



Computer Related Degree Overview

If you are interested in computers, there are several different degrees depending on your career goals. The diversity of degrees can cause confusion, so let's talk about the differences between the degrees.

Professional/Technical Degrees and Certificates

TCC's Networking and Cyber Security program prepares the student for a career in network administration and technical support with a focus on cyber security. The program includes a series of technical core courses that provide hands-on knowledge and skills in systems, data, networking, and security concepts. The program includes a series of non-technical core courses related to business, project, and team communication skills. Advanced course work includes training in PC hardware and operating systems, Windows servers, networking, routing, security, and virtualization. Professional/Technical (Career Training) degrees and certificates are designed for students who want to get back out into the workforce quickly with high demand skills, rather than those who plan to continue on to a university. As such, students are generally working with existing systems.

University Transfer Associate Degrees

If you want to be the person actually designing computer systems, you may be more interested in a bachelor's degree in computer science, computer engineering or electrical engineering. Although an oversimplification, computer engineering focuses on programming and developing hardware, while computer science focuses on the theoretical algorithms that drive improvements in software. Electrical engineering is a closely related field but more broadly works in the design of electronics as well as large scale power systems.

The freshman and sophomore level coursework required for a student to transfer at the junior level to a university computer science, computer engineering or electrical engineering program may generally be completed at Tacoma Community College. Entry into many computer science, computer engineering and electrical engineering programs is competitive. Completion of coursework or an associate's degree does not guarantee admission into a specific program.

Tacoma Community College offers three associate degree pathways for students who are planning to transfer to a university in these areas:

- Associate in Computer Science – DTA
- Computer Engineering – Associate of Science (Track 2)
- Electrical Engineering and Computer Engineering – Associate of Science MRP

Associate in Computer Science – DTA

This degree is usually the best choice for students who know that they are only interested in computer science, and will not need the more rigorous math and science requirements for computer engineering or electrical engineering. It also allows the student to complete general education requirements. The Associate in Computer Science degree is a Direct Transfer Agreement (DTA) degree. This does not mean

that degrees that aren't DTAs won't transfer, instead, it guarantees some very specific benefits. According to the State Board of Community and Technical Colleges (SBCTC) website, DTA degrees provide "completion of lower division general education requirements for universities (in Washington state), credit for all courses completed within the DTA up to and in some cases beyond 90 credits, and the opportunity to explore several fields of study through the category of up to 30 credits of elective courses." The Associate in Computer Science is approved by the Joint Transfer Council (JTC) for the state of Washington.

Computer Engineering – Associate of Science (Track 2)

This degree is usually the best choice for students who are planning major in computer engineering or students who are planning to major in electrical engineering at the University of Washington-Tacoma, Eastern Washington University or Western Washington University. These programs require more math, science and engineering fundamentals, so there is less room for the humanities and social science courses that are in a DTA degree. Although the Computer Engineering – Associate of Science degree does have some humanities and social science requirements (15 credits), you will still have to take more classes in these areas after you transfer. Individual humanities and social science courses in the degree receive the same transferability benefits as they would in a DTA degree. Students should work with an academic advisor to select appropriate courses. The Associate of Science track 2 degree is approved by the Joint Transfer Council (JTC) for the state of Washington.

Electrical Engineering and Computer Engineering – Associate of Science MRP

This degree is usually the best choice for students planning to major in electrical engineering at the University of Washington- Seattle, Washington State University and most other EE programs. This degree is a Major Related Program (MRP). MRP degrees were developed on a statewide level by the Washington Council for Engineering and Related Technology Education (WCERTE), an organization comprised of the community colleges and universities in the state of Washington that offer engineering degrees, and approved by the Joint Transfer Council (JTC) for the state of Washington. MRP degrees were designed specifically to prepare students to transfer at the junior level into the specific disciplines. Since electrical engineering programs have significant math, science, computer science and engineering fundamentals coursework requirements, the degree requires 103 credits.

Although the EE/CompE – AS- MRP degree does have some humanities and social science requirements (15 credits), you will still have to take more classes in these areas after you transfer. Individual humanities and social science courses in the degree receive the same transferability benefits as they would in a DTA degree. Completion of this degree would prepare students to transfer into computer science, computer engineering or electrical engineering, but would require coursework that is only mandatory for electrical engineering.

Although Tacoma Community College advisors make every effort to consult with various colleges and universities regarding requirements, students are encouraged to consult catalogs, websites and advisors at their chosen four-year institutions early in the planning process.

Preparation: While in high school, students should pursue all the available courses in mathematics, chemistry, computer programming and physics.