

Stevens Institute of Technology 2006-2007 Catalog

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Graduate Programs - I



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List of Programs

Program areas are in italics; concentrations are indented below the programs.

THE CHARLES V. SCHAEFER, JR. SCHOOL OF ENGINEERING

Chemical, Biomedical, and Materials Engineering Department

- *Biomedical Engineering, M.Eng., Ph.D.*
- *Chemical Engineering, M.Eng., CH.E., Ph.D.*
 - Chemical Engineering
 - Polymer Engineering
- *Materials Engineering, M.Eng., Ph.D.*
 - Microelectronics and Photonics Science and Technology (Interdisciplinary)

Civil, Environmental, and Ocean Engineering Department

- *Civil Engineering, M.Eng.*, C.E.*, Ph.D.******
 - Geotechnical/Geoenvironmental Engineering
 - Hydrologic Modeling
 - Stormwater Management
 - Structural Engineering
 - Water Resources Engineering
- *Construction Management, M.S. (Interdisciplinary)**
- *Environmental Engineering, M.Eng.*, Ph.D.******
 - Environmental Control Process
 - Groundwater and Soil Pollution Control
 - Inland and Coastal Environmental Hydrodynamics
- *Maritime Systems, M.S.**
 - Environmental Engineering
 - Structural Engineering
 - Management
 - Marine Transportation
- *Ocean Engineering, M.Eng.*, Ph.D.******
 - Coastal Engineering
 - Hydrodynamics
 - Naval Architecture
 - Oceanography

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Electrical and Computer Engineering Department

- *Computer Engineering, M.Eng., CP.E., Ph.D.*
 - Computer Systems
 - Data Communications and Networks
 - Digital Systems Design
 - Image Processing and Multimedia
 - Information Systems
 - Information Systems Security
 - Intelligent Systems
 - Real Time and Embedded Systems

- *Electrical Engineering, M.Eng., E.E., Ph.D.*
 - Autonomous Robots
 - Computer Architecture and Digital System Design
 - Embedded Systems
 - Microelectronics and Photonics Science and Technology (Interdisciplinary)
 - Signal Processing for Communications
 - Telecommunications Systems Engineering
 - Wireless Communications
- *Networked Information Systems, M.Eng.*
 - Data Communication Networks
 - Information Networks
 - Multimedia Information Systems
 - Multimedia Technologies
 - Network Systems Technologies
 - Networked Information Systems: Business Practices
 - Secure Network Systems Design

Mechanical Engineering Department

- *Mechanical Engineering, M.Eng. **, M.E. **, Ph.D. ***
 - Manufacturing Systems
 - Product Design
 - Pharmaceutical Manufacturing
 - Thermal Engineering
- *Integrated Product Development, M.Eng. ***
 - Armament Engineering
 - Electrical and Computer Engineering
 - Manufacturing Technologies
 - Systems Reliability and Design
- *Product Architecture and Engineering, M.Eng. ***
- *Pharmaceutical Manufacturing M.Eng. **, M.Sc. ***

Systems Engineering and Engineering Management

- *Engineering Management, M.Eng., Ph.D.*
- *Systems Engineering, M.Eng., Ph.D.*

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THE ARTHUR E. IMPERATORE SCHOOL OF SCIENCES AND ARTS

Chemistry and Chemical Biology Department

- *Chemical Biology, M.S.*
 - Bioinformatics
- *Chemistry, M.S., Ph.D.*
 - Analytical Chemistry
 - Chemical Biology
 - Organic Chemistry
 - Physical Chemistry
 - Polymer Chemistry

Computer Science Department

- *Computer Science, M.S. ***, Ph.D. ******
 - CyberSecurity
 - Quantitative Software Engineering
- *Quantitative Software Engineering, M.S. **

Mathematical Sciences Department

- *Applied Mathematics, M.S.*
- *Mathematics, M.S., Ph.D. ******
- *Stochastic Systems Analysis and Optimization, M.S.*
- *Financial Engineering, M.S.*

Physics and Engineering Physics Department

- *Engineering Physics, M.Eng.* **
 - Engineering Physics
 - Engineering Physics (Applied Optics)
 - Engineering Physics (Solid State)
 - Microelectronics and Photonics Science and Technology (Interdisciplinary)
- *Physics, M.S.* **, *Ph.D.* **
 - Physics
 - Nanoscale Science and Technology (Interdisciplinary)

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THE WESLEY J. HOWE SCHOOL OF TECHNOLOGY MANAGEMENT

- *Executive Master of Business Administration in Technology Management, E.M.B.A. in TM*
- *Executive Master of Technology Management, E.M.T.M.*
- *Master of Business Administration in Technology Management, M.B.A. in TM*
 - Engineering Management
 - Financial Engineering
 - Global Technology Management
 - Information Management
 - IT in Financial Services Industry
 - IT in Pharmaceutical Industry
 - Project Management
 - Telecommunications Management
 - Pharmaceutical Management
 - IT Outsourcing
- *Management, M.S.* ****
 - General Management
 - Global Innovation Management
 - Human Resource Management
 - Information Management (also Ph.D. ****)
 - Project Management
 - Technology Management (also Ph.D. ****)
 - Pharmaceutical Management
 - Technology Commercialization
- *Information Systems, M.S.* ****
 - Computer Science (Interdisciplinary)***
 - E-Commerce***
 - Entrepreneurial IT***
 - Financial Services
 - Global Innovation Management
 - Human Resource Management
 - Information Management (also Ph.D. ****)
 - Information Security
 - Information Technology Outsourcing
 - Integrated Information Architecture (Interdisciplinary)
 - Pharmaceuticals
 - Project Management
 - Quantitative Software Engineering (Interdisciplinary)
 - Systems Engineering (Interdisciplinary)
 - Telecommunications Management
- *Telecommunications Management, M.S.*
 - Business Track
 - Global Innovation Management
 - Management of Wireless Networks
 - On-line Security, Technology and Business
 - Project Management

— Technical Management Track

INTERDISCIPLINARY

*Interdisciplinary, M.S. **, M.Eng. **, Ph.D. ***

All Interdisciplinary students select two program areas.

* GRE is only required for international students and those applying for a fellowship or assistantship.

** GRE is recommended but not required.

*** GRE is required for international students, those applying for a fellowship or assistantship and those without an academic Computer Science background.

**** GMAT or GRE is required for Ph.D. students, international students and those applying for a fellowship or assistantship.

***** GRE is required.

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Graduate Certificate Programs

All credits earned toward Graduate Certificates may be applied toward a Master's degree.

Most Graduate Certificates are four graduate courses.

THE CHARLES V. SCHAEFER, JR. SCHOOL OF ENGINEERING

- **Chemical, Biomedical, and Materials Engineering Department**

Customized programs are available.

- Biomedical Engineering
- Microdevices and Microsystems (Interdisciplinary)
- Microelectronics (Interdisciplinary)
- Pharmaceutical Manufacturing Practices (Interdisciplinary)
- Photonics (Interdisciplinary)

- **Civil, Environmental, and Ocean Engineering Department**

- Applied Coastal Oceanography
- Atmosphere and Environmental Science and Engineering
- Construction Accounting/Estimating
- Construction Engineering
- Construction Law/Disputes
- Construction/Quality Management
- Environmental Compatibility in Engineering
- Environmental Hydrology
- Environmental Process
- Geotechnical Engineering
- Hydraulics
- Inland and Coastal Environmental Hydrodynamics
- Multi-Hazard Engineering
- Soil and Groundwater Pollution Control
- Ocean Engineering
- Ship Hydrodynamics
- Soil and Groundwater Pollution Control
- Structural Engineering
- Surface Water Hydrology
- Water Resources Engineering
- Water Quality Control

- **Electrical and Computer Engineering Department**

- Autonomous Robotics
- Digital Signal Processing

- Digital Systems and VLSI Design
- Microelectronics and Photonics (Interdisciplinary)
- Multimedia Technology
- Networked Information Systems
- Real-Time and Embedded Systems
- Satellite Communications Engineering (Interdisciplinary)
- Secure Network Systems Design
- Wireless Communications

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- **Mechanical Engineering Department**
 - Advanced Manufacturing
 - Air Pollution Technology
 - Computational Fluid Mechanics and Heat Transfer
 - Design and Production Management
 - Ordinance Engineering
 - Pharmaceutical Manufacturing Practices (Interdisciplinary)
 - Power Generation
 - Product Architecture and Engineering
 - Robotics and Control
 - Structural Analysis and Design
 - Vibration and Noise Control
- **Systems Engineering and Engineering Management Department**
 - Agile Systems Engineering and Design
 - Engineering Management
 - Systems and Supportability Engineering
 - Systems Engineering and Architecting
 - Value Chain Enterprise Systems
 - Systems Engineering Management

THE ARTHUR E. IMPERATORE SCHOOL OF SCIENCES AND ARTS

- **Chemistry and Chemical Biology Department**
 - Analytical Chemistry
 - Bioinformatics
 - Biomedical Chemistry
 - Chemical Biology
 - Chemical Physiology
 - Laboratory Methods in Chemical Biology
 - Polymer Chemistry
- **Computer Science Department**
 - Computer Architecture and Software Design
 - Computer Graphics
 - CyberSecurity
 - Database Systems
 - Distributed Systems
 - Elements of Computer Science ‡
 - Quantitative Software Engineering
 - Software Design
 - Theoretical Computer Science
- **Humanities and Social Sciences Department**
 - Professional Communications

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- **Mathematical Sciences Department**
 - Applied Statistics
 - Financial Engineering
 - Stochastic Systems
- **Physics and Engineering Physics Department**
 - Applied Optics

- Microdevices and Microsystems (Interdisciplinary)
- Microelectronics (Interdisciplinary)
- Photonics (Interdisciplinary)
- Satellite Engineering (Interdisciplinary)
- Surface Physics

THE WESLEY J. HOWE SCHOOL OF TECHNOLOGY MANAGEMENT

- E-Commerce
- Engineering Management
- Entrepreneurial IT
- General Management
- Global Innovation Management
- Human Resource Management
- Information Management
- Information Security
- IT for Financial Services Industry
- IT for Pharmaceutical Industry
- Management of Wireless Networks
- Pharmaceutical Management
- Project Management
- Technology Management
- Technology Commercialization
- Telecommunications Management

‡ No credit is given toward the Master of Science in Computer Science for CS 550, CS 580, CS 590, and MM 502.

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Corporate Site Graduate Programs

Air Crusasers – Bellmar, New Jersey

- M.E. in Engineering Management

BAE Systems, CNI – Wayne, NJ

- Electrical Engineering (M.Eng. in Electrical Engineering)
- M.E. in Systems Engineering
- Engineering Management (Graduate Certificate)

Boeing – Online for all Boeing locations

- Project Management* (M.S. in Management)

Citigroup – New York, NY

- M.S. in Information Systems* (MSIS)

Fort Monmouth – Eatontown, NJ

- Computer Engineering* (M.Eng. in Computer Engineering)
- Courses in Computer Science
- CyberSecurity* (Graduate Certificate)
- Electrical Engineering* (M.Eng. in Electrical Engineering)
- Systems Engineering* (Graduate Certificate/M. Eng. in Systems Engineering)

General Dynamics – Florham Park, NJ

- Interdisciplinary program offered by Department of

Physics & Engineering Physics (Graduate Certificate/M.S./M.E.)

Hanover Marriott – Whippany, NJ

- M.S. in Information Systems (MSIS)
- Project Management (Graduate Certificate)

Courtyard by Marriott – Whippany, NJ

- Executive Master of Technology Management (EMTM)

Holiday Inn – Tinton Falls, NJ

- Executive Master of Technology Management (EMTM)

Inn at Woodbridge – Iselin , NJ

- Executive Master of Business Administration in Technology Management (EM.B.A.-TM)

ISO – Jersey City, NJ

- M.S. in Information Systems* (MSIS)

ITT – Clifton, NJ

- Computer Science* (M.S. in Computer Science)
- Electrical Engineering* (M.Eng. in Electrical Engineering)
- Project Management* (Graduate Certificate)
- Systems Engineering* (Graduate Certificate)

Johnson & Johnson – New Brunswick, NJ

- M.S. in Information Systems* (MSIS)

Langan Engineering and Environmental Services (Graduate Courses) – Elmwood Park, NJ

- Storm Water Management
- Earth Supporting Structures
- Soil Behavior and its Role in Environmental Applications

Lockheed Martin – Moorestown, NJ

- Computer Science* (M.S. in Computer Science)
- CyberSecurity* (Graduate Certificate)
- Information Management* (Graduate Certificate/M.S. in Management)
- Project Management* (Graduate Certificate/M.S. in Management)
- Quantitative Software Engineering* (Graduate Certificate/M.S. in Quantitative Software Engineering)
- Software Design* (Graduate Certificate)

Merck – Rahway, NJ (Rahway employees only)

- M.S. in Information Systems* (MSIS)

Merck – Whitehouse Station, NJ (White House Station employees only)

- M.S. in Information Systems* (MSIS)

Merck – Rahway, NJ (transmitted to Whitehouse Station, NJ and West Point, PA)

- M.S. in Information Systems* (MSIS)

Naval Air Engineering Station – Lakehurst, NJ

- Systems Engineering (Graduate Certificate/M.Eng./Ph.D. in Systems Engineering)

Pfizer – New York, NY

- M.S. in Information Systems* (MSIS)

Pfizer Global Manufacturing – Brooklyn, NY

- Project Management* (Graduate Certificate)
- Pharmaceutical Management* (Graduate Certificate)

Picatunny Arsenal – Dover, NJ

- Integrated Product Development (Graduate Certificates/M.Eng. in IPD)
- Mechanical Engineering (Graduate Certificate/M.Eng./Ph.D. in Mechanical Engineering)
- Quantitative Software Engineering (Graduate Certificate)
- Courses in Computer Engineering, Electrical Engineering, and Systems Engineering
- Systems Engineering (Graduate Certificate/M.Eng./Ph.D. in Systems Engineering)
- Courses in CyberSecurity

Schering Plough – Kenilworth, NJ

- Pharmaceutical Manufacturing Practices* (Graduate Certificate)

SETP – Columbia, MD

- Systems Engineering* (Graduate Certificate/M.Eng. in Systems Engineering)

UBS/PaineWebber – Weehawken, NJ

- M.S. in Information Systems* (MSIS)

Unilever Bestfoods North America – Englewood Cliffs, NJ

- M.S. in Information Systems (MSIS)

Verizon – Online via the Web and/or Web Conferencing for all Verizon locations

- Engineering Management* (Master of Business Administration in Technology Management (M.B.A.-TM))
- Networked Information Systems* (M.Eng. in Networked Information Systems)
- Project Management* (M.S. in Management)
- Project Management* (Master of Business Administration in Technology Management (M.B.A.-TM))
- Telecommunications Management* (Master of Business Administration in Technology Management (M.B.A.-TM))
- Telecommunications Management* (Graduate Certificate/M.S. in Telecommunications Management)

Verizon Wireless – Bedminster, NJ

- Telecommunications Management* (M.S. in Telecommunications Management)

Verizon Wireless – Orangeburg, NY

- M.S. in Information Systems* (MSIS)

Verizon Wireless – Warren, NJ

- M.S. in Information Systems* (MSIS)

Program without asterisk: OPEN TO ALL STEVENS STUDENTS

* Program at this site is open only to employees of this company.

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