INTERNET AND INTRANET [CT 754] - SYLLABUS | IV/II

INTERNET AND INTRANET [CT 754] - SYLLABUS | IV/II

Lecture : 3 Year : IV
Tutorial : 1 Part : II
Practical : 1.5

Course Objectives:

The focus of this course is on the practical application of internetworking technologies to private intranets for information management and public internets for electronic commerce students will learn theoretical details, strategies for designing sites, techniques for creating their technical infrastructures, methods for developing content, and techniques for site deployment and management. Students will develop various intranet and internet applications and setup servers as part of practical session.

1. Introduction [5 hours]

1.1. History and Development of Internets and Intranets
1.2. IANA, RIR/NIR/LIR and ISPs for internet number management
1.3. Internet Domain and Domain Name System
1.4. Internet Access Overview
1.5. Internet Backbone Networks: Optical Backbone, Marine Cables, Teleports, Satellite and Terrestrial Links

2. Internet Protocol Overview [6 hours]

2.1. TCP/IP and the IP Layer overview
2.2. IPv4 and IPv6 Address Types and Formats
2.3. IPv4 and IPv6 Header Structure
2.4. Internet RFCs

3. Protocols and Client/Server Applications [6 hours]

3.1. Standard protocols: SMTP, E-mail Message (RFC22),PGP, POP, IMAP, HTTP, FTP
3.2. N-Tiered Client/Server Architecture
3.3. Universal Internet Browsing
3.4. Multiprotocol Support

4. HTTP and the Web Services [8 hours]

4.1. HTTP, Web Servers and Web Access
4.2. Universal naming with URLs
4.3. WWW Technology: HTML, DHTML, WML, XML
4.4. Tools: WYS/WYG Authoring Tools
4.5. Helper applications: CGI; PERL, JAVA, JAVA SRIPTS, PHP, ASP, .NET Applications
4.6. Introduction to AJAX (Programming)
4.7. browser as a rendering engine: text, HTML, gif and jpeg

5. Designing Internet Systems and Servers [8 hours]

5.1. Designing of Internet System Network Architecture
5.2. Choice of platforms
5.3. Server Concepts: WEB, Proxy, RADIUS, MAIL
5.4. Cookies
5.5. Load Balancing: Proxy Arrays
5.6. Server Setup and Configuration Guidelines
5.7. Security and System Administration Issues, Firewalls and Content Filtering

6. Internet and Intranet Systems Development [6 hours]

6.1. Introductions
6.2. Benefits and drawbacks of intranets
6.3. Protocols, Structure and Scope of Networks
6.4. Intranets Resource Assessments: Network Infrastructure, Clients and Server Resources

6.5. Intranet Implementation Guidelines
6.6. Content Design, Development, Publishing and Management
6.7. Intranet Design with Open source Tools: DRUPAL, JUMLA
6.8. Tunneling Protocols: VPN

7. Internet and Intranet Applications [6 hours]

7.1. General Applications: Email, WWW, Gopher, Online Systems
7.2. Multimedia and Digital Video/Audio Broadcasting: Video/Audio Conferencing, Internet Relay Chat (IRC)
7.3. Broadband Communications, Policy, xDSL and Cable Internet
7.4. VoIP, FoIP and IP Interconnection
7.5. Datacenters and Data warehousing, packet clearing house
7.6. Unified Messaging Systems
7.7. Fundamental of e-Commerce
7.8. Concept of Grid and Cloud Computing

Practicals

Lab1: Web programming Skill (HTML, PHP, ASP..) and WEB development Tools.
Lab2, 3, 4: Web Programming with DB Connection and Ajax programming.
Lab5,6: Internet & Intranet Site Development (personal/corporate web development)
Lab 7: Web & DNS Server Installation, Configuration and Hosting.
Lab8: presentation of project work developed on lab 5, 6 & 7.

References

1. Computer Networks; Andrew S. Tanenbaum, Prentice Hall
2. Internet and Intranet Engineering; Daniel Minoli, mGraw-Hill
3. Internetworking with TCP/IP; Comer, D.E and Stevens
4. RFC 821/822/1543/1738/2068

Evaluation Scheme:

The questions will cover all the units of the syllabus. The evaluation scheme will be as indicated below:

Chapter	Hour	Marks Distribution*
1	5	10
2	6	10
3	6	10
4	8	15
5	8	15
6	6	10
7	6	10
Total	45	80