

Appendix A

Associate of Science degrees in Natural Sciences or Mathematics at Bergen Community College

to

Bachelor of Science and Bachelor of Arts degrees at William Paterson University College of Science and Health

This Transfer Articulation Agreement is meant to cover students graduating with a Bergen Community College Associate of Science (A.S.) degree in Natural Sciences or Mathematics with the following options:

General

Biology

Biotechnology

Chemistry

Computer Science

Mathematics

Physics

entering the following Bachelor of Science (B.S.) and Bachelor of Arts (B.A.) programs at William Paterson University College of Science and Health:

Biology-General - B.S.

Biology-Ecology - B.S.

Biology-Physiology and Behavior - B.S.

Biotechnology - B.S.

Chemistry - B.S.

Computer Science - B.S.

Mathematics - B.A.

Mathematics - B.S.

Environmental Science - B.S.

Integrated Math & Science - Env. Science - B.A.

Integrated Math & Science - Biology - B.A.

Integrated Math & Science - Chemistry - B.A.

Integrated Math & Science - Mathematics - B.A.

Program	Credits	Courses at Bergen Community College (22-24 program required credits in Math, Natural Sciences, and Technology electives)	Equivalence at William Paterson University
<i>Natural Sciences or Mathematics-General Option-A.S. to Biology-General-B.S.; Biology-Ecology-B.S.; Biology-Physiology and Behavior-B.S.; AND Biotechnology B.S.</i>	4	BIO 101 General Biology I Lec. & Lab (elective)	BIO 1630 General Biology I (required)
	4	CHM 140 General Chemistry I Lec. & CHM 141 General Chemistry I Lab (elective)	CHEM 1600 General Chemistry I (required)
	4	CHM 240 General Chemistry II Lec. & CHM 241 General Chemistry II Lab (elective)	CHEM 1620 General Chemistry II (required)
	4	PHY 186 General Physics I [algebra-based] (elective) Or PHY 280 Physics I [calculus-based] (elective)	PHYS 2550 College Physics I [algebra-based] (prerequisite) Or PHYS 2600 General Physics I [calculus-based] (prerequisite)
	4	MAT 280 Calculus I (required)	MATH 1600 Calculus I (prerequisite)

Program	Credits	Courses at Bergen Community College (23-24 program required credits & 12 Math/Nat Sci/Tech elective credits)	Equivalence at William Paterson University
<i>Natural Sciences or Mathematics-Biology Option-A.S. to Biology-General-B.S.; Biology-Ecology-B.S.; Biology-Physiology and Behavior-B.S.; AND Biotechnology B.S.</i>	4	BIO 101 General Biology I Lec. & Lab (required)	BIO 1630 General Biology I (required)
	4	BIO 203 General Biology II Lec. & Lab (required)	BIO 1640 General Biology II (not required for Biotechnology)
	4	CHM 140 General Chemistry I Lec. & CHM 141 General Chemistry I Lab (required)	CHEM 1600 General Chemistry I (required)
	4	CHM 240 General Chemistry II Lec. & CHM 241 General Chemistry II Lab (required)	CHEM 1620 General Chemistry II (required)
	4	PHY 186 General Physics I [algebra-based] (math/nat sci/tech elective) Or PHY 280 Physics I [calculus-based] (math/nat sci/tech elective)	PHYS 2550 College Physics I [algebra-based] (prerequisite) Or PHYS 2600 General Physics I [calculus-based] (prerequisite)
	4	MAT 280 Calculus I (required choice)	MATH 1600 Calculus I (prerequisite)

Program	Credits	Courses at Bergen Community College (23 program required credits & 12 Math/Nat Sci/Tech required credits)	Equivalence at William Paterson University
<i>Natural Sciences or Mathematics- Biotechnology Option- A.S. to Biology-General-B.S.; Biology-Ecology-B.S.; Biology-Physiology and Behavior-B.S.; AND Biotechnology B.S.</i>	4	BIO 101 General Biology I Lec. & Lab (required)	BIO 1630 General Biology I (required)
	4	BIO 203 General Biology II Lec. & Lab (required)	BIO 1640 General Biology II (not required for Biotechnology)
	4	CHM 140 General Chemistry I Lec. & CHM 141 General Chemistry I Lab (required)	CHEM 1600 General Chemistry I (required)
	4	CHM 240 General Chemistry II Lec. & CHM 241 General Chemistry II Lab (required)	CHEM 1620 General Chemistry II (required)
	4	MAT 280 Calculus I (required)	MATH 1600 Calculus I (prerequisite)

Program	Credits	Courses at Bergen Community College (24 program required credits & 12 Math/Nat Sci/Tech required credits)	Equivalence at William Paterson University
<i>Natural Sciences or Mathematics - Chemistry Option- A.S. to Chemistry-B.A. or Chemistry-B.S.</i>	4	CHM 140 General Chemistry I Lec. & CHM 141 General Chemistry I Lab (required)	CHEM 1600 General Chemistry I (required)
	4	CHM 240 General Chemistry II Lec. & CHM 241 General Chemistry II Lab (required)	CHEM 1620 General Chemistry II (required)
	4	CHM 260 Organic Chemistry I (required)	CHEM 2570 Organic Chemistry I (required)
	4	CHM 262 Organic Chemistry II (required)	CHEM 2580 Organic Chemistry II (required)
	4	MAT 280 Calculus I (required)	MATH 1600 Calculus I (prerequisite)
	4	MAT 281 Calculus II (required)	MATH 1610 Calculus II (required)
	4	PHY 280 Physics I [calculus-based] (required)	PHYS 2600 General Physics I [calculus- based] (prerequisite)
	4	PHY 290 Physics II [calculus-based] (required)	PHYS 2610 General Physics II [calculus- based] (required)

Program	Credits	Courses at Bergen Community College (22-24 program required credits & 12 Math/Nat Sci required credits)	Equivalence at William Paterson University
<i>Natural Sciences or Mathematics – Mathematics Option-A.S. to Mathematics-B.A. or Mathematics-B.S.</i>	4	MAT 280 Calculus I (<i>required</i>)	MATH 1600 Calculus I (<i>prerequisite</i>)
	4	MAT 281 Calculus II (<i>required</i>)	MATH 1610 Calculus II (<i>required</i>)
	4	MAT 282 Calculus III (<i>required</i>)	MATH 2010 Calculus III (<i>required</i>)
	4	MAT 283 Differential Equations (<i>required</i>)	MATH 3220 Differential Equations (<i>required</i>)
	4	MAT 286 Linear Algebra (<i>required</i>)	MATH 2020 Linear Algebra (<i>required</i>)
	4	PHY 280 Physics I Lec. & Lab [calculus- based] (<i>required natural science elective</i>)	PHYS 2600 General Physics I [calculus-based] (<i>prerequisite</i>)
	4	PHY 290 Physics II Lec. & Lab [calculus- based] (<i>required natural science elective</i>)	PHYS 2610 General Physics II [calculus-based] (<i>required</i>)

Program	Credits	Courses at Bergen Community College (24 program required credits & 12 Math/Nat Sci required credits)	Equivalence at William Paterson University
<i>Natural Sciences or Mathematics – Physics Option-A.S. to Chemistry-B.A. Chemistry-B.S. Mathematics-B.A. Mathematics-B.S.</i>	4	MAT 280 Calculus I (<i>required</i>)	MATH 1600 Calculus I (<i>prerequisite</i>)
	4	MAT 281 Calculus II (<i>required</i>)	MATH 1610 Calculus II (<i>required</i>)
	4	MAT 282 Calculus III (<i>required</i>)	MATH 2010 Calculus III (<i>required for Math BA & BS</i>)
	4	PHY 280 Physics I Lec. & Lab [calculus- based] (<i>required</i>)	PHYS 2600 General Physics I [calculus-based] (<i>prerequisite</i>)
	4	PHY 290 Physics II Lec. & Lab [calculus- based] (<i>required</i>)	PHYS 2610 General Physics II [calculus-based] (<i>required</i>)
	4	PHY 291 Physics III Lec. & Lab [calculus- based] (<i>required</i>)	PHYS 2620 General Physics III [calculus-based] (<i>one choice from required physics minor electives</i>)

Program	Credits	Courses at Bergen Community College (22-24 program required credits & 12 Nat Sci required elective credits)	Equivalence at William Paterson University
<i>Natural Sciences or Mathematics - Computer Science Option-A.S. to Computer Science- B.S.</i>	3	CIS 165 Fundamentals of Programming (required)	Elective Credit
	4	CIS 265 Advanced Programming Concepts (required)	CS 2300 Computer Science I (required)
	3	CIS 271 Computer Org. & Assembly Lang. (required)	CS 2800 Computer and Assembler Language (required)
	4	CIS 277 Data Structures & Algorithms (required)	CS 3420 Data Structures (required)
	4	CIS 288 Discrete Math for Comp. Sci. (required)	CS 2600 Discrete Structures (required)
	4	MAT 280 Calculus I (required)	MATH 1600 Calculus I (prerequisite)
	4	MAT 281 Calculus II (required)	MATH 1610 Calculus II (required)
	4	CHM 140 General Chemistry I Lec. & CHM 141 General Chemistry I Lab (required natural science elective choice)	CHEM 1600 General Chemistry I (prerequisite)
	4	CHM 240 General Chemistry II Lec. & CHM 241 General Chemistry II Lab (required natural science elective choice)	CHEM 1620 General Chemistry II (one required second semester choice)

Program	Credits	Courses at Bergen Community College (22-24 program required credits in Math, Natural Sciences, and Technology electives)	Equivalence at William Paterson University
<i>Natural Sciences or Mathematics – General Option-A.S. to Environmental Science-B.S.</i>	4	BIO 101 General Biology I (elective)	BIO 1630 General Biology I (prereq)
	4	BIO 108 Intro to Env. Science Lec. & Lab (elective)	ENV 1100 Env. Sustainability (required)
	4	CHM 140 General Chemistry I Lec. & CHM 141 General Chemistry I Lab (elective)	CHEM 1600 General Chemistry I (required)
	4	CHM 240 General Chemistry II Lec. & CHM 241 General Chemistry II Lab (elective)	CHEM 1620 General Chemistry II (required)
	4	PHY 113 Geology Lec. & Lab (elective)	ENV 1150 General Geology (required)
	4	MAT 280 Calculus I (required)	MATH 1600 Calculus I (prereq)
	4	PHY 280 Physics I Lec. & Lab [calculus- based] (elective)	PHYS 2600 General Physics I [calculus-based] (prereq)
	4	PHY 290 Physics II Lec. & Lab [calculus- based] (elective)	PHYS 2610 General Physics II [calculus-based] (required)

Program	Credits	Courses at Bergen Community College	Equivalence at William Paterson University
<i>[Check with BCC STEM Counselor for specific BCC degree]</i> <i>transferable to</i> <i>Integrated Math & Science - Environmental Science B.A.</i>	4	CHM 140 General Chemistry I Lec. & CHM 141 General Chemistry I Lab	CHEM 1600 General Chemistry I (<i>required</i>)
	4	CHM 240 General Chemistry II Lec. & CHM 241 General Chemistry II Lab	CHEM 1620 General Chemistry II (<i>required</i>)
	3	CIS 158 Intro to Computer Science	CS 2010 Computer & Info Tech (<i>required</i>)
	4	PHY 113 Geology	ENV 1150 General Geology (<i>required</i>)
	4	PHY 185 Intro to Physics	PHY 1100 Intro to Physics (<i>required</i>)

Program	Credits	Courses at Bergen Community College	Equivalence at William Paterson University
<i>[Check with BCC STEM Counselor for specific BCC degree]</i> <i>transferable to</i> <i>Integrated Math & Science - Biology B.A.</i>	4	BIO 101 General Biology I	BIO 1630 General Biology I (<i>required</i>)
	4	BIO 203 General Biology II	BIO 1640 General Biology II (<i>required</i>)
	4	CHM 140 General Chemistry I Lec. & CHM 141 General Chemistry I Lab	CHEM 1600 General Chemistry I (<i>required</i>)
	4	CHM 240 General Chemistry II Lec. & CHM 241 General Chemistry II Lab	CHEM 1620 General Chemistry II (<i>required</i>)
	3	CIS 158 Intro to Computer Science	CS 2010 Computer & Info Tech (<i>required</i>)
	4	PHY 185 Intro to Physics	PHY 1100 Intro to Physics (<i>required</i>)

Program	Credits	Courses at Bergen Community College	Equivalence at William Paterson University
<i>[Check with BCC STEM Counselor for specific BCC degree]</i> <i>transferable to</i> <i>Integrated Math & Science - Chemistry B.A.</i>	4	CHM 140 General Chemistry I Lec. & CHM 141 General Chemistry I Lab	CHEM 1600 General Chemistry I (<i>prerequisite</i>)
	4	CHM 240 General Chemistry II Lec. & CHM 241 General Chemistry II Lab	CHEM 1620 General Chemistry II (<i>required</i>)
	4	CHM 260 Organic Chemistry I	CHEM 2570 Organic Chemistry I (<i>required</i>)
	4	CHM 262 Organic Chemistry II	CHEM 2580 Organic Chemistry II (<i>required</i>)
	3	CIS 158 Intro to Computer Science	CS 2010 Computer & Info Tech (<i>required</i>)
	4	PHY 185 Intro to Physics	PHY 1100 Intro to Physics (<i>required</i>)

Program	Credits	Courses at Bergen Community College	Equivalence at William Paterson University
<i>[Check with BCC STEM Counselor for specific BCC degree]</i> <i>transferable to</i> <i>Integrated Math & Science - Mathematics B.A.</i>	4	CHM 140 General Chemistry I Lec. & CHM 141 General Chemistry I Lab	CHEM 1600 General Chemistry I <i>(required)</i>
	4	CHM 240 General Chemistry II Lec. & CHM 241 General Chemistry II Lab	CHEM 1620 General Chemistry II <i>(required)</i>
	3	CIS 158 Intro to Computer Science	CS 2010 Computer & Info Tech. <i>(required)</i>
	4	MAT 280 Calculus I	MATH 1600 Calculus I <i>(required)</i>
	4	MAT 281 Calculus II	MATH 1610 Calculus II <i>(required)</i>
	4	MAT 286 Linear Algebra	MATH 2020 Linear Algebra <i>(required)</i>
	4	PHY 185 Intro to Physics	PHY 1100 Intro to Physics <i>(required)</i>

Note:

1. William Paterson University recommends students to take two semesters of one foreign language at the community college. Two semesters of American Sign Language can also fulfill the foreign language requirement.
2. William Paterson University will accept all associate degree credits under this program-to-program articulation agreement, including up to half of the William Paterson University major required credits, from New Jersey community college students who enroll at William Paterson University Fall 2015 and beyond.