



Engineering - General

Major Preparation Sheet 2016-2017

Engineering – What is it?

Engineering applies mathematics, science and technology to design, test, manufacture and improve new products, materials, structures and processes. Engineers interface directly with business and industry, and often specialize in specific areas to include Aeronautical Engineering, Bioengineering, Chemical, Civil and Environmental, Computer, Electrical, Industrial, Mechanical, Materials Science and Bioresource Engineering.

Areas of study in Chemistry/Biochemistry:

Calculus, Chemistry, Physics, Statics, Dynamics, Thermodynamics, Mechanics of Materials, Electronic Circuits, Engineering Problem Solving, Manufacturing Processes, Project Design, Project Management, Product Safety, Quality Control and Professional Ethics.

Where does my path start?

You will complete an Associate of Science-Transfer (AS-T) Track 2 at Shoreline.

Use the AS-T Track 2 **Degree Planning Guide** to understand the requirements for graduation.

Select the area(s) of engineering you would like to pursue and consult those Major Preparation Sheet(s).

Once you complete your Shoreline degree, you can transfer to a four-year school to earn a Bachelor of Science (B.S.) in Engineering.

Where can I go for help?

Program Faculty Advisors

Alison Armstrong	206-546-4698	aarmstrong3@shoreline.edu	Rm 2810
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Tiffany Meier	206-546-6953	tmeier@shoreline.edu	Rm 5231

For course information and entry codes, contact:
engineeringadvising@shoreline.edu, mathadvising@shoreline.edu,
chemistryadvising@shoreline.edu

General Academic Advising

FOSS (5000) Building, Rm. 5229
206-546-4559
advising@shoreline.edu
www.shoreline.edu/advising

International Student Academic Advising

9000 Building, Rm. 9302
206-546-4697
ieadvisors@shoreline.edu
www.shoreline.edu/international/advising/

Career Planning

www.shoreline.edu/job-career-services/

Where can I transfer?

The AS-T makes it possible for students to transfer to a number of public and private colleges and universities in the U.S. with junior standing. Washington State institutions and major programs are listed below.

Central Washington University (EET, MET)	University of Washington (AE, BE, BSE, CE, CHE, COMPE, EE, HCD, IE, MSE, ME)
Eastern Washington University (EE, ME, MET)	Washington State University (BE, CE, CHE, COMPE, EE, ME, MSE)
Gonzaga University (CE, COMPE, EE, ME)	Western Washington University (EE, IT, ManE, PCE)
Saint Martin’s University (CE, ME)	Seattle University (CE, COMPE, EE, ME)
Seattle Pacific University (ASE, COMPE, EE, ME)	Walla Walla U. (BE, CE, COMPE, EE, ME)

**Note: Engineering Majors at WA universities are designated as follows: Aeronautical (AE), Appropriate and Sustainable Engineering (ASE) Bioengineering (BE), Bioresource Science (BSE) Chemical Engineering (CHE), Civil (CE), Computer Engineering (COMPE) Electrical Engineering (EE), Electronics Engineering Technology (EET), Human Centered Design (HCD), Industrial (IE), Industrial Technology (IT), Manufacturing Engineering (ManE), Materials Science (MSE), Mechanical (ME), Mechanical Engineering Technology (MET), Plastics and Composites Engineering (PCE)*

What can I do with a Bachelor’s Degree in Engineering?

Engineers develop strong technical, problem solving, critical thinking and communication skills that apply to a variety of career fields, including research and development, product design, project management, product inspection, teaching, sales, manufacturing and consulting.

Potential employers include: Engineering firms, consulting firms, manufacturing companies, government agencies, colleges and universities, business and industry. For more, please visit <http://www.shoreline.edu/counseling-services/career-counseling.aspx>.

What courses should I take?*

I. GENERAL EDUCATION REQUIREMENTS 18 -20 Credits
ENGL &101 ENGL &102, &230, or CMST &101 One course in Multicultural Understanding Quantitative/Symbolic Reasoning (MATH &151)

II. DISTRIBUTION REQUIREMENTS 10 Credits
One course in Humanities <i>Recommended: CMST &220 or &230</i> One course in Social Sciences <i>Recommended: ECON &201</i>

III. PRE-MAJOR PROGRAM I 33 Credits									
Physics Sequence	<i>16.5 Credits</i>	QTR	GR	CR	Additional Math	<i>10 Credits</i>	QTR	GR	CR
PHYS &221	<i>Fall, Win</i>			5.5	MATH &152	<i>Every Quarter</i>			5
PHYS &222	<i>Win, Spr, Sum</i>			5.5	MATH &163	<i>Every Quarter</i>			5
PHYS &223	<i>Win, Spr</i>			5.5	Additional Science	<i>6.5 Credits</i>	QTR	GR	CR
					CHEM 171/181	<i>Every Quarter</i>			6.5

IV. PROGRAM-SPECIFIC COURSES 27 – 29 Credits

Any transfer courses count. A maximum of 5 credits for restricted/vocational course work. Below are some suggested courses, quarters they are offered, and number of credits. Consult with the Major Planning Sheet to select courses that align with your chosen area of study within engineering

						Program Specific Courses			QTR	GR	CR	
CHEM 172/182	<i>Win, Spr, Sum</i>	6.5	ENGR &114	<i>Fall, Win, Spr</i>	5	ENGR& 224	<i>Spr</i>	5	1.			
CS &121	<i>Every quarter</i>	5	ENGR 115	<i>Win, Spr, Sum</i>	5	ENGR& 225	<i>Fall, Win</i>	5	2.			
CS &141	<i>Every quarter</i>	5	ENGR &202			ENGR 240	<i>Win</i>	5	3.			
CS & 143	<i>Win, Spr, Sum</i>	5	ENGR &204	<i>Win</i>	5	MATH 207	<i>Spr, Fall</i>	5	4.			
ENGR 100	<i>Fall, Win, Spr</i>	4	ENGR 205	<i>Fall, Win, Spr</i>	3	MATH 208	<i>Fall, Win</i>	5	5.			
ENGR 102	<i>Fall</i>	5	ENGR& 214	<i>Spr, Fall</i>	5	MATH &264	<i>Spr</i>	5	6.			
ENGR &104	<i>Win</i>	5	ENGR& 215	<i>Win, Spr</i>	5							

What does your chosen four-year school require?

University engineering programs require specific courses for each major. This “Engineering, General” Planning Guide shows the minimum requirements for the Associate in Science Transfer-Track 2 degree. These minimum requirements will not usually meet admissions requirements into the junior year of a specific engineering major. It is recommended that you pursue the **Major Related Programs*** for one of the following engineering pathways as preparation for a four-year engineering degree. Consult the planning guides for those degrees for more information.

- Biological and Chemical Engineering (MRP)
- Computer and Electrical Engineering (MRP)
- Aeronautical, Civil, Industrial, Manufacturing, Materials Science and Mechanical Engineering, Plastics and Composites (MRP)

** A Major Related Program (MRP) prepares students for entrance into select majors at particular four-year schools. These programs have specific **required classes** within the AS-T degree, and will be shown on your transcript as a different type of completion than the general AS-T.*

Students are encouraged to study the schools and departments to which they plan to apply and work with their academic adviser to make a course plan. If you are preparing for an engineering program at the University of Washington (Seattle), please consult the UW College of Engineering handout.

**** This unofficial guide is intended to support you as you prepare for your major. Please consult with an advisor and your chosen four-year school(s), as program and admissions requirements vary and may change without notice.**