



Engineering Transfer Pathway Advising Guide

The engineering transfer department at Bellevue College is designed for students pursuing a four year bachelor's degree in engineering. The curriculum offered at Bellevue College will allow a student to fulfill pre-major requirements in order to transfer and apply for admission into a university department. In designing a program at Bellevue College, information should be obtained from the university that one plans to transfer to; including pre-major requirements from the specific engineering department that one is interested in.

Designing a Program of Study

Math and English

An assessment test is necessary or transcript documentation is needed in order to meet prerequisite requirements for all courses leading up to, and including, MATH& 151 (Calculus I), and for ENGL& 101 (English Composition I).

Contact Testing Services [www.bellevuecollege.edu/testing/placement/] to schedule an assessment testing session.

Science and Engineering

Science and engineering courses should be selected to meet the pre-major requirements of the four year institution engineering department. Preparatory science classes are available for students without any previous exposure to the sciences.

Humanities and Social Science

Courses should be selected so as to be transferable to the four year institution.

Evening Courses

Many engineering related courses are available in the evening. The availability of evening courses is more limited than during the day. Projected annual course offering information is located at the end of this document.

More Info

Visit [www.bellevuecollege.edu/transfer/] for transferring credits to BC.

For more information about Engineering or to schedule an advising appointment:

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| <ul style="list-style-type: none">- Engineering Transfer Website: [www.bellevuecollege.edu/engineering/]- Bellevue College Science Division Office (425)-564-2321- Engineering Transfer Department Chair..... (425)-564-2856 |
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Bellevue College - Associate in Science – Track II Degrees

Official Associate Degree requirements available at
[www.bellevuecollege.edu/worksheets/2022-23/transfer/]

Associate in Science Track II: Engineering (90 credits)	
DEGREE REQUIREMENTS <u>Written Communication Skills (5 Credits)</u> ENGL& 101 (5cr) English Composition <u>Mathematics Skills (10 Credits)</u> MATH& 151 (5cr) Calculus I MATH& 152 (5cr) Calculus II <u>Humanities/Social Science (15 Credits)</u> (at least 5 credits from each area + cultural diversity) <u>Chemistry Lab (5-6 Credits)</u> CHEM& 161 (6cr) General Chemistry I	<u>Physics Sequence (15-18 Credits)</u> PHYS 121 (6cr) General Physics I PHYS 122 (6cr) General Physics II PHYS 123 (6cr) General Physics III <u>Additional Math (5 Credits)</u> MATH& 153 (5cr) Calculus III <u>Electives</u> [Sufficient college credits to meet degree total of 90]

The following Major Related Program (MRP) Associate in Science Track II Degrees are designed for specific engineering disciplines and consequently have course requirements beyond the regular Associate in Science Track II Degree. The MRP Track II Degrees will allow students to transfer up to 110 applicable quarter credits to a Washington state four year institution.

Associate in Science Track II: MRP CIVIL and MECHANICAL Engineering (90~106 credits)	
DEGREE REQUIREMENTS Same mandatory courses of the Associate in Science Track II with the following required courses: MATH 208 (5cr) Linear Algebra MATH 238 (5cr) Differential Equations CHEM& 162 (6cr) General Chemistry II ENGR& 114 (4cr) Engineering Graphics ENGR& 214 (4cr) Statics ENGR& 225 (4cr) Mechanics of Materials ENGR& 215 (4cr) Dynamics	<u>ADDITIONAL ENGINEERING, MATH AND SCIENCE</u> [Select three courses from the following:] ENGR 111 (3cr) Engineering Problems ENGR& 204 (4cr) Electrical Circuits ENGR& 224 (4cr) Thermodynamics ENGL& 235 (5cr) Technical Writing MATH 240 (5cr), MATH& 254 (5cr), MATH 255 (5cr) CS210 (5cr) Computer Science I

Associate in Science Track II: MRP ELECTRICAL and COMPUTER Engineering (90~104 credits)	
DEGREE REQUIREMENTS Same mandatory courses of the Associate in Science Track II with the following required courses: MATH 208 (5cr) Linear Algebra MATH 238 (5cr) Differential Equations ENGR& 204 (4cr) Electrical Circuits CS210 (5cr) Computer Science I CS211 (5cr) Computer Science II	<u>ADDITIONAL ENGINEERING, MATH AND SCIENCE</u> [Select four courses from the following:] ENGR 111 (3cr) Engineering Problems ENGR& 214 (4cr) Statics ENGR& 215 (4cr) Dynamics ENGR& 224 (4cr) Thermodynamics ENGL& 235 (5cr) Technical Writing BIOL& 211 (6cr), CHEM& 162 (6cr) MATH 240 (5cr), MATH& 254 (5cr), MATH 255 (5cr)

Associate in Science Track II: MRP CHEMICAL and BIO Engineering (90~105 credits)	
DEGREE REQUIREMENTS Same mandatory courses of the Associate in Science Track II with the following required courses: MATH 238 (5cr) Differential Equations CHEM& 162 (6cr) General Chemistry II CHEM& 163 (6cr) General Chemistry III CHEM& 261 (6cr) Organic Chemistry I CHEM& 262 (6cr) or BIOL& 211 (6cr)	<u>ADDITIONAL ENGINEERING, MATH AND SCIENCE</u> [Select three courses from the following:] ENGR& 204 (4cr) Electrical Circuits ENGR& 214 (4cr) Statics ENGL& 235 (5cr) Technical Writing BIOL& 211, BIOL& 212, CHEM& 262 MATH 208 (5cr), MATH 240 (5cr) MATH& 254 (5cr), MATH 255 (5cr) CS210 (5cr) Computer Science I

Graduation

Graduation applications are available at the Student Service Center or online at [\[www.bellevuecollege.edu/graduation/apply/\]](http://www.bellevuecollege.edu/graduation/apply/)

Be sure to confirm four year institution transfer application deadlines as well.

Bellevue College - Engineering Transfer Advising Specifics*

Advising notes for University of Washington (UW) and Washington State University (WSU):

[Note: BC and UW are on quarters, WSU on semesters.]

MATHEMATICS:

Preparatory Math sequence:

MATH 098 -> 099 -> MATH& 141 -> 142 -> 151

(UW)

MATH& 151 transfers to UW as MATH 124

MATH& 152 transfers to UW as MATH 125

MATH& 153 and MATH& 254

transfer to UW as MATH 126

MATH 208 and MATH& 254

transfer to UW as a MATH 308

MATH 238 transfers to UW as MATH 207

(Note: UW Engineering departments consider
UW MATH 207 comparable to UW MATH 307)

MATH 240 transfers to UW as AMATH 301

MATH 255 transfers to UW as MATH 224

(WSU)

MATH& 151, 152, 153

transfer to WSU as MATH 171, 172

MATH& 254 transfers to WSU as MATH 273

MATH 208 transfers to WSU as MATH 220

MATH 238 transfers to WSU as MATH 315

HUMANITIES & SOCIAL SCIENCE:

If planning to earn an AS Track II, the 15 credit minimum must be composed of at least 5 credits of Humanities and 5 credits of Social Science courses and meet cultural diversity requirement. See: [\[https://catalog.bellevuecollege.edu/preview_program.php?catoid=9&poid=2303\]](https://catalog.bellevuecollege.edu/preview_program.php?catoid=9&poid=2303)

Some Recommended Courses:

Humanities: CMST& 101 – Intro to Communication

CMST& 220 – Public Speaking

CMST 250 – Communication in a
Diverse Workplace

Social Science: ECON& 201, 202 – Micro and Macro

Advising Note: Two years in high school or two quarters in college of a foreign language are required for admission to the UW. WSU transfers applicants with fewer than 40 college quarter credits must also meet this requirement.

CHEMISTRY and PHYSICS:

CHEM& 121, PHY& 100 or PHY 114 are good introductory courses for students with no previous background in the subject.

PHYS 121,122,123

transfer to UW as PHYS 121,122,123

transfer to WSU as PHYS 201, 202

CHEM& 161,162,163

transfer to UW as CHEM 142,162,152 respectively.

[UW engineering departments that require only two quarters of CHEM will accept BC CHEM& 161 and CHEM& 162 as meeting that requirement.]

transfer to WSU as CHEM 105, 106

CHEM& 261,262,263

transfer to UW as CHEM 237,238,239

transfer to WSU as CHEM 345, 348

BIOL& 211,212,213

transfer to UW as BIOL 180,200,220

transfer to WSU as BIOL 106, 107

ENGINEERING ELECTIVES

Students should customize their choice of ENGR courses to meet the requirements of the engineering departments to which they wish to apply.

ENGR& 114 transfers to UW as ME 123

ENGR& 214 transfers to UW as AA 210

ENGR& 225 transfers to UW as CEE 220

ENGR& 215 transfers to UW as ME 230

ENGR& 224 transfers to UW as AA 260

ENGR& 204 transfers to UW as EE 215

ENGR& 214 transfers to WSU as CE 211

ENGR& 225 transfers to WSU as CE 215

ENGR& 215 transfers to WSU as ME 212

ENGR& 224 transfers to WSU as ME 301

MICELLANEOUS:

CS210 transfers to UW as CSE 142

CS211 transfers to UW as CSE 143

ENGL& 235 transfers to UW as HCDE 231

***Use [\[www.bellevuecollege.edu/engineering/universities/\]](http://www.bellevuecollege.edu/engineering/universities/) for up to date transferability equivalency information to public and private universities in Washington State.**

Bellevue College - Engineering Course Descriptions

<p>ENGR& 114 - Engineering Graphics (4 Credits)</p> <p>Introduces methods of communicating technical information in engineering design and research. Topics include freehand sketching, lettering, scales, drawing layout, graphical vector methods, orthographic projection, pictorials, auxiliary views, section views, dimensioning, thread specifications, and tolerances. Includes Computer-Aided Design with parametric solid modeling, drawing production and assemblies.</p> <p>Prerequisite: MATH&141 (or higher), or placement by assessment in MATH&142 or above.</p>	<p>ENGR& 215 - Dynamics (4 Credits)</p> <p>Surveys the dynamics of particles and rigid bodies using vector analysis. Specific topics include kinematics, kinetics, momentum, and energy principles for particles and rigid bodies, as well as Euler's Equations of Motion..</p> <p>Prerequisite: ENGR& 214</p>
<p>ENGR& 204 - Electrical Circuits (4 Credits)</p> <p>Introduces fundamental concepts of electrical science. Topics include resistors, sources, capacitors, inductors, and operational amplifiers as individual components and as circuit systems. Also covers simultaneous algebraic equations and differential equations in solution methods.</p> <p>Recommended: PHYS 122 and MATH 238</p>	<p>ENGR& 224 - Thermodynamics (4 Credits)</p> <p>Introduces basic principles of thermodynamics from a predominately macroscopic point of view. Topics include the basic laws of thermodynamics as relating to energy transformations and state changes in engineering problems.</p> <p>Recommended: CHEM& 162 and MATH& 152</p>
<p>ENGR& 214 - Statics (4 Credits)</p> <p>Explores principles of statics, vector algebra, force-couple relationships, equilibrium analysis, structures, area properties, beams, and friction.</p> <p>Prerequisite: PHYS 121 or MATH& 254</p>	<p>ENGR& 225 - Mechanics of Materials (4 Credits)</p> <p>Introduces the concepts of stress, deformation, and strain in solid materials. Topics include basic relationships between loads on structural and machine elements such as rods, shafts, and beams, and the stresses, deflection and load-carrying capacity of these elements under tension, compression, torsion, bending, and shear forces.</p> <p>Prerequisite: ENGR& 214</p>

Bellevue College Class Schedule

Class schedule for upcoming quarters is available at [www.bellevuecollege.edu/classes/].

Engineering Professional Training Degrees or Certificates

Information for Washington colleges that offer engineering related two year technology degrees or certificates is available at [www.bellevuecollege.edu/engineering/technology/].

Some example programs are:

- Engineering Technology (Aerospace, Civil and Environmental, Electrical, Mechanical)
- Advanced Manufacturing
- Construction Management
- Composites Manufacturing
- Drafting
- HVAC & Refrigeration
- Transportation & Mechanical Technology
- Welding & Fabrication