

Electrical Engineering Program Requirements

23-Oct-23

Course #	Description	TCC	TCC	UW			WSU			EWU	WWU	Seattle U	SPU	Gonzaga
		AS CompE/EE MRP	AS-T2	Seattle	Tacoma	Bothell	Pullman, Everett Bremerton	TriCities	Vancouver	Cheney, North Seattle	Bellingham	Seattle	Seattle	Spokane
				ECE	EE	EE	EE	EE	EE	EE	EE	ECE	EE	EE
Math& 151, 152, 153	Calculus 1, 2, 3	R	R/R/S	√-app	√	√	G (P), √(B,E)	√	G	G	√	G	G	G
Math& 254	Calculus 4	S	S	√-app	√	√	G (P), √(B,E)	√	G	G	G	G	G	G
Math 238	Differential Equations	R	S	√-enr	√	G	G (P), √(B,E)	G-see back	G	G	G	G	G	G
Math 220	Linear Algebra	R	S	√-enr/pick2	√	G	G (P), √(B,E)	√	G	G	√	G	G	G
Phys& 221	Calc Based Physics 1	R	R	√-app	√	√	G (P), √(B,E)	√	G	G	√	G	G	G
Phys& 222	Calc Based Physics 2	R	R	√-app	√	√	G (P), √(B,E)	√	G	G	√	G	G	G
Phys& 223	Calc Based Physics 3	R	R	√-enr/pick2	√	G	G (P), √(B,E)	G- see back	G	G	G	G	G	G
Biol& 221	Intro to Evol, Ecol & Biodiv	S	S							A				
Chem& 161	General Chem 1	R	R (or sub)	√-enr/pick2		√	G (P), √(B,E)	G- see back	G	G	A	A	A	G
Chem& 162	General Chem 2	S	S							A				
Engr& 104	Intro to Design	S or Soc <sup>1</sup>	S or Soc <sup>1</sup>	Gen	A		A (P), P(B,E)							
Engr& 204	Electric Circuits	R	S	G	√	G	G (P) <sup>5</sup> , √(B,E) <sup>3</sup>	G	G	G	√	G	G	G
Engr& 214	Statics	S	S				A	G- see back			A	A	A	G
Engr& 215	Dynamics	S	S				A	G- see back			A	A	A	
Engr& 224	Thermodynamics	S	S				A				A	A	A	
Engr 240	App Numerical Methods	S	S											
Not at TCC	Digital Logic	S	S						G - see back			G	G?	G
Not at TCC	Microprocessors	S	S						G - see back			G	G?	G
Not at TCC	Electric Circuits 2	S	S						G			G	G?	G
Not at TCC	Signals & Systems	S	S						G			G	G?	G
CS 142	Java 1	R	S	√-app	√	G	G (P), √(B,E)	√	G - see back	G C++	√ C++	G	G C++	G C++
CS 143	Java 2	S	S	√-enr	√	G	G (P), √(B,E)	G- see back				G	G C++	G C++
Engl& 101	English Comp 1	R	R	√-app	G	√	G (P), √(B,E)	G- see back	G	& 102	G	G	A	G
Engl& 235	Technical Writing	S	S	G	A	G	G		G	G				A <sup>3</sup> (103)
Hum and Soc Sci <sup>1</sup>		R	R	Gen - see back	Gen	Gen	Gen - see back	Gen-see back	Gen - see back	Gen-see back	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 also requires completion of a minimum of 32 additional advisor-approved college level credits. Advisor approval required for Chem& 161 substitution.  
**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 Autumn 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** = 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:** <sup>1</sup>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/Diversity course requirements.  
<sup>3</sup> GU requires Engl& 103 instead of Engl& 235. Engl& 103 may be substituted for 235 in the AS-MRP degrees.  
<sup>5</sup> 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.

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. Most Electrical Engineering students should be working toward the AS-CompE/EE -MRP, since it was developed to closely match university engineering program coursework. It requires 104 credits, rather than 90, which can be helpful with financial aid. Electrical Engineering students planning to transfer to the University of Washington-Tacoma, University of Washington-Bothell, Eastern Washington University or Western Washington University may find that the AS-T2 is a better fit. The AS-T2 is less restrictive. Students can make more self-advising errors using this model; however, if you are ready to transfer and a few classes shy of the AS-CompE/EE-MRP degree, you might still be eligible for the AS-T2 (speak with an engineering advisor). 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.

## Electrical Engineering Program Requirements

### University of Washington - Seattle

You must apply to both the university and the major. The Electrical and Computer Engineering department only admits students in autumn quarter. UW's Electrical Engineering program has become an Electrical and Computer Engineering program. The transfer student application deadline for the University of Washington (autumn quarter start) is February 15. (There may be other deadlines for international students.) The application deadline for the department is April 5. Some classes must be completed before you apply (V-app). Some courses must be completed before you start in the autumn (V-enr) and in some instances you can choose from a list (V-enr/pick2). **Applicants who have completed at least one term of college after leaving high school (excluding the summer immediately following high school graduation) AND who have completed 40 or more transferable college credits are exempt from the following.** 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. Please contact [undergradece@uw.edu](mailto:undergradece@uw.edu) for more information.

### University of Washington - Tacoma

The Bachelor of Science in Electrical Engineering 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. EE is a full-time program that operates in a cohort model. EE admits students once per year for autumn quarter only. You must first apply for admission to UWT and then submit the EE program application. Students may be admitted conditionally with prerequisites in progress. All prerequisites must be completed with a minimum grade of 2.0 by the start of autumn quarter. 10 credits of programming are required to apply. This can be CS 142 and 143 or other programming courses in Python, C or C++. 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 EE program admits new students three times a year, for Autumn and Winter and Summer quarters. The most appropriate associate's degree is the AS-T2.

### Washington State University - Pullman, Bremerton, Everett

In addition to the program at the main Pullman campus, WSU has junior/senior year programs at Bremerton and Everett. These are ABET accredited as part of the main campus. 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 Portfolio 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.

### Washington State University - TriCities

WSU-TriCities has not verified the data on this handout. Students must contact them directly to verify information. WSU- TriCities is separately ABET accredited. Choose the following courses: HIST& 128 (World Civ 3), and either ECON& 201 (Micro) or 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. The most appropriate associate's degree for the required courses is the AS-T2. If you have time to complete the AA-DTA while taking required courses, this would allow you to meet all of the UCORE requirements. If you have taken all the required courses, the "G-see back" courses, and completed the AA-DTA, you should have two years remaining, assuming that you start in summer quarter.

### Washington State University - Vancouver

WSU-Vancouver is separately ABET accredited. Completion of the AS-T degree (WA) automatically satisfies UCORE WRTG, QUAN, BSCI, PSCI, HUM, and ARTS. Students will need to complete the ROOT, SSCI and DIVR or EQJS UCORE requirements as those are not automatically satisfied with the AS-T degree or require a specific course. Choose the following courses: HIST& 128 (World Civ 3) to satisfy the ROOT UCORE, and either ECON& 201 (Micro) or ECON& 202 (Macro) to satisfy the SSCI. Students can use the Transfer Course Search Tool at <https://transfercredit.wsu.edu/transfer-course-search-tool/> to find a course to satisfy the DIVR or EQJS UCORE. There are several courses in the sophomore level at WSU-Vancouver that are required for certification but are not offered at TCC (or most CCs). These include: ECE 214 - Digital Logic and ECE 234- Microprocessor Systems. You may want to transfer to WSU-Vancouver after your first year. The programming language required for the degree is C.

### Eastern Washington University

EWU has engineering programs, as well as a number of technology programs. Acceptance to the major is automatic once accepted to the University. EWU gives advantages to completing the AS degree. Students who complete the AS do not need to take 15 credits of the required 25 credits in the General Education Core requirements. All courses designated as Humanities and Social Sciences by TCC will be accepted as Humanities and Social Sciences by EWU, regardless of individual course transferability. No biological sciences, or macro/micro economics courses are required for graduation. 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](mailto:se-adv@seattleu.edu). Obtaining an AS-MRP or 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. The programming language at SU is Python followed by C++. The EE program accepts Java as a substitute. Only one course from those marked with A is needed to satisfy science/engineering elective

### 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 Electrical Engineering degree at SPU is ABET accredited. The programming language at SPU is in C++, but the EE program accepts Java as a substitute if two courses of Java are taken and the second course includes Data Structures. SPU does require logic, microprocessors, circuits 2 and signals&systems, 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](http://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.**