ADVANCED GRADUATE CERTIFICATE

Management of Broadband Communications & Converged Networks

A multi-disciplinary educational approach to the opportunities and challenges of broadband communications in business & technology

STEVENS
Institute of Technology

THE PROGRAM

Broadband communications is the foundation for the new wave of communications and network infrastructure and the basis for emerging services. Technical and business professionals are increasingly called upon to understand, plan and manage complex technological environments. Advances in multiple methods of providing broadband access, such as cable, xDSL, FTTx, and wireless, the introduction of a converged core network architecture and the role of the IP Multimedia Subsystem (IMS), and the emergence of new IP-based services, present tremendous opportunities and challenges. Broadband and content service providers need to plan for converged networks delivering multi-media communications and services. Service creation, delivery, and management as well as the enabling protocols and standards are key concepts to be mastered.

This four course concentration consists of courses which examine broadband technologies and services, service management in a broadband environment, the impact of the changing regulatory environment on the industry and the industry structure and strategy.

DEGREE OPTIONS

Four courses are necessary to earn the graduate certificate in Management of Broadband Communications & Converged Networks. They are also applicable to a 4 course concentration in the 12 course Master of Science in Telecommunications Management or the 20 course MBA. The Ph.D. program is available for qualified individuals seeking advanced education and research opportunities.

ADMISSION REQUIREMENTS

Students must have a bachelor's degree with a 3.0 GPA, complete an application, two letters of recommendation and supply their original undergraduate transcripts.

Previous experience in EE, communications engineering, TM 601 & TM 610, or equivalent required.

THE COURSES
-FOUR COURSES FOR THE CERTIFICATE

Broadband Networking: Services & Technology - This course provides a broad and comprehensive study of the technologies enabling broadband services and networking. High-speed network access technologies, core-network architectures, and the broadband service environment are the focus of this course. The broadband access technologies of Digital Subscriber Line (DSL), cable modem service, optical fiber-based access, and the high-speed wireless technologies of WiFi and WiMAX are examined and differentiated. The core-network technologies of MPLS, RSVP, DiffServe, as well as the services-converging IP Multimedia Sub-system (IMS) are discussed and studied as enabling technologies for broadband services. An overview is provided of key broadband services: VoIP, IPTV, streaming video and Video on Demand. The course concludes with a discussion of the opportunities and threats posed to service providers and the communications industry by the emerging disruptive technologies of broadband networking.

Broadband Service Management - The success of any broadband network is based on its ability to deliver a desired service with specific service requirement referred to as a Service Level Agreement (SLA). The SLA, whether it is with an operator, infrastructure vendor, Third Party Vendor (3PV) or customer, all have a specific Key Performance Indicators (KPI) associated with them. The ability to define, identify and manage KPI's associated with a broadband network SLA requires a thorough understanding of the broadband ecosystem. The course will therefore present and review a broad range of key topics and criteria that focus on the various technical and managerial aspects required to implement and sustain a network related to SLA management.

Redefinition of the Communications Industry: Changes in Industry Structure, Technology, and Globalization - What is the telecommunications industry today? The telecommunications industry is undergoing fundamental redefinition through a combination of marketplace, financial and technological forces. This course explores the major shifts in business models, industry players and technological disruptions, which together reshape the converged industry. Models of competitive industry structure and strategy are studied and provide the framework for examining the fundamental changes in this industry. Students will outline the transformation of a telecommunications sector, customer needs and market value, competitive dynamics, and the technological perspective of the architecture and specific technologies enabling the change.

Regulation and Policy in the Communication Industry - Providing a framework to analyze and interpret governmental policies on telecommunications at the local, state, national, and international levels. Review the history of telecommunication evolution, discuss the objectives of the US telecom policy and the concept and evolution of Universal Service pre- and post-divestiture environments. Discuss the 1996 Communications Act, its implementation and current and evolving issues related to wireless, VOIP and broadband technologies and services.

Additional course options are available from the electrical engineering and computer science departments. Please consult with your assigned faculty advisor.

FOR FURTHER INFORMATION

Additional information may be obtained by visiting our web site at
http://Howe.Stevens.edu
or by contacting:
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