The IT experts have it

Computer science grads are in demand

By Guy Kipp
Special to The Star-Ledger

Technology has taken over.

It dominates — some might even say controls — countless aspects of our lives, from the ubiquitous presence of smartphones to reliance on the Internet to computer-controlled vehicle functions.

With computers staking claim to such a vast portion of our everyday existence, demand for tech support is at an all-time high.

And several colleges and universities in New Jersey are offering the courses and programs that teach and qualify the next generation of IT experts to troubleshoot technological issues.

"We offer a Bachelor of Science degree in Computer Science, and we have specific courses in systems administration," said Dr. Cyril S. Ku, associate professor of Computer Science and chair of the Computer Science department at William Paterson University in Wayne. "Nowadays, everything has to do with networking. Everything is networked together. People have iPhones and iPads, and they're all linked together, so networking really is a hot area.

With networking comes security. We have courses in networking, system programming, all suitable for this kind of career."

Ku has seen a marked uptick in the amount of interest in computer-related courses at William Paterson.

"Actually, enrollment in general in computer science has increased in the last five years," Ku said. One of the reasons stems from employer demand. "According to the website careercast.com, software engineering is listed as the No. 1 career and computer systems as No. 9. Those are very hot areas.

"Two other courses, net-centric computing, and computer and network security, have full enrollment, too. If you go into computer science, you need a programming background and a mathematics background."

The advantages of studying computer science at William Paterson, according to Ku, come down to accreditation and individual attention.

"Our program is accredited by the Computing Accreditation Commission of ABET (Accreditation Board for Engineering and Technology); it accredits the computer science and systems information (courses) all over the world, and we are one of

only seven (institutions) in New Jersey that have ABET accreditation," Ku said.

"Another selling point (for WPU) is that we are only an undergrad program, and that's an advantage because if you go into a bigger program, you don't have much opportunity," he said. While the research opportunities at some institutions' very large programs may only go to graduate students, "we only have an undergrad program and that gives students many more opportunities for research, jobs, papers and tutoring. When you become a junior and senior, you'll have all those opportunities at William Paterson.

"Also, our class sizes are very small, 24 students or less, because we have 24 computers in the classroom. That helps attract students. We emphasize our uniqueness, the quality of our faculty, accreditation and class size."

At Thomas Edison State College (TESC), the Bachelor of Arts degree program in Computer Science prepares adults for career change, advancement or graduate education. The Bachelor of Science in Business Administration (BSBA) degree program in Computer Information Systems at TESC provides an applied information systems educational base for students seeking to become managerial users of computers, managers of computer service units or applications staff members supporting organizations or companies that use computers.
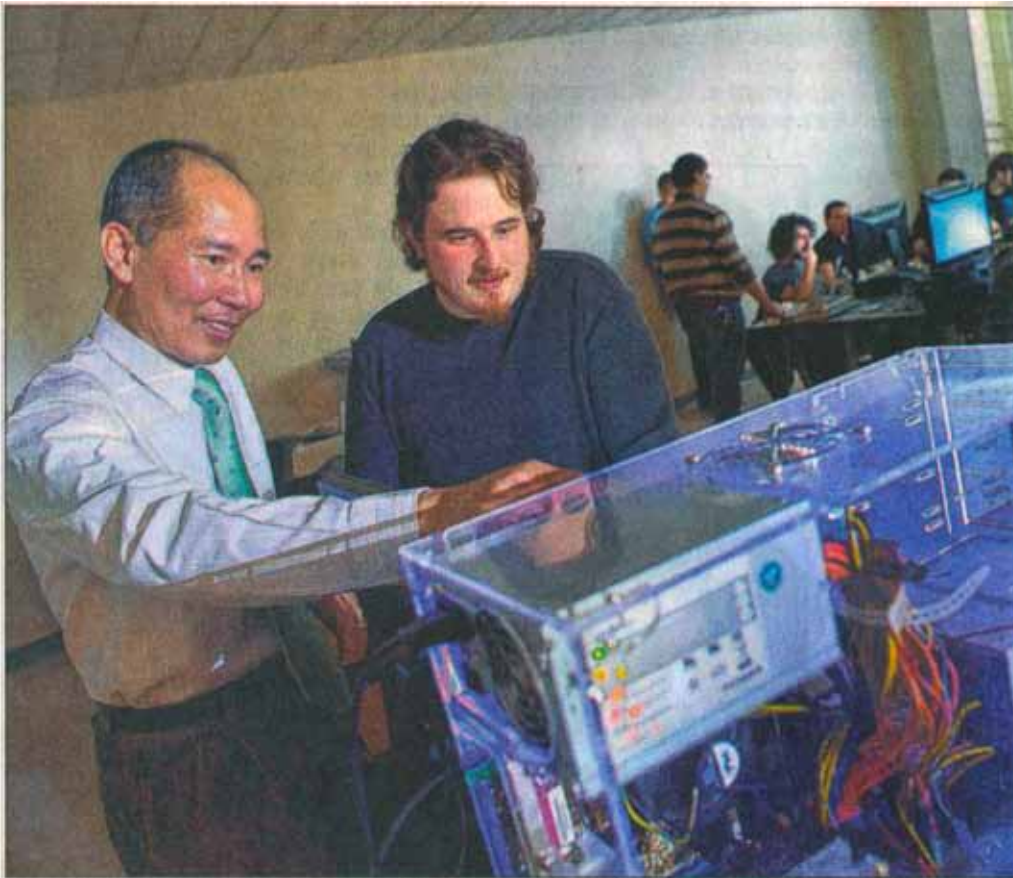
A professional certificate in Cyber Security also is offered at TESC. It gives technology managers the opportunity to learn about information security and enhance their ability to work with security analysts within an enterprise.

"The program is designed for business and industry managers and administrators responsible for risk management and emergency planning, including managing natural disasters, business interruptions and acts of terrorism and sabotage," according to TESC's prospectus on the Cyber Security certificate program.

Kean University in Union offers an M.S. program in Computer Information Systems, giving students the opportunity to learn "the theory, systems, languages and analysis of computer systems, and combine it with an advanced understanding of design and implementation of information systems." The program prepares students for careers in software design and development, human computer interface and software assurance.

Students at Caldwell College can receive training in Java programming and hone their skills in networking and security applications.

"Students who receive a Bachelor of Science degree in Computer Information Systems with a concentration in Information Technology at Caldwell College acquire the skills to plan, develop and manage computing resources needed to support installations utilizing microcomputers and their applications," said Mary Voehl, program coordinator, Computer Information Systems, Division of Business at Caldwell College. "They receive essential training in Java programming, operating systems, database management, systems analysis, web design and the

Networking and security are two critical areas within the computer science field, according to Dr. Cyril S. Ku, left, associate professor of Computer Science and chair of the Computer Science department at William Paterson University in Wayne.

"They receive essential training in Java programming, operating systems, database management, systems analysis, web design and the development of e-commerce sites. In addition, they develop advanced skills in networking and data communications, network security and interactive web applications, which rely on server-side programming and back-end databases.

"Individual course content within the major is continuously updated to insure consistency with the latest developments in technology," Voehl said. "Students are well-prepared to enter the fields of computer systems administration and Internet security in addition to those of programming, web design and database administration."

The College of Saint Elizabeth's (CSE) Bachelor of Science in Computer Science is designed to provide a strong theoretical and practical background in computer science

"Software methodology and basic architecture of computer hardware as well as the social, ethical and professional issues related to computer science will be examined," according to CSE's program description. ◆