Computer Engineering and Software Engineering Program Requirements

Course #	Description	TCC AS-CompE/EE MRP	TCC AS-T2	UW Seattle CompE	UW Tacoma CompE	UW Bothell CompE	WSU Pullman CompE	WSU Pullman, Everett Software E	WWU Bellingham ECE	Seattle U Seattle CompE	SPU Seattle CompE	Gonzaga Spokane CompE
Math& 151, 152, 153	Calculus 1, 2, 3	R	R/R/S	√-app	√	√	G	G(P), √(E)	√	G	G	G
Math& 254	Calculus 4	S	S	√-app	√	√	G	A	G	G	G	G
Math 238	Differential Equations	R	S	A	√	G	G		G	G	G	G
Math 220	Linear Algebra	R	S	G	√	G	G	G(P), √(E)	√	G	G	
Phys& 221	Calc Based Physics 1	R	R	√-app	√	√	G	G(P)[3], √(E)[3]	√	G	G	G
Phys& 222	Calc Based Physics 2	R	R	G	√	√	G	G(P)[3], √(E)[3]	√	G	G	G
Phys& 223	Calc Based Physics 3	R	R	A	√		G		G	G	G	G
Biol& 221	Intro to Evol, Ecol & Biodiv	S	S						A			
Chem& 161	General Chem 1	R	R (or sub)	A		√	G		G	A	A	G
Chem& 162	General Chem 2	S	S	A					A			
Engr& 104	Intro to Design	S or Soc[1]	S or Soc[1]	Gen	A							
Engr& 204	Electric Circuits	R	S	G	√	G	G[4]		√	G	G	G
Engr& 214	Statics	S	S				A		A	A		
Engr& 215	Dynamics	S	S				A		A	A		
Engr& 224	Thermodynamics	S	S				A		A	A		
Engr 240	App Numerical Methods	S	S									
Not at TCC	Digital Logic	S	S				G			G	G?	G
Not at TCC	Microprocessors	S	S							G	G?	G
Not at TCC	Electric Circuits 2	S	S							G	G?	G
Not at TCC	Signals & Systems	S	S							G		G
CS 142	Java 1	R	S	√-app	√	√	G	G(P)[3], √(E)[3]	√ C++	G	G C++	G C++
CS 143	Java 2	S	S	√-app	√	√	G	G(P)[3], √(E)[3]		G	G C++	G C++
Engl& 101	English Comp 1	R	R	√-app	G	√	G	G(P), √(E)	G	G	A	G
Engl& 235	Technical Writing	S	S	G	A	G	G	G				A
Hum and Soc Sci[1]		R	R	Gen - see back	Gen	Gen	Gen - see back	Gen-see back, √(E)	Gen- see back	Gen- see back	Gen - see back	Gen - see back

TCC Key: There are two relevant associate's degrees: 1) AS-Computer Engineering and Electrical Engineering - MRP degree, and 2) AS-T2. More info on back.

R = Required for the associate's degree. The AS-T2 requires a minimum of 32 additional advisor-approved college level credits. Advisor approval required for Chem& 161 substitituion.

S = Specialization Course - Minimum of 5 courses for AS-CompE/EE MRP. You may need to take more than the minimum to meet university requirements. May also be used in the AS-T2.

University Key: √ = Required for admission or certification to the department. For UW, √-app class must be completed by April 5. √-enr by Fall start at UW.

G = Graduation requirement for the Bachelor of Science at the university. These are freshman/sophomore level courses so take now, if possible.

A = Meets an additional requirement. The university requires the selection of additional classes from specific lists for the BS. Gen = Meets General Education requirment

Gen = May be used as general education credit within the university BS degree.

P = Provides preparation for junior level university coursework and/or for the FE/EIT exam, the first step to being licensed.

C++ = The equivalent course at this university is a C/C++ course. Check with the university to see if Java is acceptable. It may be expedient to take programming at the university and transfer credits back to the CC for AS. However, knowing both languages is a benefit for majors.

Additional notes

[1] Economics is recommended. Engr& 104 counts as either a Specialization course or a Social Science, but not both. The AS degrees require 15 credits of Humanities and Social Science. At least 5 credits must be a Humanities and 5 credits must be a Social Science. One class must meet the multicultural requirement. See approved lists. Universities may have specific course Humanities/Social Science course requirements.

[3] WSU Software E: Chem& 161/162 may be subsitituted for Phys& 221/222. Require Java or C++ equivalent to both WSU's Cpts 131 and 132 or Cpts 121 and 122.

[4] While TCC's Engr& 204 has a lab, and course equivalency for WSU's EE 261 and 262, not all community college circuits courses transfer. Check with WSU academic coordinator.

Computer Engineering Program Requirements

Tacoma Community College

Students should generally be working toward one of three associate's degrees: 1) the Associate of Science - Computer Engineering and Electrical Engineering - Major Related Program (AS-CompE/EE - MRP), 2) the Associate of Science- Track 2 (AS-T2), and/or 3) the Associate of Arts DTA (AA-DTA). It is important to understand the distinctions. While the AS-CompE/EE-MRP works well for most electrical engineering students, it generally requires courses that are not needed for computer engineering students. For this reason, we geneurally recommend the AS-T2, which is less restrictive. The AA-DTA degree is intended for students to complete their general education requirements and is usually a poor fit for engineering students. Some universities give specific benefits for one or more of these degrees. Although we occasionally advise transferring without a degree, please transfer courses back to complete the degree. TCC funding is tied to associate's degree completion, so you help future students by finishing your degree. You may earn more than one degree from TCC, but must have an additional 30 credits for each degree.

University of Washington - Seattle

You must apply to both the university and the major. The Computer Engineering department admits transfer students for spring and fall quarters. Spring quarter deadlines are Dec. 15 for the university and Jan. 15 for the department. Fall quarter deadlines are Feb. 15 for the university and April 5 for the department. (There may be other deadlines for international students.) Some classes must be completed before you apply (V-app). Some courses must be completed before you start in the program (V-enr). University of Washington requires core requirements from high school. This applies even if high school was years ago! High school is considered to start in 9th grade. The core requirements are 4 years of English, 3 years of math, 3 years of social science, 2 years of foreign language, 2 years of lab science, and 0.5 years of art. If you did not complete these in high school, the requirements can be met through TCC courses. In general, 1 year of high school class = 5 credits of college work. See the University of Washington website for more details.

Washington State University - Pullman, Everett

WSU gives advantages to completing the AS-MRP degree. Individual departments have specific requirements, so while a social science may transfer, if you don't choose carefully, you may also have to take another class to meet the requirement. Choose the following courses: HIST& 128 (World Civ 3) and ECON& 202 (Macro). Completion of the AS-T degree (WA) automatically satisfies UCORE WRTG, QUAN, BSCI, PSCI, and three of the following requirements: HUM, SSCI, ARTS, DIVR, ROOTS. Up to three additional lower-division UCORE must be satisfied via transfer credit or in-residence credit prior to completion of a baccalaureate degree, and an individual course completed within the AS-T degree may not satisfy more than one UCORE category. Save samples of written work from TCC for a Writing Protfolio graduation requirement, do it as you are taking classes. WSU is on the semester system, rather than the quarter system. They require application to the university, entry requirements to the program vary by campus. See university website for important deadlines. WSU offers a new Software Engineering (SE) major in Pullman and Everett campuses. Everett SE is a 2.5-year, full-time BS degree completion program for transfer students. Pullman SE is a 4-year BS program but accepts transfer students. The SE program requires the equivalent to WSU's Economics 101 or 102, and two of the following: Calc IV, Math 146 equivalent to WSU Stat 212, Phil 201 equivalent to WSU Phil 201 or Math equivalent to WSU Math 301 (not generally offered at community colleges). The CompE program requires the equivalent to WSU's Economics 101 or 102. The statewide Associate of Arts in Computer Science (DTA MRP) is the best fit associate's degree for the Software Engineering Program.

University of Washington - Tacoma

The Bachelor of Science in Computer Engineering & Systems at the University of Washington - Tacoma is ABET accredited. This program is separately accredited from the University of Washington- Seattle, since each school has its own programs and requirements. CES is a full-time program that operates in a cohort model. CES admits students once per year for autumn quarter only. You must first apply for admission to UWT and then submit the CES program application. See website for details on admission requirements and the application process. The most appropriate associate's degree is the AS-T2, with Math 220 replacing Chem& 161.

University of Washington - Bothell

UW-Bothell is separately ABET accredited. The CompE program admits new students for Autumn quarter only. The most appropriate associate's degree is the AS-T2.

Western Washington University

WWU's Electrical Engineering program has become an Electrical and Computer Engineering program. Apply for admission to the program for fall of your sophomore year. Complete any remaining AS-T2 coursework at WWU and transfer it back. Java meets the programming requirement, though WWU uses C++ or Python.

Seattle University

Seattle University is a private Catholic (Jesuit) university. Transfer student priority application deadline is March 1 for Fall Quarter and scholarships are available. Applications are accepted throughout the year. Contact our transfer advising specialist at se-adv@seattleu.edu . Obtaining an AS-T2 degree is beneficial since it may reduce the number of CORE courses required for graduation to as few as 3. At least one course each in humanities, social science, and doing art (or creative writing) is highly recommended to maximize the benefit. Only one course from those marked with A is needed to satisfy science/enginering elective. SU's BS in Computer Engineering program was introduced in Fall 2019. The programming language at SU is Python followed by C++. The SU COMPE program accepts Java as a substitute. It is highly recommended that students transfer after completion of Electric Circuits.

Seattle Pacific University

SPU is a private Christian university. Students can begin their studies at SPU at any point. If you have earned, prior to matriculation at SPU, an AS-T2 degree and junior standing, you will be required to take only two of the three required University Foundations courses, UFDN 3001 Christian Scriptures and UFDN 3100 Christian Theology. At least 15 credits of your transfer coursework in humanities and social sciences will be used to fulfill SPU's humanities and social science requirements, whether or not the courses match SPU requirements on a course by course basis. There are then two years of coursework at SPU. You will be required to complete any remaining general education requirements, demonstrate proficiency in a foreign language, and complete the "W" and cultural understanding and engagement requirements prior to graduation. The introductory programming language at SPU is C++. The Comp E program has a C++ transition class for transfer students who took two quarters of programming in a different object-oriented language (e.g., two quarters of Java). Note the Comp E program requires one additional course in Math/Science, satisfied by either Math& 254 or Chem& 161 (i.e., students do not need to take both). We do require logic, microprocessors, and circuits 2, but their equivalency would be evaluated on a case by case basis.

Gonzaga University

Gonzaga University is a private Catholic (Jesuit) university. It is recommended students complete the appropriate AS-MRP for their engineering discipline which should include ENGL 101, Programming (C++ preferred), and the appropriate lower division engineering courses for the discipline. For Hum/Soc Sci, 10 cr of PHIL (Group A) is recommended (Intro to Phil, Ethics, or Logic/Critical Thinking). Please see our website (www.gonzaga.edu) for academic & transfer policies, application deadlines, and scholarship information.

It is the student's responsibility to check university websites and meet with university advisors to ensure the accuracy of advising information.