



Engineering Transfer Advising Guide

September 2007
(Revision A)

The engineering program at Bellevue Community College is designed for students pursuing a four year bachelors degree in engineering. The curriculum offered at BCC will allow a student to fulfill pre-major requirements for entry into an engineering department. Requirements vary depending on the engineering discipline that one plans to study. In designing a program at BCC, information should be obtained from the four year institution that one plans to transfer to; in addition, information about pre-major requirements should be obtained from the specific engineering department that one is interested in.

Designing a Program of Study

Math and English

The first step in planning your program is to determine the appropriate placement in Mathematics and English. An assessment test is required or transcript documentation is required for all courses leading up to, and including, Math 124 (Calculus), and for English 101. Contact the Assessment Office (Room B132 - Phone:425-564-2243).

Science and Engineering

In selecting science and engineering courses, it is important to refer to 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. Engineering courses are selected to meet the requirements of the department one is pursuing.

Humanities and Social Science

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

Evening Courses

Many courses in the Engineering Transfer Program are available in the evening. However, the availability of evening courses is more limited than during the day; thus, careful planning and scheduling of an evening program is vital.

More Info

For more information or to schedule an advising appointment:

- Engineering Transfer Website - <http://scidiv.bcc.ctc.edu/engr/>
 - BCC Science Division Office (425)-564-2321
 - Engineering Transfer Program Chair..... (425)-564-2856
- Mail: 3000 Landerholm Circle – Bellevue, WA 98007

Associate in Science – Track II Degrees (<http://bellevuecollege.edu/worksheets/transfer/>)

Associate in Science Track II: Engineering (90 credits)

DEGREE REQUIREMENTS

Written Communication Skills (5 Credits)
 English Composition
Mathematics Skills (10 Credits)
 MATH 124 (5cr) Calculus I
 MATH 125 (5cr) Calculus II
Humanities/Social Science (15 Credits)
 (at least 5 credits from each area)
Chemistry Lab (5-6 Credits)
 CHEM 140 (6cr)

Physics Sequence (15-18 Credits)
 PHYS 121 (6cr)
 PHYS 122 (6cr)
 PHYS 123 (6cr)
Computer Programming Course (5 Credits)
 CS210 (5cr) Computer Science I
Additional Math (5 Credits)
 MATH 126 (5cr) Calculus III

ELECTIVES

[Sufficient credits to meet minimum degree total of 90]

Associate in Science Track II: Civil and Mechanical Engineering MRP* (90~106 credits)

DEGREE REQUIREMENTS

Written Communication Skills (5 Credits)
 English Composition
Mathematics Skills (25 Credits)
 MATH 124 (5cr) Calculus I
 MATH 125 (5cr) Calculus II
 MATH 126 (5cr) Calculus III
 MATH 208 (5cr) Linear Algebra
 MATH 238 (5cr) Differential Equations
Humanities/Social Science (15 Credits)
 (at least 5 credits from each area)
Chemistry Lab (10-12 Credits)
 CHEM 140 (6cr)
 CHEM 150 (6cr)
Physics Sequence (15-18 Credits)
 PHYS 121 (6cr)
 PHYS 122 (6cr)
 PHYS 123 (6cr)

Engineering Courses (16 Credits)
 ENGR 123 (4cr) Engr. Graphics
 ENGR 210 (4cr) Statics
 ENGR 220 (4cr) Mechanics of Materials
 ENGR 230 (4cr) Dynamics
Computer Programming Course (5 Credits)
 CS210 (5cr) Computer Science I

ADDITIONAL ENGINEERING, MATH AND SCIENCE

[Select **two** courses from the following:]
 ENGR 111 (3cr) Engr. Problems
 ENGR 200 (3cr) CAD
 ENGR 215 (4cr) Electrical Circuits
 ENGR 260 (4cr) Thermodynamics
 ENGL 270 (5cr) Report Writing
 MATH 227 (5cr) Several Variable Calculus

Associate in Science Track II: Electrical and Computer Engineering MRP* (90~108 credits)

DEGREE REQUIREMENTS

Written Communication Skills (5 Credits)
 English Composition
Mathematics Skills (25 Credits)
 MATH 124 (5cr) Calculus I
 MATH 125 (5cr) Calculus II
 MATH 126 (5cr) Calculus III
 MATH 208 (5cr) Linear Algebra
 MATH 238 (5cr) Differential Equations
Humanities/Social Science (15 Credits)
 (at least 5 credits from each area)
Chemistry Lab (5-6 Credits)
 CHEM 140 (6cr)
Physics Sequence (15-18 Credits)
 PHYS 121 (6cr)
 PHYS 122 (6cr)
 PHYS 123 (6cr)

Engineering Courses (8 Credits)
 ENGR 210 (4cr) Statics
 ENGR 215 (4cr) Electrical Circuits
Computer Programming Course (10 Credits)
 CS210 (5cr) Computer Science I
 CS211 (5cr) Computer Science II

ADDITIONAL ENGINEERING, MATH AND SCIENCE

[Select **three** courses from the following:]
 ENGR 111 (3cr) Engr. Problems
 ENGR 260 (4cr) Thermodynamics
 ENGL 270 (5cr) Report Writing
 BIOL 201 (6cr)
 MATH 227 (5cr) Several Variable Calculus

Associate in Science Track II: Chemical and Bio Engineering MRP* (90~105 credits)

DEGREE REQUIREMENTS

Written Communication Skills (5 Credits)

English Composition

Mathematics Skills (20 Credits)

MATH 124 (5cr) Calculus I

MATH 125 (5cr) Calculus II

MATH 126 (5cr) Calculus III

MATH 238 (5cr) Differential Equations

Humanities/Social Science (15 Credits)

(at least 5 credits from each area)

Chemistry Lab (15-18 Credits)

CHEM 140 (6cr)

CHEM 150 (6cr)

CHEM 160 (6cr)

Physics Sequence (15-18 Credits)

PHYS 121 (6cr)

PHYS 122 (6cr)

PHYS 123 (6cr)

Additional Science (10-12 Credits)

CHEM 231 (6cr) Organic Chemistry

CHEM 232 (6cr) or BIOL 201 (6cr)

Computer Programming Course (5 Credits)

CS210 (5cr) Computer Science I

ADDITIONAL ENGINEERING, MATH AND SCIENCE

[Select **two** courses from the following:]

ENGR 215, ENGR 260

ENGL 270

BIOL 201, 202 CHEM 232

MATH 208, 227

*MRP – Major Related Program

BCC Engineering Transfer Advising Specifics

MATHEMATICS:

Preparatory Math sequence:

MATH 098 -> 099 -> 105 -> 120 -> 124

MATH 124 transfers to UW as MATH 124

MATH 125 transfers to UW as MATH 125

MATH 126 & MATH 227

transfer to UW as MATH 126

MATH 238 transfers to UW as MATH 307

MATH 208 & MATH 227

transfer to UW as a MATH 308

HUMANITIES & SOCIAL SCIENCE:

The 15 credit minimum must be composed of at least 5 credits of Humanities and 5 credits of Social Science courses.

Effective Fall 2005, newly admitted students must complete General Education requirements; in particular, the Cultural Traditions General Education outcome must be satisfied (see AS Track II worksheets for more information).

Recommended Courses:

Humanities:

Speech 220 – Introduction to Public Speaking

Social Science:

Economics 201 & 200 – Micro and Macro Economics

Advising Note: Two years in high school or two quarters in college of a foreign language are required for admission to the UW.

MICELLANEOUS:

CS210 transfers to UW as CSE 142.

CS211 transfers to UW as CSE 143.

ENGL 270 transfers to UW as TC 231

CHEMISTRY and PHYSICS:

CHEM 101, PHY 106 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

CHEM 140,150,160

transfer to UW as CHEM 142,152,162

CHEM 231,232,233

transfer to UW as CHEM 237,238,239

BIOL 201,202,203

transfer to UW as BIOL 180,200,220

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 123 transfers to UW as ME 123

ENGR 210 transfers to UW as AA 210

ENGR 220 transfers to UW as CEE 220

ENGR 230 transfers to UW as ME 230

ENGR 260 transfers to UW as ChemE 260

ENGR 215 transfers to UW as EE 215

ENGR 123 & ENGR 200

transfer to WSU as ME 104

ENGR 210 transfers to WSU as CE 211

ENGR 220 transfers to WSU as CE 215

ENGR 230 transfers to WSU as ME 212

ENGR 260 transfers to WSU as ME 301

(See <http://scidiv.bcc.ctc.edu/Engr/links.htm> for more transferability equivalency information.)

BCC Engineering Course Descriptions

ENGR 110 - Engineering Orientation (2 Credits) Includes lectures, discussions, and reading assignments on the functions of engineering, and the various fields of the profession. Offered on pass/no credit basis only.	ENGR 210 - Statics (4 Credits) Principles of statics, vector algebra, force-couple relationships, equilibrium analysis, structures, area properties, beams and friction. Vector algebra used throughout the course. Prerequisite: PHYS 121 or MATH 126 or ENGR 111.
ENGR 123 - Engineering Graphics (4 Credits) Freehand sketching, lettering, scales, use of instruments, drawing layout, orthographic projection, pictorials, auxiliary views, section views, dimensioning, descriptive geometry, thread and fastener specifications and tolerances. Includes communication of technical information in engineering design and research and an introduction to computer-aided drafting. Prerequisite: MATH 092 or 099.	ENGR 220 - Introduction to Mechanics of Materials (4 Credits) Introduces the concepts of stress, deformation and strain in solid materials. Development of 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. Prerequisite: ENGR 210
ENGR 200 - Computer-Aided Drafting I (3 Credits) Uses a commercial CAD software package to introduce the fundamentals of drawing with a CAD system. Students use drawing and editing commands to create and revise a variety of drawings. Includes description of CAD systems, advantages, applications and operational skills. Prerequisite: ENGR 123 or permission of instructor.	ENGR 230 - Dynamics (4 Credits) Offers a general treatment of the dynamics of particles and rigid bodies using vector analysis. Kinematics, kinetics, momentum and energy principles for particles and rigid bodies are all considered, as well as, Euler's Equations of Motion. Prerequisite: ENGR 210.
ENGR 215 - Electrical Circuits (4 Credits) Fundamental concepts of electrical science are introduced. Resistors, sources, capacitors, inductors and operational amplifiers are presented as individual components and as circuit systems. Solution methods using simultaneous algebraic equations and differential equations are applied. Prerequisite: PHYS 122 & MATH 238.	ENGR 260 - Thermodynamics (4 Credits) Introduction to the basic principles of thermodynamics, from a predominately macroscopic point of view. Development of the basic laws of thermodynamics together with application to energy transformations and state changes in engineering problems. Prerequisite: Recommend CHEM 150 & MATH 125.

Engineering Transfer Course Availability List

PROJECTED ANNUAL COURSE OFFERING – ENGINEERING LIST 2007– 2008

D = Course to be offered during the day. E = Evening offering. W = Weekend offering. O = Online

Course	Quarter:					Quarter:			
	Summer	Fall	Winter	Spring		Summer	Fall	Winter	Spring
ENGR 110		D			MATH 105	DE	DEO	DEO	DEO
ENGR 123		D	DE	D	MATH 120	DE	DE	DE	DE
ENGR 200				D	MATH 124	D	DE	DE	DE
ENGR 210		E	D	D	MATH 125	D	DE	DE	DE
ENGR 220		D	E	D	MATH 126	D	D	D	DE
ENGR 230			D	E	MATH 208		E	D	
ENGR 260		E		D	MATH 227		DE	D	DE
ENGR 215				E	MATH 238			E	D
ENGL 270	DO	DWEO	DEO	DEO	CHEM 140	D	DE	DE	D
CS 210		DE	DE	DE	CHEM 150	D	DE	DE	DE
CS 211		D	DE	E	CHEM 160	E	DE		DE
					PHYS 121		D	DE	E
					PHYS 122	E		D	DE
					PHYS 123	E	E		D

Full listing is available at <http://bellevuecollege.edu/classes/projected/>