Computer and Electrical Engineering

Associate in Computer and Electrical Engineering
Direct Transfer Agreement/Major Related Program (DTA/MRP)
Planning Guide 2016–2017

Computer and Electrical Engineering—What is it?

Computer and Electrical Engineering are intrinsically intertwined. While Computer Engineers focus specifically on the design, implementation and operation of computer hardware and software systems, Electrical Engineers design, develop and test all devices and systems that use electrical and electromagnetic energy. Both majors build on a solid foundation of math, science, computer science, engineering design and communications.

Areas of Study in Computer and Electrical Engineering: Electrical Circuits, Linear Systems, Thermodynamics, Engineering Problem Solving and Design, Data Structures, Microprocessors, Digital Operations and Computation, Electromagnetic Waves, Wireless Communication, Computer Programming, Operating Systems and Networks.

What is an AS-T Track 2 MRP?

The Associate in Science Transfer (AS-T) degree is designed to prepare students entrance into a Bachelor of Science (B.S.) program in Computer Engineering or Electrical Engineering. This AS-T degree is a Major Related Program detailing university requirements in the sciences, mathematics, computer science, communications and engineering so students will be ready for junior standing. Students will be required to take additional courses after transfer to fulfill general university requirements. Computer and Electrical Engineering is also an excellent major for graduate studies in Computer Science, Engineering, Law, Business and Education.

Where can I go for help?

Instructional Faculty Advisors

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General Academic Advising

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206-546-4559
advising@shoreline.edu
www.shoreline.edu/advising

International Student Academic Advising

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206-546-4697
ieadvisors@shoreline.edu
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Where can I transfer?

The AS-T Track 2 MRP in Computer and Electrical Engineering makes it possible for students to transfer to a number of public and private colleges and universities with junior standing. Below are Washington State institutions that recognize this MRP.

Public Institutions

Central Washington University (CE Tech, EE Tech)
Eastern Washington University—Spokane (CE)
Eastern Washington University—North Seattle (EE)
University of Washington—Seattle (CE, EE)
University of Washington—Bothell (CE, EE) & Tacoma (CE)
Washington State University – Pullman (CE, EE)
Washington State University – Everett, Tri-Cities, Vancouver (EE)
Western Washington University (EE)

Private Institutions

DigiPen Inst. of Tech (CE)
Gonzaga University (EE, CE)
Pacific Lutheran University (EE, CE)
Seattle Pacific University (EE, CE)
Seattle University (EE, CE)
Walla Walla University (CE)

*Note: Engineering Majors offered at Washington State Universities are designated as follows: Computer Engineering (CE) and Electrical Engineering (EE)

What can I do with a Bachelor's Degree in Computer and Electrical Engineering?

In addition to strong technical, scientific and problem solving skills, engineers often rely on teamwork and clear communications to manage projects effectively. These skills apply to a wide range of careers in such areas as hardware research and design, software and electrical engineering, management, teaching, sales and consulting.

Potential employers include: Engineering firms, manufacturing firms, semi conductor companies, computer software and hardware companies, wireless communication companies, government agencies, colleges and universities. For more, please visit http://www.shoreline.edu/counseling-services/career-counseling.aspx

What do I need to take?* Below are the requirements for the AS-T Track 2 and the Major Related Program (MRP) in Computer and Electrical Engineering.

I. GENERAL EDUCATION I 18 - 20 Credits			
Courses used in General Education (Gen Ed) Core may not be used for distribution.			
General Education Courses	**QTR**	**GR**	**CR**
ENGL &101			**5**
ENGL &102 or &230, or CMST &101			**3 - 5**
Multicultural Understanding			**5**
MATH &151 (Quant. & Symb Reas.)			**5**

II. DISTRIBUTION REQUIREMENTS | 10 Credits			
See courses listed on next page *An Economics course is recommended for Social Sciences*			
Humanities *5 Credits*	**QTR**	**GR**	**CR**
1.			
Social Sciences *5 Credits*	**QTR**	**GR**	**CR**
1.			

III. PRE-MAJOR PROGRAM I 73 - 78 Credits							
PHYSICS | 16.5 Credits	**QTR**	**GR**	**CR**	**CHEMISTRY** | 6.5 Credit	**QTR**	**GR**	**CR**
PHYS &221 *Fall, Win*			5.5	CHEM 171/181 *Every quarter*			6.5
PHYS &222 *Win, Spr, Sum*			5.5	**MATHEMATICS** | 20 Credits	**QTR**	**GR**	**CR**
PHYS &223 *Win, Spr*			5.5	MATH &152 *Every quarter*			5
COMPUTING & ENG. | 10 Credits	**QTR**	**GR**	**CR**	MATH &163 *Every quarter*			5
CS &141 *Every quarter*			5	MATH 207 *Fall, Spr*			5
ENGR &204 *Spr*			5	MATH 208 *Fall, Win*			5

FOR MAJOR ELECTIVES, CHOOSE FROM LIST BELOW	**MAJOR ELECTIVES |** 22-25 Credits	**QTR**	**GR**	**CR**
BIOL &211 (*Every quarter, 5 Cr.*); **CS 121** (*Every quarter, 5Cr.);* **CS 143** (*Fall, Win, Spr, 5 Cr.*); **CHEM 172/182** (*Win, Spr, Sum, 6.5 Cr.*); **ENGL &230** (*Fall, Spr, 3 Cr, can also be used for Gen Ed*); **ENGR 100** (*Fall, Win, Spr, 4 Cr.*); **ENGR &102** (*Fall, 5 Cr.*); **ENGR &104** (*Win, 5 Cr.*); **ENGR &202** (*Spr, 5 Cr.*); **ENGR &214** (*Spr, Fall, 5 Cr*); **ENGR 215** (*Win, Spr, 5 Cr.*); **ENGR &224** (*Not offered at Shoreline, 5 Cr.*); **ENGR 240** (*Win, 5 Cr.*); **MATH &264** (*Spr, 5 Cr.*)	1.			
	2.			
	3.			
	4.			
	5.			

What does your chosen four-year school require?

Before choosing classes, become familiar with the four-year program where you want to apply: visit the website, email the department, and/or speak with a Shoreline advisor. Below are examples from Washington schools with different admissions and graduation requirements. Check with the school for world language requirements. (Non-native speakers of English are often exempt from this requirement.) University engineering programs require specific courses for each major. Not all majors/universities require all courses on this "Major Related Program" planning guide. At many schools, admission to these majors is competitive. Students are encouraged to investigate the schools and departments to which they plan to apply. The "Engineering, General" Planning Guide shows the minimum requirements for the Associate in Science Transfer-Track 2 degree.

School	Degrees	Requirements
University of Washington - Seattle	B.S. in Computer Engineering and B.S. in Electrical Engineering	http://www.washington.edu/students/gencat/academic/ee.html http://www.washington.edu/students/gencat/academic/cse.html
University of Washington – Bothell	B.S. in Computer Engineering and B.S. in Electrical Engineering	https://www.uwb.edu/bscompe/admissions https://www.uwb.edu/ee/admee
University of Washington - Tacoma	B.S. in Computer Engineering and Systems	https://www.tacoma.uw.edu/institute-technology/admission-requirements-bs-computer-engineering-systems
Washington State University	B.S. in Computer Engineering and B.S. in Electrical Engineering	https://admission.wsu.edu/academics/fos/Public/field.castle?id=7585 https://admission.wsu.edu/academics/fos/Public/field.castle?id=1602
Seattle University	B.S. in Electrical Engineering and Electrical Engineering with a specialization in Computer Engineering	https://www.seattleu.edu/scieng/ece/programs-of-study/electrical-engineering/ https://www.seattleu.edu/scieng/ece/programs-of-study/electrical-engineering-with-computer-engineering-specialization/

The following is a list of classes that satisfy Shoreline's 2016-2017 AS-T Track 2 degree requirements. Credits for a specific course may be used only once and may not be applied toward more than one distribution area. Course numbers with an "&" are common course numbers with content that is consistent across Washington state community colleges.

I. GENERAL EDUCATION CORE REQUIREMENTS | 20 CREDITS

COMMUNICATIONS —10 Credits

English &101
English &102, 230
Communication Studies &101

MULTICULTURAL UNDERSTANDING — 5 Credits

Communication Studies 203, 285
Gender and Women's Studies 284
History 245
Multicultural Studies 105

QUANTITATIVE / SYMBOLIC REASONING—5 Credits

Math &151

* Students planning to transfer to the University of Washington must consult Math Advising, mathadvising@shoreline.edu

II. DISTRIBUTION AREA REQUIREMENTS | 15 CREDITS

HUMANITIES—5 Credits
No more than 5 credits in 100 level foreign language.

General Humanities

American Ethnic Studies 106, 215
American Sign Language &121-&123
Art &100, 234
Art History 204, 210, 224-226
Chinese &121-&123
Cinema 201, 202
Communication Studies &101, &102, 203, &210, &220, 285
Drama &101
English &111-&113, 154, 200, 207, &220, &226-&228, 229, &244-&246, 247, 248, 257, 265, 271, 272, 281, 282, 287-289
French &121-&123
Honors 100
Humanities 111-113, 140, 275
Japanese &121-&123, &221-&223
Music 100, &105, 106, 108, 109, &141-&143, 150, 206, 224, &241-&243
Philosophy &101, 102, &115, 210, 240, 248, 267
Spanish &121-&123, &221-&223

Performance Skills /Applied Theory – 5 Credits Maximum

Art 109, 110, 121-123, 131-134, 144-146, 251-256, 260-262, 271-273
Communication Studies 140, &230, 244, 245, 247
Drama 144–146, 207–209, 224, 235, 244, 255
English &230, 279
Film 255-258, 266, 285, 286, 290
Music 114, 115, 118–120, 135, 136, 140, 144, 146, 147, 150–156, 161–167, 170, 175, 180, 184, 196, 204, 205, 207, 210-212, 225, 226, 251–253, 264, 268, 270, 280, 284, 296

SOCIAL SCIENCES— 5 Credits

American Ethnic Studies 106, 119, 229
Anthropology &100, &204, &206, &207, 215
Art History 201
Business &101
Child Advocacy Studies 102, 202, 285
Communication Studies &102
East Asia 218
Economics 100, &201, &202
Gender and Women's Studies 205, 215, 284, 285, 286, 288
Geography &100, 123, &200, 277
History &116-&118, &136, &137, &146-&148, 207, &214, &215, 218, &219, 234-238, 245-247, 256, 275
Honors 100
International Studies 101, 123, 200, 201, 205
Multicultural Studies 105, 205, 210, 238, 250
Philosophy &101, 102, &115, 210, 240, 248, 265, 267
Political Science &101, &202, &203, 221
Psychology &100, &200, 208, 209, 210, &220, 225, 236, 245
Sociology &101, 102, 112, &201, 202, 250, 288

III. ADDITIONAL SCIENCE | 5 – 6 CREDITS

Anthropology &205*
Astronomy &101
Biology 124, 126, 144, 150*, &170, 244, 249, 274, 275, 277
Chemistry &110, &121, &131, 171/181, 172/182, 173/183, &241/271, &242/272
Environmental Science &100, &101, 202
Geography 203, 204
Geology &101, &110, &115, &208
Nutrition &101*
Oceanography &101
Philosophy &120*
Psychology 202

** these courses may not meet requirements at some Baccalaureate Colleges or Universities.*

STUDENT INFORMATION

Name: ______________________________

Student I.D. No.: ______________________________

Major/Pathway(s): ______________________________

Specialty (if applicable): ______________________________

TRANSFER SCHOOLS OF INTEREST

1.

2.

3.

4.

Academic Goals

- ❒ Complete an A.A. or A.S. degree
- ❒ Prepare for transfer only—No degree
- ❒ High school completion program/ GED

Previous College Experience

- ❒ Transferred from another college
- ❒ Completed transfer credit evaluation
- ❒ Prior Learning Assessment

Qtr: Year:		Qtr: Year:		Qtr: Year:		Qtr: Year:	
COURSE	CR	COURSE	CR	COURSE	CR	COURSE	CR
Total Credits		Total Credits		Total Credits		Total Credits	

Notes:

Qtr: Year:		Qtr: Year:		Qtr: Year:		Qtr: Year:	
COURSE	CR	COURSE	CR	COURSE	CR	COURSE	CR
Total Credits		Total Credits		Total Credits		Total Credits	

Notes:

Qtr: Year:		Qtr: Year:		Qtr: Year:		Qtr: Year:	
COURSE	CR	COURSE	CR	COURSE	CR	COURSE	CR
Total Credits		Total Credits		Total Credits		Total Credits	

Notes: