

**Faculty Development Programme
Supported by
VGST, GoK and VTU, Belgaum**

REGISTRATION FORM

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Desig. & Dept. :

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Phone:FAX:

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Is Accomodation Required:

Signature of the
Participant

Signature of the
Sponsoring Authority

Patrons

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- VTU, Belgaum
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- Prof. V Muralidharan, Professor, Dept. of CSE

Coordinators

- Dr. Jibi Abraham, Asst. Professor, Dept. of CSE
- Anita Kanavalli, Asst. Professor, Dept. of CSE
- Dr. Srinivasa K G, Asst. Professor, Dept. of CSE

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- Chetan M, Lecturer, Dept. of CSE

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**FACULTY DEVELOPMENT PROGRAMME
Supported & Catalyzed by**



Government of Karnataka
Vision Group on Science and Technology
Department of Information Technology,
Biotechnology & Science and Technology

Organized by
M S Ramaiah Institute of Technology,
Bangalore
&
Visvesvaraya Technological University,
Belgaum

Communications and Networking
21st to 26th Dec- 2009

Chief-Coordinator – Prof. V Muralidharan

Coordinators
Dr. Jibi Abraham, Anita Kanavalli, Dr. Srinivasa K G

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About the Institution

M S Ramaiah Institute of Technology (MSRIT), Autonomous Institute affiliated to Visvesvaraya Technological University is a pioneer in the field of technical education established in the year 1962 by a great educationist Dr. M. S. Ramaiah. MSRIT has created a landmark in the history of technical education of our country to impact much needed engineering education and has carved out for itself a big name all over the country and is recognized as a premier educational institution in India. It is NBA accredited institution which is also ISO 9001:2000 certified for quality in technical education. The college got academic autonomy in the year 2007.

About the Department

The Department of Computer Science and Engineering was established in the year 1984. M S Ramaiah Institute of Technology was one of the few Institutes in Karnataka to introduce Computer Science and Engineering (CSE) in the curriculum. The post graduate programme was started in the year 1999. The department is recognized as a research centre by VTU since 2002. The department has highly qualified and experienced faculty in areas like Embedded Systems, Networking, Mobile Computing, Cryptography, Artificial Intelligence, Data Mining, Parallel and Distributed Processing, Digital Signal Processing and Digital Image Processing.

About the Conference

The object of the course is to give a holistic view of the courses on Data Communications and Computer Networking. The basic objective of the course is to emphasize on both theoretical and practical aspects of Multiple co-located hosts: addressing, LAN access methods; CSMA/CD, Ethernet, wireless LANs; Simple performance models; WAN access methods – PPP, Remotely located hosts: addressing, interconnection of LANs; repeaters, bridges, routers; IP: routing protocols (distance vector, link state packet routing); congestion control concepts and mechanisms (choke packets, leaky bucket, token bucket); IPv4,

CIDR (Classless Interdomain routing), End-to-end reliability: the end-to-end argument; protocols - TCP, UDP, RPC; connection establishment, flow control, Application protocols for email, ftp, web, DNS, Advanced topics: Wireless networks and sensor networks; network management systems; security threats and solutions; IPv6; Multimedia applications and its impact on networking.

Course Schedule (Tentative):

Day 1: Network Basics (21st Dec. 2009)

Session 1: Fundamentals Computer Networks, Applications, types of networks, wired, wireless, switched, service models, layering

Session 2: Communication media, types of links, performance measures

Session 3: Link layer services: Addressing, Framing, Error Control, Media Access CSMA CD, CA

Session 4: Introduction to Wireshark and OpNet Simulator

Day 2: Direct Link Networks (22nd Dec. 2009)

Session 1: Switching topologies, LAN switches, Ethernet, VLAN

Session 2: Connecting small - medium networks, forwarding, IPv4 and v6

Session 3: Lab: Designing VLANS, Web based view of network using packet tracer using Wireshark, Analysis of ARP

Session 4: Lab: OpNet Simulator exercises on setting up switched LANs using switches and hubs.

Day 3: Internetworking (23rd Dec. 2009)

Session 1: routing protocols, Dealing with scale: Subnetting, CIDR, Router configuration

Session 2: Backbone Technologies, Multicasting, ICMP, DHCP, NAT

Session 3: Lab: Configure IP addresses and Subnet Mask, Use Ping Utility and observe ARP working Router configuration using Windows NT, Tracert and Route commands, ICMP, IP, DHCP using Wireshark

Session 4: Lab: setting up a network by configuring routing protocol (RIP, OSPF) by using OpNet

Day 4: End-to-End networking and Applications (24th Dec. 2009)

Session 1: Transport layer services, multiplexing, reliable data transfer, TCP, UDP, Congestion Control Socket Programming

Session 2: Network Applications: DNS, HTTP, DHCP, SMTP, Telnet, FTP, SNMP

Session 3: Lab: Analysis of UDP, TCP, HTTP using Wireshark

Session 4: Lab: setting up a network that utilizes TCP/UDP by using OpNet Simulator, analyze FTP sessions, setting up a network that carries various applications

Day 5: Advances in Networking and Research Issues (26th Dec. 2009)

Session 1: Wireless Networks, Mobile Adhoc Networks, Sensor networks, applications, protocols, Multimedia Networks, research issues

Session 2: Simulation Environments for Research in Networking

Session 3: Network Security, research issues

Session 4: Demonstration of Hardware based Network Monitoring System

Course Fee: The entire faculty from AICTE approved VTU colleges in Bangalore Region need not pay course fee and the programme is fully free.

Resource Persons: The resource persons are drawn from academia and industry.

Address for Communication

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