* web security and encryption
* software development
* computer security
* cybersecurity.
* Security testing and auditing
* vulnerability assessment
* and network security management

hard skills in intrusion detection, firewalls, threat modeling, and ethical hacking.

Other specific hard skills include network architectures, protocols, routing, and access controllers.

Security engineers must understand major operating systems,

such as Linux, UNIX, and Windows,

and major database platforms like MySQL and MSSQL.

Security engineers need to know security systems infrastructure, audit functions, and encryption tools.

These professionals must also know how to perform computer forensics work, virus and phishing attempt detection and prevention, and security compliance.

Through curricula focused on information technology security, computer engineering, and information systems, cybersecurity degree programs encourage development of the hard and soft skills described above.