ITE~~323~~	**Network Programming**	L	T	P	C
		3	0	0	3
Prerequisite	~~ITE213~~				
Objectives	• The students shall be able to learn JAVA programming to share data across Internet for File transfer, Software updates etc., and accomplish many Network programming tasks.				
Outcomes					
Unit 1	**Introduction**				12
	Why networked Java What can a network program do, Security Basic network concepts: Networks, The layers of a network, IP,TCP and UDP, The Internet, The client/server model, Internet Standards, Basic Web concepts: URLs, HTML, SGML, and XML, HTTP,MIME Media types, Server Side Programs.				
Unit 2	**Threads**				9
	Running Threads, Returning Information from a Thread, Synchronization, Deadlock, Thread scheduling, Thread pools, Looking Up Internet Addresses: The InetAddress Class,Inet4Address and Inet6Address,The Network Interface Class, Some useful programs, URLs: The URL class, URL encoder and URL decoder Classes, URL class, Proxies, communicating with Server Side Programs Through GET, Accessing Password-Protected Sites.				
Unit 3	**Sockets for Clients**				9
	Socket Basics, Investigating Protocols with Telnet, The Socket Class, Socket Exceptions, Socket Addresses, Examples, Sockets For Servers: The Server Socket Class, Some Useful Servers, Secure Sockets: Secure Communications, Creating Secure Client Sockets, Methods of SSLSocket Class, Creating Secure Server Sockets, Methods of the SSLServerSocket Class.				
Unit 4	**UDP Datagrams and Sockets**				11
	The UDP protocol, The Datagram Packet Class, The Datagram Socket Class, Some useful Applications, Datagram Channel, URLConnections: Opening URL Connections, Reading Data from a server, Reading the Header, Configuring the Connection, Configuring the Client Request HTTP Header, Writing Data to a server, Content Handlers, The Object Methods, Security Considerations for URLConnections, Guessing MIME Content Types, HttpURLConnection, Caches, JAR URLConnection.				
Unit 5	**Remote Method Invocation**				9
	What is RMI? Implementation, Loading Classes at Runtime, the java.rmi Package, the java.rmi.registry Package, the java.rmi.server Package, The JavaMailAPI: What are Java Mail API, Sending Email, Receiving Email, Password Authentication, Addresses, The URLName Class, The Message Class, the Path Interface, Multipath Messages and File Attachments, MIME messages, Folders.				
Text Books	1. Elliotte Rusty Harold "JAVA Network Programming" 3rd Edition published by Sharoff Publishers and Distributors Pvt. Ltd, Mumbai, 2005.				
References	1. David Reilly, Michael Reilly. "Java Network Programming & Distributed Computing", Published by Addison-Wesley. ISBN: 0201710374				
MoE	CAT, Quiz, Seminar, Assignment, Term-End Examination				
Recommended by the Board of Studies on					
Date of Approval by the Academic Council					

~~ITE324~~	**Networking Lab**	L	T	P	C
		0	0	4	2
Prerequisite	ITE324				
Objectives					
Outcomes					
Exercises	1. Write a program to display the server's date and time details at the client end. 2. Write a program to display the client's address at the server end. 3. Write a program to implement an echo UDP server. 4. Write a program to develop a simple Chat application. 5. The message entered in the client is sent to the server and the server encodes the message and returns it to the client. Encoding is done by replacing a character by the character next to it i.e. a as b, b as c …z as a. This process is done using the TCP/IP protocol. Write a program for the above 6. The message entered in the client is sent to the server and the server encodes the message and returns it to the client. Encoding is done by replacing a character by the character next to it i.e. a as b, b as c …z as a. This process is done using UDP. Write a program for the above 7. Write a program to display the name and address of the computer that we are currently working on. 8. Write a program to capture each packet and to examine its checksum field. 9. Write a program to create a daemon process. 10. A server should run for 10 secs and generate numbers continuously. The client connecting to it should read data and find out the sum of the data thus read. Write a Java program to implement this scenario. 11. Write graphical user interface for the sales database which lists all the customer names in one choice box and all products in another. When the user selects a customer name and product and press the "submit" button, display a list with the customer name, product, quantity, and date of order by the customer with the name of that product. Use prepared statements whenever possible. 12. Design and populate a database for a car rental system. Allow the client to check the availability of a category of car and to make reservation. 13. Write program to illustrate the following: i). Remote object interaction. ii). File downloading and uploading.				