**Becoming a Computer Engineer –** video transcript

Introduction

Without the advancements made by computer engineers, computer systems would still fill up an entire room instead of slipping into your briefcase. Unlike software engineers who develop programs and software, computer engineers design the hardware that runs these programs. Computer engineers also work on designing embedded systems, which is the hardware that controls electronics and industrial equipment.

Job Duties and Skills

Computer engineers work in the research and development of computer hardware technology. This can include computer systems, peripherals like modems, keyboards and mice, microprocessors, circuit boards and more. Computer engineers also work to test their designs and revise them based upon the results of their analysis.

Some computer engineers work closely with software engineers to create hardware that interacts with a specific piece of software or vice versa. These positions require excellent communication skills, including the ability to write technical documentation. Programming abilities, especially in Java and C++ can help computer engineers write code and work more efficiently with software engineers.

Extensive technical skills are also essential. It is not possible to be familiar with all technologies, so computer engineers should be adaptable and able to pick up new skills quickly. Employers are more apt to hire employees who are able to react to changes around them than those who have mastered the popular technical skills of today but lack the skills needed to learn new technologies.

Training Required

A bachelor's degree in Computer Engineering is required for most entry-level positions. These programs include courses in advanced mathematics, circuit design, computer programming, electrical theory, digital logic and more.

Those interested in advanced positions are encouraged to earn a master's degree. Graduate programs explore topics of computer hardware design in greater depth. They also allow students to develop the improved research and data analysis techniques that are essential for success in the most demanding industry positions.

Professional certifications are not required, but can increase career opportunities. These certificates are usually offered by vendors or manufacturers of commonly used technologies. They allow students to build a set of highly specific skills related to a particular software or hardware product. Certificates are best suited to computer engineers whose positions consist of some software development duties.

Continued education is also important, as advancements in computer technology are made every day. Computer engineers are encouraged to stay up-to-date in order to remain productive members of the workforce. This may involve reading industry publications or attending conferences and lectures focusing on emerging technologies.

Career Options

The majority of computer engineers find positions that allow them to develop the next generation of computer hardware. Common employers include personal computer manufacturers, as well as companies who focus on electronic products like PDAs, mp3 players, ATM machines, stoplights and VCRs. This field is known as embedded systems and has applications in a variety of industries. Other computer engineers are involved in the design of the CPUs and other components that power computer systems.

The collaborative nature of computer engineering has created a need for skilled leaders, known as project managers. These professionals are often experienced computer engineers that have been promoted due to their technical and leadership skills. Most project managers have completed at least a master's degree.

Computer engineers can also pursue careers in computer software development, quality assurance, database administration and information technology. Professionals interested in these positions may benefit from earning a professional certificate in their chosen field.

If you have a love for electronics and an interest in computer technology, a career as a computer engineer may just be for you.

Hardware: matériel informatique  
To design: to device = concevoir  
Embedded: computing 🡪performing a limited number of dedicated functions 🡪 intégré  
Peripheral: detached device = périphérique  
Circuit board = electrical component = circuit imprimé

Java and C++ = general.purpose programming languages

A bachelor degree = une licence (bac +3)  
a master’s degree = un master (bac +5)

PDA = Personal Digital Assistant 🡪 handheld PC  
 Personal Data Assistant 🡪 Pocket PC

ATM machine: Automated Teller Machine 🡪 Distributeur automatique de billets  
Stoplight : feu tricolore  
VCR: Video Cassette Recorder = Magnétoscope  
CPU: Central Processing Unit = Unité Centrale (UC)