SECURE PROTOCOL DESIGN
(ELECTIVE – 1)

Course code: 13CS2205

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Pre requisites: Network security, Computer Networks.

Course Educational objectives:
The main objective of this course is that to explore various protocols and design of various protocols with deeper security.

Course Outcomes:
By the end of the course Student will
1. Get the exposure to various protocols.
2. Gain knowledge on various secure mechanisms through set of protocols.
3. Efficiently design new set of protocols.
4. Learn Security issues and overcome means with protocols.

UNIT – I
OSI:ISO Layer Protocols:-Application Layer Protocols-TCP/IP, HTTP, SHTTP, LDAP, MIME,-POP& POP3-RMON-SNTP-SNMP. Presentation Layer Protocols-Light Weight Presentation
Protocol Session layer protocols.

UNIT – II
RPC protocols-transport layer protocols-ITOT, RDP, RUDP, TALI, TCP/UDP, compressed TCP. Network layer Protocols – routing protocols-border gateway protocol-exterior gateway protocol-internet protocol IPv4- IPv6- Internet Message Control Protocol- IRDP-Transport Layer Security-TSL-SSL-DTLS

UNIT – III
Data Link layer Protocol – ARP – In ARP – IPCP – IPv6CP – RARP – SLIP .Wide Area and Network Protocols- ATM protocols – Broadband Protocols – Point to Point Protocols – Other
WAN Protocols- security issues.

UNIT – IV
Local Area Network and LAN Protocols – ETHERNET Protocols – VLAN protocols – Wireless
LAN Protocols – Metropolitan Area Network Protocol – Storage Area Network and SAN

UNIT – V
Protocols -FDMA, WIFI and WIMAX Protocols- security issues. Mobile IP – Mobile Support
Protocol for IPv4 and IPv6 – Resource Reservation Protocol. Multi-casting Protocol – VGMP –
IGMP – MSDP .Network Security and Technologies and Protocols – AAA Protocols – Tunneling Protocols – Secured Routing Protocols – GRE- Generic Routing Encapsulation – IPSEC – Security.

TEXT BOOKS:

1. Jawin: "Networks Protocols Handbook", 3rd Edition, Jawin Technologies Inc., 2005.

2. Bruce Potter and Bob Fleck : "802.11 Security", 1st Edition, O'Reilly Publications, 2002.

REFERENCES:

1. Ralph Oppliger :"SSL and TSL: Theory and Practice", 1st Edition, Arttech House, 2009.

2. Lawrence Harte: "Introduction to CDMA- Network services Technologies and Operations", 1st Edition, Althos Publishing, 2004.

3. Lawrence Harte: "Introduction to WIMAX", 1st Edition, Althos Publishing, 2005.