Watson Computer Engineering

Major Overview:

Computer engineering primarily encompasses the design of computers and other digital systems, emerging as a bridge between electrical engineering and computer science. Driven by technological advancements that have made computing technology inexpensive and small enough to incorporate into a wide range of products and systems, computer engineering has become one of the core engineering disciplines.

The scope of products and systems containing computer technology is ever-expanding, ranging from small, embedded computers in consumer electronics, appliances and automobiles to complex computer-based systems controlling power generation, manufacturing and telecommunications systems. The role of the computer engineer includes the design, analysis and implementation of computing technology as well as its integration into devices and systems that use computers as components or tools. As a result, computer engineers work in many industries, including aerospace, automobile, computer, defense, electronics, information technology, networking and telecommunications.

Research Areas:
Watson students learn from and work with an outstanding and experienced faculty working in leading research areas. Students who participate in undergraduate research have the opportunity to delve into a focused area of interest, while gaining meaningful hands-on experience applying technical skills and putting their analytical and critical-thinking abilities to practice.

Research conducted in the Department of Electrical and Computer Engineering focuses on:

- Information assurance and security, microelectronics and computer networks
- Systems areas of communications, controls and signal processing, laser communication, photonics and optoelectronics

Watson School students are encouraged to speak with their individual department when seeking out opportunities in research.
Explore more research opportunities in the Computer Engineering Department. [http://www.binghamton.edu/ece-research/]

For more information about research in the Watson School, please visit the link. [http://binghamton.edu/watson/research]

**Post-Graduation:**
Pursuing a degree in computer engineering provides students with high-level skills in mathematics, science and engineering. Computer engineers focus primarily on the design of computers emerging as a bridge between electrical engineering and computer science. As a computer engineering student you are exposed to a large scope of products and systems and graduate with the necessary skills and experience.

Students go on to work in many industries, including aerospace, automobile, computer, defense, electronics, information technology, consulting and telecommunications. Others pursue advanced degrees in computer engineering, computer science, electrical engineering or other engineering disciplines.

[Computer engineering helpful link](http://www.binghamton.edu/ece/)

**Courses:**
**First-year courses to consider:**
- Calculus I & Calculus II
- Chemistry 111 Chemical Principles
- Physics 131 Calculus Based General Physics I
- WTSN 103 Engineering Communications I
- WTSN 111 Introduction to Engineering Design
- WTSN 104 Engineering Communications II
- WTSN 112 Introduction to Engineering Analysis

Click here to access the University Bulletin for an in-depth description of each course. [http://bulletin.binghamton.edu/]

Thank you.

For more information contact Watson School Advising:

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