# Computer Engineering Skills

Computer engineering professionals are skilled engineers with a specialized background in a range of technical areas. However, employers seek those with a combination of technical and soft, employability skills – the skills that are necessary for the employee to apply technical knowledge effectively. According to the National Workforce Center for Emerging Technologies, some of the top soft skills for computer engineers include project management, critical thinking, time management and organization, interpersonal, and communication skills.[\n]

Secondary to employability skills, computer engineers should possess industry-specific technical skills for their area of practice (whether network or hardware design).

[extend]Major areas of knowledge include the following:[\n]

Engineering Technologies: Knowledge of engineering science and technology, including practical applications, theory, procedures and production design.[\n]

Computers and Electronics: Knowledge of computing systems, electronic equipment, processors, software, circuit boards and computer software.[\n]

Mathematics: Knowledge of various mathematical concepts (geometry, statistics, algebra, etc.) and the ability to apply these to real-world situations.[\n]

Design: Knowledge of the fundamentals of design techniques and production, including schematics, blueprints and technical plans.[\n]

Production: Knowledge of production processes, distribution, manufacturing, quality control and other major elements of the creation and distribution of products.[\n]

Mechanical: Knowledge of tools and machinery, including their use and maintenance.[\n]

Networking: Knowledge of the foundations of networking and networking technologies (e.g. Cisco, Juniper, Microsoft), networking functions, protocols and standards.[\n]

Computer Programming: Knowledge of various programming languages and frameworks, such as Python, .NET, JavaScript, PHP, Linux, C++, C# and SQL.[\n]

Computing Theory: Knowledge of software and computer architecture, as well as operating systems concepts.[\n]

Management: Knowledge of project planning, management and organization, as well as risk and cost assessment.[\n]

Product Development: Knowledge of testing techniques, process control, user documentation and product packaging.[/extend]