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## Biological Sciences

### Degree Pathway

An Associate of Science provides a general education degree designed for students planning to transfer to four-year colleges and universities and pursue, in general, majors in science (computer, natural, physical, and social sciences), mathematics, and business. Of the 60 total credits needed to complete this degree pathway, 34-35 credit hours make up the Systemwide General Education Framework. The Additional Pathway Electives are courses specifically chosen for this transfer pathway. For more information about transfer and Systemwide General Education (SGE) please visit <https://www.hutchcc.edu/transfer>. This is a suggested list of courses. Consult with an advisor for more information.

( ) are Systemwide Transfer Courses

( ) are recommended for this degree pathway.

Systemwide General Education Framework			
Course ID	Course Title	Credit Hours	Notes
	<b>English Options (SGE) 010</b>	<b>6.00</b>	<b>6 credits required.</b>
EN100	English Composition IB	3.00	Fall, Spring, Summer Prereq: EN098 Intro to College Writing with a grade of C or higher, or Accuplacer Next Generation Writing Score of 240 to 254, or HS GPA over 2.25, or ACT English Score of 17 to 19.
EN101	English Composition IA	3.00	Fall, Spring, Summer Prereq: HS GPA over 3.0, or Accu NG Writing Score 255+ & Accu NG Reading Score 255+, and ACT Reading Score of 18 or above, or ACT English Score of 18 or above.
EN102	English Composition II	3.00	Fall, Spring, Summer Prereq: EN101 English Composition IA with a grade of C or higher, or EN101H English Comp IA with a grade of C or higher, or EN100 English Comp IB with a grade of C or higher.
	<b>Communication Options (SGE) 020</b>	<b>3.00</b>	<b>3 credits required.</b>
★ SH101	Public Speaking	3.00	Fall, Spring, Summer
SH210	Interpersonal Communication	3.00	Fall, Spring, Summer
	<b>Mathematics Options (SGE) 030</b>	<b>5.00</b>	<b>3 credits required.</b>
MA106	College Algebra	3.00	Fall, Spring, Summer Prereq: HS GPA over 3.25, or Accuplacer NextGen QuantReason, Alg,Stats Score 263 or Above, or ACT Math Score of 22 or Higher.
MA107	Plane Trigonometry	3.00	Fall, Spring, Summer Prereq: MA106 College Algebra with a grade of C or higher, or ACT Math Score of 23 to 36.
MA108	Elements of Statistics	3.00	Fall, Spring, Summer Prereq: HS GPA over 3.0, or Accuplacer NG QuantReason, Alg, Stats Score 255 or Above, or ACT Math Score of 19 or Higher.
MA110	Calculus	3.00	Fall, Spring, Summer Prereq: MA106 College Algebra with a grade of C or higher, or ACT Math Score of 23 to 36, or MA109 Pre-Calculus Math with a grade of C or higher.
★ MA111	Analytical Geometry and Calculus I	5.00	Fall, Spring, Summer Prereq: MA107 Plane Trigonometry with a grade of C or higher, or ACT Math Score of 25 to 36, or MA109 Pre-Calculus Math with a grade of C or higher.
MA117	Contemporary Math	3.00	Fall, Spring, Summer
	<b>Natural &amp; Physical Science Lab Options (SGE) 040</b>	<b>5.00</b>	<b>4-5 credits required including a lab.</b>
BI101	General Biology	4.00	Fall, Spring, Summer

BI103	Human Anatomy and Physiology ▶	6.00	Fall, Spring, Summer Prereq: BI100 or BI101 or BI104 or BI105 or BI112 w/Grade of C.
BI104	Biology I ▶	5.00	Fall, Spring Prereq: CH101 General Chemistry, or CH105 Chemistry I with a C or Higher.
BI105	Biology II ▶	5.00	Spring Prereq: BI101 General Biology, or Departmental Consent, or BI104 Biology I.
BI107	Human Anatomy and Physiology I ▶	4.00	Fall, Spring, Summer
BI108	Human Anatomy and Physiology II ▶	4.00	Fall, Spring, Summer Prereq: BI107 Human Anatomy and Physiology I.
BI112	General Microbiology ▶	4.00	Fall, Spring, Summer Prereq: (BI101,BI103,BI104,BI105)BI107 is not a valid prereq code.
CH101	General Chemistry ▶	5.00	Fall, Spring, Summer Prereq: MA106 College Algebra, or MA117 Contemporary Math, or MA108 Elements of Statistics.
★ CH105	Chemistry I ▶	5.00	Fall, Spring Prereq: ACT Math Score of 21 or higher, or MA105 or higher math, or Accuplacer NextGen QuantReason, Alg,Stats Score 263 or Above, or Accuplacer Math Score of 81+.
CH106	Chemistry II ▶	5.00	Spring Prereq: CH105 Chemistry I with a C or Higher.
CH108	Principles of Organic and Biochemistry ▶	5.00	Fall Prereq: CH105 Chemistry I, or Departmental Consent.
PY103	Physical Geology ▶	3.00	Fall, Spring, Summer
PY104L	Physical Geology Lab ▶	1.00	Fall, Spring, Summer Prereq: PY103 Physical Geology.
PY110	Physical Science ▶	5.00	Fall, Spring
PY112	General Physics I ▶	5.00	Fall Prereq: MA106 College Algebra or higher math.
PY113	General Physics II ▶	5.00	Spring Prereq: PY112 Gen Physics I.
PY201	Engineering Physics I ▶	5.00	Fall Prereq: MA111 Analytical Geometry & Calculus I, or MA112H Honors Analytical Geometry & Calculus.
PY202	Engineering Physics II ▶	5.00	Spring Prereq: PY201 Eng Phys I with grade of C or better.
<b>Social &amp; Behavioral Sciences Options (SGE) 050</b>		<b>6.00</b>	<b>6 credits required from two disciplines.</b>
EC100	Macroeconomics ▶	3.00	Fall, Spring, Summer
EC101	Microeconomics ▶	3.00	Fall, Spring, Summer
GE101	World Geography ▶	3.00	Fall, Spring, Summer
GO100	American Government ▶	3.00	Fall, Spring, Summer
GO101	State and Local Government ▶	3.00	
GO102	International Relations ▶	3.00	Spring
GO110	Introduction to Political Science ▶	3.00	Fall
GO132	Comparative Politics ▶	3.00	
LE101	Introduction to Criminal Justice ▶	3.00	Fall, Spring
LE205	Criminal Law ▶	3.00	Fall
★ PS100	General Psychology ▶	3.00	Fall, Spring, Summer
PS101	Human Relations	3.00	Fall, Spring, Summer
PS102	Human Growth and Development ▶	3.00	Fall, Spring, Summer Prereq: PS100 General Psychology.
PS201	Psychology of Personality	3.00	Fall, Spring Prereq: PS100 General Psychology with grade of C or higher.
PS202	Abnormal Psychology	3.00	Fall, Spring Prereq: PS100 General Psychology.
★ SO100	Fundamentals of Sociology ▶	3.00	Fall, Spring, Summer
SO101	Marriage and Family ▶	3.00	Fall, Spring, Summer

SO106	Introduction to Women's Studies ▶	3.00	Fall
SO111	Cultural Anthropology ▶	3.00	Fall, Spring, Summer
SO113	Cultural Diversity ▶	3.00	Fall, Spring
SO122	Introduction to Social Work ▶	3.00	Fall, Spring
SO201	Social Problems ▶	3.00	Spring Prereq: SO100 Fundamentals of Sociology.
<b>Arts and Humanities Options (SGE) 060</b>		<b>6.00</b>	<b>6 credits required from two disciplines.</b>
AR101	Art Appreciation ▶	3.00	Fall, Spring, Summer
AR104	Art History: Paleolithic to Medieval ▶	3.00	Fall
AR105	Art History: Renaissance to Modern ▶	3.00	Spring
AR106	Art in the Elementary Classroom ▶	3.00	Fall, Spring
EN120	Children's Literature ▶	3.00	Fall, Spring
EN121	World Mythology	3.00	Spring Prereq: EN101 English Composition IA with a grade of C or higher, or EN100 English Comp IB with a grade of C or higher.
EN128	Introduction to Creative Writing ▶	3.00	Fall, Spring
EN201	Introduction to Literature ▶	3.00	Fall, Summer Prereq: EN100 English Comp IB with a grade of C or higher, or EN101 English Composition IA with a grade of C or higher.
EN202	British Literature I	3.00	Fall Prereq: EN101 English Composition IA with a grade of C or higher, or EN100 English Comp IB with a grade of C or higher.
EN203	British Literature II	3.00	Spring Prereq: EN101 English Composition IA with a grade of C or higher, or EN100 English Comp IB with a grade of C or higher.
EN204	American Literature I ▶	3.00	Fall Prereq: EN101 English Composition IA with a grade of C or higher, or EN100 English Comp IB with a grade of C or higher.
EN205	American Literature II ▶	3.00	Spring Prereq: EN101 English Composition IA with a grade of C or higher, or EN100 English Comp IB with a grade of C or higher.
EN207	Introduction to Shakespeare	3.00	Prereq: EN101 English Composition IA with a grade of C or higher, or EN100 English Comp IB with a grade of C or higher.
EN214	Introduction to Cultural Studies: Fairy Tales	3.00	Fall, Spring Prereq: EN101 English Composition IA with a grade of C or higher, or EN100 English Comp IB with a grade of C or higher.
EN217	Podcast Fiction	3.00	Fall, Spring Prereq: EN100 English Comp IB, or EN101 English Composition IA.
HI101	American History 1492-1865 ▶	3.00	Fall, Spring, Summer
HI102	American History 1865-Present ▶	3.00	Fall, Spring, Summer
HI103	World History to 1600 ▶	3.00	Fall, Spring, Summer
HI104	World History Since 1600 ▶	3.00	Fall, Spring, Summer
HI112	Western Civilization to 1500	3.00	Fall
HI113	Western Civilization 1500-Present	3.00	Spring, Summer
HI122	Film History of World War II	3.00	Spring
HI122L	Film History of World War II Lab	0.00	Spring
HI201	Topics in History	3.00	
JL101	Introduction to Mass Communications ▶	3.00	Fall, Spring, Summer
MU101	Music Appreciation ▶	3.00	Fall, Spring, Summer
MU106	Music Theory I ▶	3.00	Fall
MU107	Music Theory II ▶	3.00	Spring Prereq: MU106 Music Theory I.
MU127	Introduction To Jazz/Jazz Rock	3.00	Fall, Spring
MU201	Music in the Elementary Classroom ▶	3.00	Fall
MU206	Music Theory III	3.00	Fall Prereq: MU107 Music Theory II.

MU207	Music Theory IV	3.00	Spring Prereq: MU206 Music Theory III.
PL101	Introduction to Philosophy ▶	3.00	Fall, Spring, Summer
PL103	Logic and Critical Thinking ▶	3.00	Fall, Spring
PL104	Ethics ▶	3.00	Fall, Spring, Summer
PL105	Death and Dying	3.00	Fall, Spring, Summer
RE101	New Testament Literature ▶	3.00	Spring
RE102	Old Testament Literature ▶	3.00	Fall
RE106	Introduction to World Religions ▶	3.00	Spring
SH101	Public Speaking ▶	3.00	Fall, Spring, Summer
SH103	Oral Interpretation	3.00	Spring
SH122	Voice and Diction ▶	3.00	Fall
SH210	Interpersonal Communication ▶	3.00	Fall, Spring, Summer
SO113	Cultural Diversity ▶	3.00	Fall, Spring
SP101	Elementary Spanish I ▶	5.00	Fall, Spring, Summer
SP102	Elementary Spanish II ▶	5.00	Fall, Spring Prereq: SP101 Elementary Spanish I, or Departmental Consent, or SP104 Spanish II.
SP105	Elementary Spanish III ▶	5.00	Prereq: SP102 Spanish II.
TH115	Theatre Appreciation ▶	3.00	Fall, Spring
TH122	Voice and Diction ▶	3.00	Fall
<b>Institutional Options (SGE) 070</b>		<b>6.00</b>	<b>6 credits required.</b>
AR101	Art Appreciation ▶	3.00	Fall, Spring, Summer
AR104	Art History: Paleolithic to Medieval ▶	3.00	Fall
AR105	Art History: Renaissance to Modern ▶	3.00	Spring
AR106	Art in the Elementary Classroom ▶	3.00	Fall, Spring
AR110	Drawing I ▶	3.00	Fall
AR122	2-D Design ▶	3.00	Fall
AR123	3-D Design ▶	3.00	Spring
BI101	General Biology ▶	4.00	Fall, Spring, Summer
BI102	Ecology of Environmental Problems ▶	3.00	Spring
BI103	Human Anatomy and Physiology ▶	6.00	Fall, Spring, Summer Prereq: BI100 or BI101 or BI104 or BI105 or BI112 w/Grade of C.
★ BI104	Biology I ▶	5.00	Fall, Spring Prereq: CH101 General Chemistry, or CH105 Chemistry I with a C or Higher.
★ BI105	Biology II ▶	5.00	Spring Prereq: BI101 General Biology, or Departmental Consent, or BI104 Biology I.
BI107	Human Anatomy and Physiology I ▶	4.00	Fall, Spring, Summer
BI108	Human Anatomy and Physiology II ▶	4.00	Fall, Spring, Summer Prereq: BI107 Human Anatomy and Physiology I.
BI112	General Microbiology ▶	4.00	Fall, Spring, Summer Prereq: (BI101,BI103,BI104,BI105)BI107 is not a valid prereq code.
BU101	Accounting I ▶	3.00	Fall, Spring, Summer
BU102	Accounting II ▶	3.00	Fall, Spring, Summer Prereq: BU101 Accounting I with a grade of C or better, or BU101H Honors Accounting I with a Grade of C or Higher, or BA101 Accounting I with a grade of C or better.
BU105	Introduction to Business ▶	3.00	Fall, Spring, Summer
BU107	Personal Finance ▶	3.00	Fall, Spring, Summer
BU109	Business Communications ▶	3.00	Fall, Spring, Summer

BU118	Introduction to Leadership 	3.00	Fall, Spring
BU201	Managerial Accounting 	3.00	Fall, Spring, Summer Prereq: BU102 with a C or higher or BA102 with a C or higher.
BU202	Marketing 	3.00	Fall, Spring
BU203	Management 	3.00	Fall, Spring, Summer
BU205	Business Law I 	3.00	Fall, Spring
CC101	Introduction to Early Childhood Education 	3.00	Fall, Spring
CC105	Infant and Toddler Development 	3.00	
CH101	General Chemistry 	5.00	Fall, Spring, Summer Prereq: MA106 College Algebra, or MA117 Contemporary Math, or MA108 Elements of Statistics.
CH105	Chemistry I 	5.00	Fall, Spring Prereq: ACT Math Score of 21 or higher, or MA105 or higher math, or Accuplacer NextGen QuantReason, Alg,Stats Score 263 or Above, or Accuplacer Math Score of 81+.
CH106	Chemistry II 	5.00	Spring Prereq: CH105 Chemistry I with a C or Higher.
CH108	Principles of Organic and Biochemistry 	5.00	Fall Prereq: CH105 Chemistry I, or Departmental Consent.
CH201	Organic Chemistry I 	5.00	Fall Prereq: CH106 Chemistry II.
CH202	Organic Chemistry II 	5.00	Spring Prereq: CH201 Organic Chemistry I.
CS111	Visual Basic Programming 	3.00	Fall, Spring, Summer
CS200	Problem Solving and Programming 	4.00	Fall, Spring Prereq: MA106 College Algebra, or Departmental Consent, and CS111 Visual Basic Programming.
EC100	Macroeconomics 	3.00	Fall, Spring, Summer
EC101	Microeconomics 	3.00	Fall, Spring, Summer
ED201	Introduction to Education 	3.00	Fall, Spring Prereq: a GPA of 2.5 or higher, and PS100 General Psychology.
ED201L	Introduction to Education Practicum 	1.00	Fall, Spring Prereq: a GPA of 2.5 or higher, and PS100 General Psychology.
ED205	Educating Exceptional Students 	3.00	Fall, Spring Prereq: ED201 Introduction to Education with a grade of C or higher.
ED206	Technology for Teachers 	3.00	Fall, Spring
ED207	Elementary School PE & Health 	3.00	Spring
EN120	Children's Literature 	3.00	Fall, Spring
EN128	Introduction to Creative Writing 	3.00	Fall, Spring
EN201	Introduction to Literature 	3.00	Fall, Summer Prereq: EN100 English Comp IB with a grade of C or higher, or EN101 English Composition IA with a grade of C or higher.
EN204	American Literature I 	3.00	Fall Prereq: EN101 English Composition IA with a grade of C or higher, or EN100 English Comp IB with a grade of C or higher.
EN205	American Literature II 	3.00	Spring Prereq: EN101 English Composition IA with a grade of C or higher, or EN100 English Comp IB with a grade of C or higher.
GE101	World Geography 	3.00	Fall, Spring, Summer
GO100	American Government 	3.00	Fall, Spring, Summer
GO101	State and Local Government 	3.00	
GO102	International Relations 	3.00	Spring
GO110	Introduction to Political Science 	3.00	Fall
GO132	Comparative Politics 	3.00	
HE202	Nutrition 	3.00	Fall, Spring, Summer
HI101	American History 1492-1865 	3.00	Fall, Spring, Summer
HI102	American History 1865-Present 	3.00	Fall, Spring, Summer

HI103	World History to 1600 	3.00	Fall, Spring, Summer
HI104	World History Since 1600 	3.00	Fall, Spring, Summer
HR105	Medical Terminology 	3.00	Fall, Spring, Summer
IS104	Microcomputer Applications 	3.00	Fall, Spring, Summer
JL101	Introduction to Mass Communications 	3.00	Fall, Spring, Summer
LE101	Introduction to Criminal Justice 	3.00	Fall, Spring
LE205	Criminal Law 	3.00	Fall
MA106	College Algebra 	3.00	Fall, Spring, Summer Prereq: HS GPA over 3.25, or Accuplacer NextGen QuantReason, Alg, Stats Score 263 or Above, or ACT Math Score of 22 or Higher.
MA107	Plane Trigonometry 	3.00	Fall, Spring, Summer Prereq: MA106 College Algebra with a grade of C or higher, or ACT Math Score of 23 to 36.
MA108	Elements of Statistics 	3.00	Fall, Spring, Summer Prereq: HS GPA over 3.0, or Accuplacer NG QuantReason, Alg, Stats Score 255 or Above, or ACT Math Score of 19 or Higher.
MA110	Calculus 	3.00	Fall, Spring, Summer Prereq: MA106 College Algebra with a grade of C or higher, or ACT Math Score of 23 to 36, or MA109 Pre-Calculus Math with a grade of C or higher.
MA111	Analytical Geometry and Calculus I 	5.00	Fall, Spring, Summer Prereq: MA107 Plane Trigonometry with a grade of C or higher, or ACT Math Score of 25 to 36, or MA109 Pre-Calculus Math with a grade of C or higher.
MA113	Analytical Geometry and Calculus II 	5.00	Fall, Spring, Summer Prereq: MA111 with a grade of C or higher.
MA117	Contemporary Math 	3.00	Fall, Spring, Summer
MA206	Differential Equations 	3.00	Fall, Spring Prereq: MA113 with a grade of C or higher.
MU101	Music Appreciation 	3.00	Fall, Spring, Summer
MU106	Music Theory I 	3.00	Fall
MU107	Music Theory II 	3.00	Spring Prereq: MU106 Music Theory I.
MU201	Music in the Elementary Classroom 	3.00	Fall
PE105	Personal and Community Health 	3.00	Fall, Spring, Summer
PE106	First Aid and CPR 	2.00	Fall, Spring
PE185	Exercise Physiology 	3.00	Spring
PL101	Introduction to Philosophy 	3.00	Fall, Spring, Summer
PL103	Logic and Critical Thinking 	3.00	Fall, Spring
PL104	Ethics 	3.00	Fall, Spring, Summer
PS100	General Psychology 	3.00	Fall, Spring, Summer
PS102	Human Growth and Development 	3.00	Fall, Spring, Summer Prereq: PS100 General Psychology.
PY102	Weather and Climate	3.00	Spring
PY103	Physical Geology 	3.00	Fall, Spring, Summer
PY104L	Physical Geology Lab 	1.00	Fall, Spring, Summer Prereq: PY103 Physical Geology.
PY110	Physical Science 	5.00	Fall, Spring
PY112	General Physics I 	5.00	Fall Prereq: MA106 College Algebra or higher math.
PY113	General Physics II 	5.00	Spring Prereq: PY112 Gen Physics I.
PY201	Engineering Physics I 	5.00	Fall Prereq: MA111 Analytical Geometry & Calculus I, or MA112H Honors Analytical Geometry & Calculus.
PY202	Engineering Physics II 	5.00	Spring Prereq: PY201 Eng Phys I with grade of C or better.
RE101	New Testament Literature 	3.00	Spring

RE102	Old Testament Literature 	3.00	Fall
RE106	Introduction to World Religions 	3.00	Spring
SH101	Public Speaking 	3.00	Fall, Spring, Summer
SH122	Voice and Diction 	3.00	Fall
SH210	Interpersonal Communication 	3.00	Fall, Spring, Summer
SM180	Basic Sports Medicine 	3.00	Fall, Spring
SO100	Fundamentals of Sociology 	3.00	Fall, Spring, Summer
SO101	Marriage and Family 	3.00	Fall, Spring, Summer
SO106	Introduction to Women's Studies 	3.00	Fall
SO111	Cultural Anthropology 	3.00	Fall, Spring, Summer
SO113	Cultural Diversity 	3.00	Fall, Spring
SO122	Introduction to Social Work 	3.00	Fall, Spring
SO201	Social Problems 	3.00	Spring Prereq: SO100 Fundamentals of Sociology.
SP101	Elementary Spanish I 	5.00	Fall, Spring, Summer
SP102	Elementary Spanish II 	5.00	Fall, Spring Prereq: SP101 Elementary Spanish I, or Departmental Consent, or SP104 Spanish II.
SP105	Elementary Spanish III 	5.00	Prereq: SP102 Spanish II.
TH115	Theatre Appreciation 	3.00	Fall, Spring
TH116	Acting I 	3.00	Fall
TH121	Acting II 	3.00	Fall Prereq: TH116 Acting I with a grade of C or better.
TH122	Voice and Diction 	3.00	Fall

#### Additional Pathway Electives

Course ID	Course Title	Credit Hours	Notes
CH106	Chemistry II 	5.00	Spring Prereq: CH105 Chemistry I with a C or Higher.
CH108	Principles of Organic and Biochemistry 	5.00	Fall Prereq: CH105 Chemistry I, or Departmental Consent.
PY112	General Physics I 	5.00	Fall Prereq: MA106 College Algebra or higher math.
PY113	General Physics II 	5.00	Spring Prereq: PY112 Gen Physics I.

No additional pathway electives

Additional Credits Required

**Total Credits: 60.00**

\*A minimum of 60 hours is required to earn a HutchCC AA, AS, or AFA degree; however additional credit hours may be outlined on the transfer pathway to meet the program requirements for a 4-year institution.

\*\*34-35 credit hours fulfill the Systemwide General Education Core.

**Program Notes:**

Additional credit hours earned for MA111 will be applied to elective credit. Although the SGE requires 4-5 credit hours of a lecture and lab course in the Natural Science area, a student must complete 9 credit hours of Natural Science & Mathematics courses (with at least 4 hours being a lecture and lab science course) to meet the HutchCC Associate of Science degree requirement.