Descriptions of Courses

TE523 Info-Com Design Lab

This course consists of various communication topics such as service, wired network, wireless network, transmission and system software. The contents and objectives of each field are as follows.

- Transmission: Data transmission experimentation is done based on modulation / demodulation, channel coding and equalizer.
- Network: Circuit switching and router switching experimentations are done. Simple protocols are designed according to standards and are verified through SDT. Moreover, how to use OPNET and NS-2 simulator is introduced and the operation of CDMA mobile communication system is investigated.
- System software: Routing procedures in Linux system are studied and simple network device driver is designed.
- Service: Softwares for speech recognition and network management are designed.

TE503 Telecommunication Management

This course provides an overview of telecommunication and Internet economics, policy and management. The goal is to cover the history of telecommunications, regulation and competition in telecommunication industry, access / interconnection pricing and international settlements. Internet economics and the pricing of the Internet and information goods are also covered.

TE504 Telecommunication Networks

Topics covered in this course include layered network architecture, open system interconnection (OSI), and various network protocols, such as Ethernet, Token Ring, FDDI, DQDB, X.25, Frame Relay, SMDS, Internet, telephone network, signaling network, and ATM network.

TE628 Internet Server

This course reviews the current state-of-the-art of today's Internet and Web architecture, describes the challenges facing the Web, and discusses the emerging approaches. In particular, the course will cover issues around Internet traffic characterization; protocols; web server performance; server clustering; caching architectures; quality of service (QoS) on the web; and system support for e-commerce. The goal of the course is to gain understanding of the current research issues and a vision of the next generation web architecture.

TE630 Internet Communication

Internet architecture, protocols and applications are studied. In internet architecture, network types that consist of internet, related organization and internet services are studied. In internet protocol, the internet protocol such as IP, TCP and UDP which are needed to provide the internet services is surveyed. Internet application services are also studied.

TE520 Telecommunication Software Design

The design and implementation of physical layer, data link layer and network layer protocols are explained. Also, client / server programming using UNIX and windows sockets is studied. Moreover, the architecture of SDR based terminals is investigated. Finally, this course covers protocol design, verification and optimization.

TE526 Telephone and Internet Telephony Networks

This course covers overall aspects of telephone networks and newly emerging IP based next generation networks (NGN). Topics include overview of telephone networks, traffic theory, control and software system, performance evaluation of switching systems, transmission systems, signaling systems, intelligent systems, voice-over IP, IP signaling protocols, and next-generation networks (NGN).

TE535 Networking Design and Programming

This introductory networking course is based on the Cisco Networking Academy Program (CNAP). It provides knowledge and practical experience with the design, configuration, programming, management, and maintenance of computer networks. Topics cover TCP / IP architectures, cabling, Ethernet, routing, TCP / IP protocols, IP addressing, routing protocols, WANs, network troubleshooting, and access control lists.

TE561 Teletraffic and Queueing Theory

This course covers the fundamentals of teletraffic and queueing theory and their applications to the performance analysis of telecommunication systems and protocols, e.g. the Internet.

TE611 RF System Design

The overall goal of this course is to design, analyze and optimize radio frequency and microwave systems. Topics include transceiver architectures, receiver and transmitter topologies along with their merits and drawbacks.

TE620 Digital Information Processing

For multimedia transmission and applications over IP networks, it is required to have digitization, packetization and decoding for continuous media such as audio and video. This course covers source coding and packetization for speech, audio and video, error resilience coding and error concealment for erroneous transmission or loss, and source rate control for variable bitrate channels.

TE622 Broadband Networks

This course provides students with a systematic, up-to-date introduction to the fundamental concepts, challenges, and state-of-the-art developments in WDM optical networks. Coverage includes: WDM advantages, WDM components, WDM optical network architectures (LAN, MAN, WAN), routing and wavelength assignment, wavelength-convertible networks, wavelength rerouting, virtual topology design and reconfiguration, network survivability and provisioning, optical multicast routing, optical Internet and broadband access network.

TE624 Personal Communication Systems

Topics covered in this course include overview of various mobile communication systems, cellular system architecture, access technologies, radio propagation, fading, antennas, diversity, link analysis, CDMA spread spectrum systems, physical layer, data link layer, network layer protocol, traffic control, mobile communication network architecture, and 3G systems.

TE626 Wireless Internet

Wireless internet such as cellural based mobile internet, and mobile internet for pedestrian in urban area, and fixed wireless internet is introduced and explained in detail. Also, the operational principle, protocol structure and protocol function of each internet are investigated. Moreover, the performance of related system and protocol is analyzed.

TE650 Telecommunication Network Optimization

This course mainly deals with network system such as Industrial Logistics System, Telecommunication System, Software Service System, and Distribution System and so on. Besides, for the purpose of application to the real world, this course also deals with development and analysis of algorithm of Shortest Routes, Minimum Cost Flow, Traveling Salesman Problem and Facility Location.

TE661 Network and Information Security

This course covers computer security management, security policy, security in wired-line networks, security in

wireless networks. Students learn encryption, authentication, integrity, access control, digital signature, computer virus, national communication security, and various case studies.

TE673 Multimedia Services
This course covers basic protocols and system architectures for multimedia applications and services over Internet. The topics include VoIP, streaming and conference applications for real-time media such as voice and video, and the standard terminal systems for multimedia communications

TE743 Network Management
This course covers the overall aspects of functional model, information model, and relational model in network management. The more detailed contents include network planning, network initialization, configuration management, fault management, usage accounting, security management, performance management, and finally network management protocols.

TE745 Service Platform
This course deals with overview of intelligent networks, existing communication network, signalling network, the concept of next generation intelligent network. It also includes service switching, service control, specialized resources as main elements of intelligent network. And it contains the interworking between intelligent network and mobile network, the interworking between intelligent network and internet, and the trend of next generation intelligent network.

TE764 Internet Terminal System
This course deals with the overall aspect of internet terminal systems, layered protocol technology, Mobile IP protocol, and software platform structure as well as software technologies. Also, the SDR technology, high quality voice / video coding technology, and systems and services of next generation internet terminal are treated.

TE800 Special Topics in Telecommunications
This course covers current, hot technical issues in telecommunications as a special topic course. Some experts are invited to teach these special topics and discuss them with students.

TE960 M.S. Thesis
This course covers thesis work done under the supervision of the student's advisor.

TE965 Individual Project for M.S. Students
This course is open to M.S. students who want to apply some technical theory to telecommunication systems or to have some experimental work as an individual research project. This course requires an approval from the advisor.

TE966 M.S. Seminar
This M.S. seminar course covers current research activities in various telecommunication areas. Internal and external experts are invited to talk about these technical issues.

TE967 M.S Thesis Seminar
This course is open to M.S. students preparing for a M.S. thesis. Students present and discuss their thesis work. This course also covers thesis writing.

TE980 Ph.D. Dissertation
This course covers Ph.D. dissertation work done under the supervision of student's advisor.

TE985 Individual Project for Ph.D. Students

This course is open to Ph.D. students who want to apply some technical theory to telecommunication systems or to have some experimental work as an individual research project. This course requires approval from the advisor.

TE986 Ph.D. Seminar

This Ph.D seminar course covers current research activities in various telecommunication areas. Internal and external experts are invited to talk about these technical issues.