Stevens Institute of Technology 2006-2007 Catalog

The Wesley J. Howe School of Technology Management - IV

PH.D. PROGRAM

The School of Technology Management offers a Ph.D. with concentrations in Information Management, Technology Management, and Telecommunications Management. The Howe School also participates in an interdisciplinary Ph.D. program in Telecommunications Management. Within these concentrations, students may focus their research on a number of more specialized areas in which the faculty has strength, including project management, innovation management, and systems integration. The Ph.D. program is primarily designed for full-time students; however, outstanding part-time students may be admitted.

Admission and Graduation Requirements for Doctoral Program

Students may be admitted upon completion of the master's degree or its equivalent. All applicants to the Ph.D. program must submit either a GMAT or GRE score. International students whose native language is not English must also take the TOEFL test. Additional admission criteria for each specific concentration are detailed below.

To obtain a Ph.D., a student needs to complete at least 90 credits (beyond the B.S. level). A maximum of 30 credits is awarded for a master's degree from another school. As part of their coursework, students are required to attend research colloquia (lectures) given at the Howe School by prominent visiting researchers.

When certified for candidacy following completion of the written exams and all coursework, students are required to write and defend a dissertation in a selected area of concentration. It is expected that doctoral dissertations will make significant contributions to the creation of knowledge and the development of theory and practice in a selected area. Please refer to the Graduate Student Handbook for specific requirements.

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Information Management Ph.D. Concentration

The Information Management Ph.D. is designed for highly-qualified students interested in careers in teaching and research in the management of information. Graduates are equipped to pursue careers in either academia or industry.

The program is based on the premise that information systems always exist within the context of a specific organization. Their effectiveness is greatly dependent upon the attitudes towards such systems of the individuals using them. With this in mind, students are required to take courses and seminars in information management and organizational behavior and theory. After completion of their coursework, students are examined in design and development of information systems, information management and organizational theory and behavior, networks and distributed information management, strategic management of information systems, and the management of the information technology organization. Appropriate preparation for this program is a Master of Science degree in Information Systems or its equivalent, Computer Science, and Telecommunications Management, or an M.B.A. Students with insufficient background in database management systems and organization theory may be asked to take introductory master's level courses for no credit toward the Ph.D. degree. In addition to the GRE or GMAT score, applicants are asked to submit with their application a sample of writing such as a published paper, a master's thesis, a semester project paper, or an extensive case study for which they were the principal or sole author.

Typical Schedule for Information Management Ph.D. Students

The schedule below is an example of a schedule for a student with a Master's degree in Information Management or a related field. Core courses are shown in bold.

Year	Fall Semester	Spring Semester
First	**MGT 718 Multivariate Analysis** MGT 704 Research Seminar: Information Management and Organizational Structure and Behavior I Organizational Behavior (Ph.D. level)	**MGT 719 Research Methods** MGT 705 Research Seminar: Information Management and Organizational Structure and Behavior II MIS 850 Research in Managing Information Technology
End of 1st Year	The student's status in the program is reviewed by the Information Management Ph.D. Committee.	
Second	**MGT 730 Design and Analysis of Experiments** MGT 778 Principles of Information Management I Elective	**MGT 790 Innovation Management and Technogenesis** MGT 779 Principles in Information Management II Elective
End of 2nd year	Students are qualified to take Qualifying Examinations in Information Management and Organizational Theory during the third year in program.	
Third	MGT 960 Research in Management One additional class	MGT 960 Research in Management One additional class selected

	selected from the list below	from the list below. Dissertation research
End of 3rd year	Successful Completion of Qualifying Examinations Oral Defense of Dissertation Proposal*	
Fourth	MGT 960 Research in Management Completion and defense of doctoral dissertation	

Note: *Students must complete these requirements before a dissertation proposal can be approved. Doctoral preliminary examinations may be written or oral at the discretion of the committee chair. Courses in bold represent the common core. Guidance on electives should be obtained from the advisor.

Students in the Information Management program select two additional courses or seminars from among the following:

MGT 716/726/736 Seminars: Advanced Topics in Information Management and Technology Management
MGT 777 Information Management Applications of Artificial Intelligence
MIS 710 (formerly MGT 783) Enterprise Systems Management
MIS 730 (formerly MGT 784) Integrating Information System Technologies
MGT 801 Special Problems in Management

Qualifying Examinations

In the third year of the program, after the completion of the first eight courses, students are required to sit for two qualifying examinations, one in Information Management topics and the other in Organizational Theory and Management topics. These examinations are prepared and scored by the faculty involved in teaching the courses during the first two years of the program.

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Technology Management Ph.D. Concentration

The Ph.D. program in Technology Management is designed for highly-qualified students interested in careers in teaching and research. Graduates are equipped to pursue careers in either academia or industry. A candidate for the Ph.D. program in Technology Management is expected to have demonstrated research competency in order to be admitted to the program. Applicants are asked to submit with their application a sample of their research, such as a published paper or a master's thesis, or other research paper for which they were the principal or sole author.

Typical Schedule for Technology Management Ph.D. Students

The schedule below is an example of a schedule for a student with a Master's degree. Core courses are shown in bold.

Year	*Fall Semester*	*Spring Semester*

First	**MGT 718 Multivariate Analysis** MGT 716 Research Seminar elective	**MGT 719 Research Methods** MGT 801A Special Problems
End of 1st Year	Successful completion of Qualifying Exam for TM Ph.D.*	
Second	**MGT 730 Design and Analysis of Experiments** MGT 801B Special Problems in Management Elective	**MGT 790 Innovation Management and Technogenesis** MGT 736 Research Seminar Elective
End of 2nd year	Completion of independent research - for students who did not complete a Master's Thesis* Successful completion of Qualifying exam in Research Methods	
Third	MGT 960 Research in Management	MGT 960 Research in Management
End of 3rd year	Successful Completion of Doctoral Preliminary Examinations Oral Defense of Dissertation Proposal*	
End of 3rd or start of 4th year	Completion and defense of doctoral dissertation	

Note: *Students must complete these requirements before a dissertation proposal can be approved. Doctoral preliminary examinations may be written or oral at the discretion of the committee chair. Courses in bold represent the common core. Guidance on electives should be obtained from the advisor.

Qualifying Examination

This is a comprehensive examination on Technology Management subjects. Students entering the program with a Master's degree are expected to take this examination after completing one year in the program. This examination will be prepared and scored by the Technology Management doctoral committee. The qualifying examination in Technology Management is designed to demonstrate understanding and competence in areas relevant to Technology Management. This examination should be taken at the end of the first year of coursework in the Ph.D. program. This is a one-day exam that covers theory and content in technology management research.

Comprehensive Examination in Research Methods

A second one-day examination in research methods can be taken at any time but it is suggested that students take this exam after completing MGT 718, MGT 719 and MGT 730. This examination covers basic and advanced research methods and basic and multivariate statistics. This examination must be passed before students can begin their dissertation.

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Telecommunications Management Ph.D. Concentration

The Ph.D. program in Telecommunications

Management is designed for highly qualified students interested in careers in teaching and research. Graduates are equipped to pursue careers in either academia or industry. A candidate for the Ph.D. program in Telecommunications Management is expected to have demonstrated research competency in order to be admitted to the program. Applicants are asked to submit with their application a sample of their research, such as a published paper or a master's thesis, or other research paper for which they were the principal or sole author.

Typical Schedule for Telecommunications Management Ph.D. Students

The schedule below is an example of a schedule for a student with a Master's degree in Telecommunications Management or a related field. Core courses are shown in bold. MGT 960 must be taken to satisfy the remaining 24 points of the dissertation requirement.

Year	Fall Semester	Spring Semester
First	**MGT 718 Multivariate Analysis** (or alternative research methods course) MGT 716/726/736 or other electives	**MGT 719 Research Methods** TM 765 Selected Topics in Telecom Management MGT 736 Research Seminar in Telecom or Electives
End of 1st Year	The student's status in the program is reviewed by the Telecommunications Management Ph.D. Committee.	
Second	**MGT 730 Design and Analysis of Experiments** TM/MGT 801A Special Problems Elective	**MGT 790 Innovation Management and Technogenesis** TM/MGT 801B Special Problems MGT 736 Research Seminar Elective
End of 2nd year	Students are qualified to take Qualifying Examinations in Telecommunications Management.	
Third	MGT 960 Research in Management	MGT 960 Research in Management
End of 3rd year	Successful Completion of Qualifying Examination Oral Defense of Dissertation Proposal*	
End of 3rd or start of 4th year	MGT 960 Research in Management Completion and defense of doctoral dissertation	

Notes: *Students must complete these requirements before a dissertation proposal can be approved. Doctoral preliminary examinations may be written or oral at the discretion of the committee chair. Courses in bold represent the common core. Guidance on electives should be obtained from advisor.

Students in the Telecommunications Management program select two additional courses or seminars from among the following:

MGT 716/726/736 Seminars: Advanced Topics in Information/Technology
Management/Telecommunications Management
TM 765 Selected Topics in Telecommunications Management

MGT 710 Risk Management
TM 615 Wireless Network Mobile Computing
TM 617 Next Generation Wireless Networks
TM 618 Performance Management of Wireless Networks

Qualifying Examination

This is a comprehensive examination on Telecommunications Management subjects. Students entering the program with a Master's are expected to take this examination no later than the end of the second year in the program. This examination will be prepared and scored by the Telecommunications Management doctoral committee. The qualifying examination in Telecommunications Management is designed to demonstrate your understanding and competence in areas relevant to Telecommunications Management: fundamentals of telecommunications and quantitative methods for telecommunications; and two areas from the following topics: engineering economics, policy and regulation, wireless, and performance analysis.

Comprehensive Examination in Research Methods

A second one-day examination in research methods can be taken at any time, but it is suggested that students take this exam after completing MGT 718, MGT 719, and MGT 730. This examination covers basic and advanced research methods and basic and multivariate statistics. This examination must be passed before students can begin their dissertation.

Graduate Certificate Programs

The School of Technology Management offers the following programs leading to a graduate certificate of Special Study. Students are required to meet regular admission requirements for the Master's program and complete the courses listed below. Each graduate certificate program is self-contained and highly focused, carrying 12 graduate credits. All of the courses may also be used toward the Master's degree, as well as for the graduate certificate.

Entrepreneurial IT (Trimester)

MGT 679 Management Information Systems (Semester I)
MGT 661 Marketing Online (Semester II)
MGT 662 Legal Issues for the IT Professional (Semester II)
MGT 663 Entrepreneurship in IT (Semester III)

General Management

MGT 600 Managerial Accounting
MGT 690 Organization Theory and Design
MGT 641 Marketing Management
MGT 612 Human Side of Project Leadership

Global Innovation Management

MGT 650 International Business Management

MGT 630 Global Business and Markets
MGT 671 Technology and Innovation Management
MGT 673 Global Innovation Management

Human Resource Management
MGT 647 Legal and Social Environment of Human Resources
MGT 680 Organizational Behavior and Theory
MGT 646 Human Resource Processes: Techniques and Applications
MGT 654 Organizational Change and Development

Advanced Graduate Certificate: Technology Commercialization*
Please note that students would normally take these concentration courses as part of the Master of Science in Management degree, however, students may take them as an Advanced Graduate Certificate with sufficient prior coursework. Students need to have taken either the combination of MGT 600 Managerial Accounting and MGT 607 Managerial Economics or the course MGT 623 Financial Management, as well as MGT 690 Organization Theory and Design.
MGT 671 Technology and Innovation Management
MGT 677 Emerging Technologies
MGT 672 Technology Licensing and Finance
MGT 675 New Product and Service Innovation

Information Management
MIS 630 (formerly MGT 773) Data and Knowledge Management
MIS 620 (formerly MGT 772) Analysis and Development of Information Systems
MIS 750 (formerly MGT 781) Management of Information Technology Organizations
MIS 760 (formerly MGT 780) Information Technology Strategy
For students with little or no information systems professional experience, MIS 501 is a prerequisite for all MSIS courses.

Information Security
MIS 645 (formerly MGT 644) CyberSecurity Principles for Managers
MIS 646 (formerly MGT 645) Enterprise Architecture for Information Security
CS 573 Fundamentals of Computer Security
CS 694 E-Business Security and Information Assurance

Information Technology Outsourcing
MIS 650 IT Outsourcing Governance
MIS 651 Legal Issues in IT Outsourcing
MIS 652 Relationship Management in IT Outsourcing
MGT 654 Organizational Change and Development

IT in Financial Services
MIS 681 (formerly MGT 761) Financial Services Industry Trends and Issues
MIS 682 (formerly MGT 762) Capital Markets
MIS 683 (formerly MGT 763) Financial Services Industry Back Office
MIS 684 (formerly MGT 764) Financial Services

Industry Marketing and Sales

IT in Pharmaceutical
MIS 671 (formerly MGT 721) Pharmaceutical Industry Trends and Issues
MIS 672 (formerly MGT 722) Pharmaceutical Industry New Drug Development
MIS 674 (formerly MGT 723) Pharmaceutical Industry Marketing and Sales
MIS 673 (formerly MGT 724) Pharmaceutical Supply Chain

Management of Wireless Networks
TM 615 Wireless Communication and Mobile Computing
TM 616 Global Wireless Industry
TM 617 Next Generation Networks
TM 618 Performance of Emerging Mobile Wireless Networks

Pharmaceutical Technology Management
MGT 671 Technology and Innovation Management
MGT 681 Managing Pharmaceutical Research and Development
MGT 682 Pharmaceutical Sales, Marketing, and the Supply Chain
and either
MGT 683 Introduction to Pharmaceutical Manufacturing *or*
MGT 684 Regulation and Compliance in the Pharmaceutical Industry

Project Management
MGT 609 Introduction to Project Management
MGT 610 Strategic Perspectives on Project Management
MGT 612 The Human Side of Project Leadership
MGT 614 Advanced Project Management

Technology Management
MGT 609 Introduction to Project Management
MGT 671 Technology Management
MGT 656 Total Quality Management
MGT 657 Operations Management **or**
MGT 641 Marketing Management

Technology Management in the Pharmaceutical Industry
MGT 671 Technology and Innovation Management
MGT 681 Managing Pharmaceutical Research and Development
MGT 682 Pharmaceutical Sales, Marketing, and the Supply Chain
MGT 683 Introduction to Pharmaceutical Manufacturing
MGT 684 Regulation and Compliance in the Pharmaceutical Industry

Telecommunications Management
TM 601 Principles of Applied Telecommunications

Technology
    TM 605 Probability for Telecommunications Managers
    TM 610 Business Information Networks
    TM 612 Regulation and Policy in the
Telecommunications Industry

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STEVENS-FORDHAM EXCHANGE PROGRAM

   Stevens has arranged an exchange program for
Stevens graduate students with the Office of Graduate
Studies of Business Administration at Fordham
University, located at Lincoln Center in New York City.

   This program enables graduate students at Stevens
to enroll in advanced courses in accounting, finance. and
marketing at the Graduate School of Business
Administration at Fordham, Lincoln Center, in New York.
In turn, Fordham M.B.A. students can enroll in selected
computer science and engineering courses at Stevens.
Students register and pay for exchange courses at their
home schools, and grades are sent directly to the
Registrar of the home school. The School of Technology
Management coordinates the program for Stevens.

RESEARCH

Center for Technology Management Research (CTMR)
   Profs. Patricia Hollahan and Edward A. Stohr
   http://howe.stevens.edu/CTMR
   CTMR conducts research on issues related to
innovation and the management of technologies in a
global context. Our mission is to develop concepts and
frameworks to help executives address the challenges of
a rapidly changing technology-based world. Research
results are disseminated through publications, books,
working papers, an annual conference, and sponsor
forums.

   CTMR supports the Stevens Institute of Technology
theme of Technogenesis-the educational frontier
wherein faculty, students, and colleagues in industry
jointly nurture the process of conception, design, and
marketplace realization of new technologies.

Center for Technology Management for Global Development

       Prof. Edward A. Friedman
       http://howe.stevens.edu/global/index.html

   The Center for Technology Management for Global
Development seeks to integrate the concepts and
principles of technology management into strategies for
economic development of nations, regions, and firms. Of
special interest to the Center are research and education
initiatives that promote economic growth in developing
countries. The four areas of activity encompassed by the

Center are: Education Programs, Policy Conferences and Studies, Action Oriented Projects, and Field Initiatives and Research.

These four areas are interrelated, since field efforts and research serve to inform and enrich policy studies and education.

Consortium for Corporate Entrepreneurship

Prof. Peter Koen

http://www.ceconsortium.org/

The Consortium for Corporate Entrepreneurship focuses its research in optimizing the front end of innovation approaches for getting to breakthroughs and knowledge creation, and knowledge flow at the front end.

Its mission is to better understand the Front End of Innovation in order to increase the number, speed, and success probability of highly profitable products entering development. The Consortium offers a collaborative environment, where academia and industry are dedicated to the discovery portion of the front end leading to high profits and breakthrough innovation.

In addition to funding from the consortium members (Becton Dickinson, Ethicon, a division of Johnson and Johnson, ExxonMobil, Kraft, and Honeywell) monies are also received from the National Science Foundation to support the consortium's work in determining best practice in the front end. The consortium works closely with the Industrial Research Institute which is the largest organization of leading industrial companies focused on innovation in the U.S. With support from NSF, the consortium is currently sponsoring the largest best practice survey which is focused on the front end. The consortium supports topical symposia which in the past have included knowledge creation, intellectual property strategy, IT tools used in innovation, and making high-risk portfolio decisions. Upcoming symposia will include one on disruptive business models and virtual teams.

Stevens Alliance for Technology Management (SATM)

Dr. Lawrence Gastwirt, Director

http://howe.stevens.edu/SATM

The Stevens Alliance for Technology Management is an industry-university partnership founded in 1991 under the auspices of the Wesley J. Howe School of Technology Management at Stevens Institute of Technology. Its mission is to help its member organizations adopt and implement more effective practices for the development and application of technology (in the broadest sense of the term) in their businesses.

The Alliance conducts conferences, seminars and roundtable meetings, and sponsors research on various aspects of the management of technology, and has also

sponsored the development of the Howe School's unique Executive Master's degree program in technology management. Current SATM Sponsors, in addition to Stevens, are AT&T, the Columbia University Fu Foundation School of Engineering and Applied Science, DRS, Infineum, ISO, Lucent Technologies, Teknor Apex, and the U.S. Army Research Development and Engineering Center. Other sponsors over the years have included AlliedSignal, Bellcore, Engelhard Industries, ExxonMobil Research and Engineering, GTech, IBM, Merck, Pershing, SIAC, and Unilever Bestfoods.

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Center for Decision Technologies

Prof. Jeffery Nickerson

http://howe.stevens.edu/CDT/index.html

The Center for Decision Technologies focuses on ways of improving human decision making through the integration of information. New technologies are creating new types of decision challenges. For example, increased use of mobile communication and sensing create situations in which we may actually change our movement patterns in order to facilitate our electronic communication.

Past work of the center has included research on transportation planning, mobile ad hoc networks, and human-robot interaction. Current work is focused on the design of processes related to sensor networks with applications to security and emergency response. The center is part of the Howe School of Technology Management, and integrates the work of professors and graduate students in many disciplines in order to solve emerging decision problems.

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