

ADVANCED GRADUATE CERTIFICATE

Management of Wireless Networks



THE PROGRAM

Responding to the accelerated worldwide demand for reliable and robust wireless communications, this four-course graduate certificate offers you a rich panorama of principles, architectures, and standards. Courses focus on significant opportunities and obstacles facing today's rapidly expanding mobile enterprises, not only in the US, but also around the world. You are introduced to the global regulatory environment and critical managerial decisions. You become familiar with key technology concepts, CDMA systems, radio resource management, services and applications, and next-generation standards. Emerge as a skilled wireless communication manager who appreciates performance requirements coupled with the delivery of top quality service.

DEGREE OPTIONS

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

Courses in this program have the graduate prereqs of TM601, TM605, TM610, and MGT600 or equivalent.

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.



THE COURSES

- SELECT 3 PLUS TM615

TM615 Wireless Networking and Mobile Computing - Wireless Networking and Mobile Computing - A broad overview of cellular wireless and personal communication networks is provided. Examine fundamentals of mobile wireless networking, including the tradeoff between capacity and coverage in a cellular system and the role of frequency reuse, cell sectorization, and cell splitting. Explore second-generation radio architecture and the multiple access techniques of TDMA and CDMA together with the principal 2G standards (GSM and ANSI-95). Understand the importance of wireless data in mobile wireless networking. The major 2.5G TDMA standards (GPRS and EDGE) are examined and an introduction is provided to 3G systems (cdma2000 and UMTS).

TM616 Global Wireless Industry - Focusing on the global wireless industry and mobile systems, you analyze the complexities facing management today and the hurdles likely to emerge. Probe key management challenges—vastness and segmentation of global markets, uncertainty of regulatory requirements, and the necessity of implementing skillful decision methods. Emerge with a deep appreciation of the industry worldwide-service providers, handset and infrastructure vendors, wireless operators' organization and metrics, standards, trade organizations, and international regulations. Identify steps taken from initial planning, forecasting, budgeting, and ultimately deployment.

TM617 Next Generation Wireless Systems - A broad and comprehensive perspective is provided on the evolution to next generation wireless networks. Third generation (3G) wireless standards are examined along with resource management and quality of service (QoS) in 3G networks. The architecture of the two major 3G cellular-based standards (UMTS and cdma2000) are examined and differentiated. The relationship of cellular wireless networks with wireless LANs (WiFi networks) and wide-area broadband wireless networks (WiMax) are discussed and its impact upon wireless network evolution is examined.

TM618 Performance Management Of Emerging Mobile Wireless Networks - A fundamental understanding of the performance, management and life-cycle analysis of emerging mobile wireless networks. The two major components of a mobile wireless network; the Radio Access Network (RAN) and the core Back-Bone Network (BBN), are described in terms of their major functional elements. This course examines the trade-offs in system performance and management that each of the functional elements has on the system complexity, planning, and ability to meet the required performance objectives of the system. Life-cycle analysis and in particular, the migration of mobile wireless systems to third generation networks is discussed.

TM/EE584 Wireless Systems Security - Wireless systems and their unique vulnerabilities to attack; system security issues in the context of wireless systems, including satellite, terrestrial microwave, military tactical communications, public safety, cellular and wireless LAN networks; security topics: confidentiality/privacy, integrity, availability, and control of fraudulent usage of networks. Issues addressed include jamming, interception and means to avoid them.

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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