, - "Object –Oriented System Development" - Mc Graw Hill.
2. Patrick Naughton, Herbert Schildt – "The complete reference-Java2" – TMH
3. Java Server Programming (J2EE 1.6 Edition) Black Book by Dream tech Software Team
4. Spring In Action:Covers Spring 3.0 3rd Edition by Craig Walls/Dream Tech

Reference Books:

1. Java 6 and J2EE 1.5 by Kogent/ Dreamtech
2. Bruce, Foundations of Object Oriented Languages, PHI
3. Java, C++ & Object Oriented Programming, PHI
4. Mahapatra: Introduction to System Dynamic Modelling, Universities Press
5. Rambaugh, James Michael, Blaha - "Object Oriented Modelling and Design" – Prentice Hall India/ Pearson Education

Course Outcome:

Student will

1. Be able to develop, debug and test java programs for an emulated in java environment.
2. will be able to enhance their knowledge in JAVA

List of Experiments: (with Open Ended Problems)

1. Create a program to perform following task
 1. Copy an text file from c:\ to d:\
 2. Download a zip/pdf from website URL
 3. Store Employee information (name, id,salary) in a file with extension .emp
2. Create a Multiclient TCP Socket based client and Server application to upload a file from client to server and a save it on particular folder on server
3. Create a multithreaded application in java to download multiple files from server simultaneously. File names are stored in a array of Strings
4. Create a Console base Application using JDBC to save Employee information on in MySQL database to implement following functionality

Employee information – name, id, pf, basic_salary and department_id
 Department – Department_name, department_id, manager_id(employee id of department head)

Display a menu to user to perform the following taks

 - 1) Add Department
 - 2) Add Employee
 - 3) Display list of employees of a department
 - 4) Display total net_salary of employee using formula basic_salary+pf
 - 5) Display sum of salaries department wise
5. Convert the above application(question 6) in RMI based client server application. Display menu at Client and manage database at Server
6. Create a Website using JSP and Servlet provide following functionality with proper session tracking(Login/Logout) :
 - a. Common Login page for Student/Faculty/Admin
 - b. Admin can
 - i. add Student (rollno, name, course)
 - ii. add faculty(name,subjects)
 - iii. add subjects
 - iv. can associate student with subjects
 - c. Faculty can
 - i. Give marks to a student for a subject

- d. Student can view his marksheet
7. Develop an Online Complaint management system which manages complaints lodged by employees of an organization With following functionality Using JSP,JDBC and Struts framework and proper session tracking.
- a. Common Login page for Employee and Admin
 - b. Admin can add employee
 - c. Admin can view complaints lodged by employees
 - d. Admin can change the status of complaint from open to close
 - e. Employee can add/lodge a complaint
 - f. Employee can delete/view his own complaints

A complaint has

- description,
 - complain type
 - lodged by(employee id)
 - status(Open/close)
 - datetime
8. Replace JDBC in above application(question 7) with Hibernate.
9. Create UDP Socket base application to send an image from client to server in packet of size 256 bytes each and collect the packets and save image on server.
10. Create a Insert/Update/Delete/Select implementation using JDBC with Spring for Employee information(id,name,salary)

Use the reference link: http://www.tutorialspoint.com/spring/spring_jdbc_framework.htm

List of Open Source Software/learning website:

- 1. NetBeans IDE**
- 2. JDK (Latest Version)**