

BIOLOGY, B.S. (SCIENCE)

Seven Penn State campuses are scheduled for closure after Spring 2027: DuBois, Fayette, New Kensington, Mont Alto, Shenango, Wilkes-Barre, and York. New students are not being admitted at these campuses.

Begin Campus: Any Penn State Campus

End Campus: University Park

Suggested Academic Plan

The suggested academic plan(s) listed on this page are the plan(s) that are in effect during the 2026-27 academic year. To access previous years' suggested academic plans, please visit the archive (<https://bulletins.psu.edu/undergraduate/archive/>) to view the appropriate Undergraduate Bulletin edition.

Ecology Option: Biology, B.S. at University Park Campus

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year

Fall	Credits Spring	Credits
BIOL 110, 114 and 115, or 114 and 116 ^{*#}	4-5 BIOL 230W, 234 and 235W, 234 and 236W, 240W, or 244 and 245W ^{*#}	4-5
CHEM 110 ^{**†}	3 CHEM 112 [*]	3
CHEM 111 [†]	1 CHEM 113 [†]	1
ENGL 15 or ENGL 30H [†] or General Education Course (GA, GH, GS)	3 ENGL 15 or ENGL 30H [†] or General Education Course (GA, GH, GS)	3
MATH 140B or 140 ^{*††}	4 STAT 250, 200, or 240 ^{††}	3-4
PSU 16	1	
	16-17	14-16

Second Year

Fall	Credits Spring	Credits
BIOL 220W, 224 and 225W, or 224 and 226W ^{*#}	4-5 BIOL 230W, 234 and 235W, 234 and 236W, 240W, or 244 and 245W ^{*#}	4-5
CHEM 210 or 202	3 CAS 100A, 100B, or 100C [‡]	3
General Education Course (GA)	3 CHEM 212 or 203	3
Elective (see notes)	3 CHEM 213W	2
Elective (see notes)	3 General Education Course (GH)	3
	16-17	15-16

Third Year

Fall	Credits Spring	Credits
BIOL 463	3 BIOL 4XX	3
PHYS 250 [†]	4 PHYS 251	4
General Education Course (GS)	3 General Education Course (N)	3

Elective (see notes)	3 General Education Course (GHW)	3
Elective (see notes)	3 Elective (see notes)	3
	16	16
Fourth Year		
Fall	Credits Spring	Credits
BIOL 4XX	3 BIOL 4XX	3
ENGL 202C [‡]	3 BIOL 4XX	3
STAT 462 or 464	3 General Education Course (N)	3
General Education Course (IL)	3 General Education Course (US)	3
Elective (see notes)	3 Elective (see notes)	3
Elective (see notes)	1.5	
	16.5	15

Total Credits 124.5-129.5

* Course requires a grade of C or better for the major

‡ Course requires a grade of C or better for General Education

Course is an Entrance to Major requirement

† Course satisfies General Education and degree requirement

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy Cultural Diversity Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GHW, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain attribute is used to fill audit requirements. Foundations courses (GWS and GQ) require a grade of 'C' or better.

All incoming Schreyer Honors College first-year students at University Park will take ENGL 137H/CAS 137H in the fall semester and ENGL 138T/CAS 138T in the spring semester. These courses carry the GWS designation and satisfy a portion of that General Education requirement. If the student's program prescribes GWS these courses will replace both ENGL 15/ENGL 30H and CAS 100A/CAS 100B/CAS 100C. Each course is 3 credits.

Program Notes:

- Course offerings change each term. BIOL 110, BIOL 114, BIOL 115, and BIOL 116 are offered in fall and spring terms. BIOL 220W, BIOL 224, BIOL 225W, and BIOL 226W are offered in the fall terms only. BIOL 230W, BIOL 234, BIOL 235W, BIOL 236W, BIOL 240W, BIOL 244, and BIOL 245W are offered only during spring terms. Note in LionPATH that 400-level Biology course selections differ in fall, spring, and summer terms.
- Elective (Supporting) Courses: Elective credits range between 10 to 27 credits, depending on your option within the Biology major and your specific course selections. Elective courses are those completed

for personal interest, to be counted toward a minor, or to advance your career path following graduation.

- Disallowed credits: The following courses MAY NOT be used for credit (NOT EVEN AS ELECTIVES) towards a degree in Biology and will NOT be counted towards graduation: BMB 1, BISC 1, 2, 3, or 4, no BIOL course under 110, no CHEM course under 110, ENGL 4, 5, ESL 4, CAS 126, no MICRB course under 199, LLED 5, 10, PHSC 1, 150, 151, PHYS 1, no MATH course under 21, for MATH 140A (only 4 of 6 credits count toward the Biology degree), more than 9 credits of SC 295, 395, 495.

Advising Notes:

- The General Education Program consists of ~45 credits that are distributed among the following categories:
 - General Speaking and Writing credits are fulfilled by completing ENGL 15, CAS 100A or CAS 100B or CAS 100C, and ENGL 202A or ENGL 202B or ENGL 202C or ENGL 202D.
 - General Quantification (GQ) requirement is met by completing MATH 140/MATH 140B and STAT 200.
 - General Arts, Humanities, & Social Science requirements are met by taking 18 credits of courses indicated as GA, GH, or GS. Some substitutions are allowed; see an adviser for more information.
 - General Health and Wellness (GHW) requirements are met by completing 3 credits of GHW coursework.
 - General Natural Science (GN) requirement is met by completing the core BIOL courses – BIOL 110 or (BIOL 114 and BIOL 115) or (BIOL 114 and BIOL 116), BIOL 220W or (BIOL 224 and BIOL 225W) or (BIOL 224 or BIOL 226W), BIOL 230W or (BIOL 234 and BIOL 235W) or (BIOL 234 and BIOL 236W), and BIOL 240W or (BIOL 244 and BIOL 245W).
 - Integrative Studies requirement is met by taking 6 credits of Inter-Domain (N) courses. A course listed as a GA, GH, or GS that also carries the N designation can fulfill both Gen Ed categories.
 - United States and International Cultures requirement is met by taking one course designated as "US" and one course designated as "IL". A course designated as "US;IL" can be used for either US or IL requirement, but cannot be used to satisfy both US and IL credits. A course listed as a GA, GH, or GS that also carries a US or IL or US/IL designation can fulfill both Gen Ed category requirements.
 - General Writing Across the Curriculum (3 credits of "W" are required). This requirement is met by taking BIOL 220W or (BIOL 224 and BIOL 225W) or (BIOL 224 or BIOL 226W), BIOL 230W or (BIOL 234 and BIOL 235W) or (BIOL 234 and BIOL 236W) and BIOL 240W or (BIOL 244 and BIOL 245W), each carrying one credit of "W". Students can complete additional "W" courses if they choose.
 - First-Year Seminar requirement is met by completing PSU 16 or a First-Year Seminar course offered through a different department or college.

General Biology Option: Biology, B.S. at University Park Campus

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First Year

Fall	Credits Spring	Credits
BIOL 110, 114 <i>and</i> 115, or 114 <i>and</i> 116 ^{*#}	4-5 BIOL 230W, 234 <i>and</i> 235W, 234 <i>and</i> 236W, 240W, or 244 <i>and</i> 245W ^{*#}	4-5
CHEM 110 ^{*#†}	3 CHEM 112 [*]	3
CHEM 111 [†]	1 CHEM 113 [†]	1
ENGL 15 or ENGL 30H [†] or General Education Course (GA, GH, GS)	3 STAT 250, 200, or 240 ^{††}	3-4
MATH 140B or 140 ^{*†#†}	4 ENGL 15 or ENGL 30H [†] or General Education Course (GA, GH, GS)	3
PSU 16	1	
	16-17	14-16

Second Year

Fall	Credits Spring	Credits
BIOL 220W, 224 <i>and</i> 225W, or 224 <i>and</i> 226W ^{*#}	4-5 BIOL 230W, 234 <i>and</i> 235W, 234 <i>and</i> 236W, 240W, or 244 <i>and</i> 245W ^{*#}	4-5
CHEM 210 or 202	3 CAS 100A, 100B, or 100C [†]	3
General Education Course (GA)	3 CHEM 212 or 203	3
Elective (see notes)	3 CHEM 213W	2
Elective (see notes)	3 General Education Course (GH)	3
	16-17	15-16

Third Year

Fall	Credits Spring	Credits
BIOL 4XX	3 BIOL 4XX	3
PHYS 250 [†]	4 PHYS 251	4
General Education Course (GS)	3 General Education Course (GHW)	3
Elective (see notes)	3 Elective (see notes)	3
Elective (see notes)	3 Elective (see notes)	3
	16	16

Fourth Year

Fall	Credits Spring	Credits
BIOL 4XX	3 BIOL 4XX	3
BIOL 4XX	3 BIOL 4XX	3
ENGL 202C [†]	3 General Education Course (N)	3
General Education Course (N)	3 General Education Course (US)	3

General Education Course (IL)	3 Elective (see notes)	3
Elective (see notes)	1.5	
	16.5	15

Total Credits 124.5-129.5

- * Course requires a grade of C or better for the major
- ‡ Course requires a grade of C or better for General Education
- # Course is an Entrance to Major requirement
- † Course satisfies General Education and degree requirement

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy Cultural Diversity Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GHW, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain attribute is used to fill audit requirements. Foundations courses (GWS and GQ) require a grade of 'C' or better.

All incoming Schreyer Honors College first-year students at University Park will take ENGL 137H/CAS 137H in the fall semester and ENGL 138T/CAS 138T in the spring semester. These courses carry the GWS designation and satisfy a portion of that General Education requirement. If the student's program prescribes GWS these courses will replace both ENGL 15/ENGL 30H and CAS 100A/CAS 100B/CAS 100C. Each course is 3 credits.

Program Notes:

- Course offerings change each term. BIOL 110, BIOL 114, BIOL 115, and BIOL 116 are offered in fall and spring terms. BIOL 220W, BIOL 224, BIOL 225W, and BIOL 226W are offered in the fall terms only. BIOL 230W, BIOL 234, BIOL 235W, BIOL 236W, BIOL 240W, BIOL 244, and BIOL 245W are offered only during spring terms. Note in LionPATH that 400-level Biology course selections differ in fall, spring, and summer terms.
- Elective (Supporting) Courses: Elective credits range between 10 to 27 credits, depending on your option within the Biology major and your specific course selections. Elective courses are those completed for personal interest, to be counted toward a minor, or to advance your career path following graduation.
- Disallowed credits: The following courses MAY NOT be used for credit (NOT EVEN AS ELECTIVES) towards a degree in Biology and will NOT be counted towards graduation: BMB 1, BISC 1, 2, 3, or 4, no BIOL course under 110, no CHEM course under 110, ENGL 4, 5, ESL 4, CAS 126, no MICRB course under 199, LLED 5, 10, PHSC 1, 150, 151, PHYS 1, no MATH course under 21, for MATH 140A (only 4 of 6 credits count toward the Biology degree), more than 9 credits of SC 295, 395, 495.

Advising Notes:

- The General Education Program consists of ~45 credits that are distributed among the following categories:
 - General Speaking and Writing credits are fulfilled by completing ENGL 15, CAS 100A or CAS 100B or CAS 100C, and ENGL 202A or ENGL 202B or ENGL 202C or ENGL 202D.
 - General Quantification (GQ) requirement is met by completing MATH 140/MATH 140B and STAT 200.
 - General Arts, Humanities, & Social Science requirements are met by taking 18 credits of courses indicated as GA, GH, or GS. Some substitutions are allowed; see an adviser for more information.
 - General Health and Wellness (GHW) requirements are met by completing 3 credits of GHW coursework.
 - General Natural Science (GN) requirement is met by completing the core BIOL courses – BIOL 110 or (BIOL 114 and BIOL 115) or (BIOL 114 and BIOL 116), BIOL 220W or (BIOL 224 and BIOL 225W) or (BIOL 224 or BIOL 226W), BIOL 230W or (BIOL 234 and BIOL 235W) or (BIOL 234 and BIOL 236W), and BIOL 240W or (BIOL 244 and BIOL 245W).
 - Integrative Studies requirement is met by taking 6 credits of Inter-Domain (N) courses. A course listed as a GA, GH, or GS that also carries the N designation can fulfill both Gen Ed categories.
 - United States and International Cultures requirement is met by taking one course designated as "US" and one course designated as "IL". A course designated as "US;IL" can be used for either US or IL requirement, but cannot be used to satisfy both US and IL credits. A course listed as a GA, GH, or GS that also carries a US or IL or US/IL designation can fulfill both Gen Ed category requirements.
 - General Writing Across the Curriculum (3 credits of "W" are required). This requirement is met by taking BIOL 220W or (BIOL 224 and BIOL 225W) or (BIOL 224 or BIOL 226W), BIOL 230W or (BIOL 234 and BIOL 235W) or (BIOL 234 and BIOL 236W) and BIOL 240W or (BIOL 244 and BIOL 245W), each carrying one credit of "W". Students can complete additional "W" courses if they choose.
 - First-Year Seminar requirement is met by completing PSU 16 or a First-Year Seminar course offered through a different department or college.

General Biology Option (Starting with MATH 21): Biology, B.S. at University Park Campus

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year

Fall	Credits Spring	Credits
BIOL 161 or 133	3 BIOL 163, 161, or 133	3
BIOL 162 (only if BIOL 161 is taken simultaneously)	1 BIOL 164 (only if BIOL 163 is taken simultaneously)	1
ENGL 15 [†] or General Education Course (GA, GH, GS)	3 ENGL 15 [†] or General Education Course (GA, GH, GS)	3
MATH 21	3 MATH 22	3
STAT 250, 200, or 240 ^{††}	3-4 MATH 26	3
PSU 16	1 General Education Course or Elective (see notes)	3
14-15		16

Second Year

Fall	Credits Spring	Credits
BIOL 110, 114 <i>and</i> 115, or 114 <i>and</i> 116 ^{*#}	4-5 BIOL 230W, 234 <i>and</i> 235W, 234 <i>and</i> 236W, 240W, or 244 <i>and</i> 245W ^{*#}	4-5
CHEM 108	1 CAS 100A, 100B, or 100C [‡]	3
CHEM 110 ^{**†}	3 CHEM 111 [†]	1
MATH 140B or 140 ^{*†††}	4 CHEM 112 [*]	3
General Education Course or Elective (see notes)	3 STAT 250, 200, or 240	3-4
15-16		14-16

Third Year

Fall	Credits Spring	Credits
BIOL 220W, 224 <i>and</i> 225W, or 224 <i>and</i> 226W ^{*#}	4-5 BIOL 230W, 234 <i>and</i> 235W, 234 <i>and</i> 236W, 240W, or 244 <i>and</i> 245W ^{*#}	4-5
BIOL 4XX	3 BIOL 4XX (could take this over summer and take an elective here instead to ease up course load)	3
CHEM 113 [†]	1 CHEM 212 or 203	3
CHEM 210 or 202	3 CHEM 213W (if needed) or General Education Course or Elective (see notes)	2-3
General Education Course or Elective (see notes)	3 General Education Course or Elective (see notes)	3
14-15		15-17

Fourth Year

Fall	Credits Spring	Credits
BIOL 4XX	3 BIOL 4XX	3
BIOL 4XX	3 BIOL 4XX	3
PHYS 250 [†]	4 PHYS 251	4

General Education Course or ENGL 202C [‡]	3 General Education Course or Elective (see notes)	3
General Education Course or Elective (see notes)	3 General Education Course or Elective (see notes)	3
General Education Course or Elective (see notes)	1.5 General Education Course or Elective (see notes)	1.5
17.5		17.5

Total Credits 123-130

* Course requires a grade of C or better for the major

‡ Course requires a grade of C or better for General Education

Course is an Entrance to Major requirement

† Course satisfies General Education and degree requirement

University Requirements and General Education Notes:

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W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GHW, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain attribute is used to fill audit requirements. Foundations courses (GWS and GQ) require a grade of 'C' or better.

All incoming Schreyer Honors College first-year students at University Park will take ENGL 137H/CAS 137H in the fall semester and ENGL 138T/CAS 138T in the spring semester. These courses carry the GWS designation and satisfy a portion of that General Education requirement. If the student's program prescribes GWS these courses will replace both ENGL 15/ENGL 30H and CAS 100A/CAS 100B/CAS 100C. Each course is 3 credits.

Program Notes:

- Course offerings change each term. BIOL 110, BIOL 114, BIOL 115, and BIOL 116 are offered in fall and spring terms. BIOL 220W, BIOL 224, BIOL 225W, and BIOL 226W are offered in the fall terms only. BIOL 230W, BIOL 234, BIOL 235W, BIOL 236W, BIOL 240W, BIOL 244, and BIOL 245W are offered only during spring terms. Note in LionPATH that 400-level Biology course selections differ in fall, spring, and summer terms.
- Elective (Supporting) Courses: Elective credits range between 10 to 27 credits, depending on your option within the Biology major and your specific course selections. Elective courses are those completed for personal interest, to be counted toward a minor, or to advance your career path following graduation.
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count toward the Biology degree), more than 9 credits of SC 295, 395, 495.

Advising Notes:

- The General Education Program consists of ~45 credits that are distributed among the following categories:
 - General Speaking and Writing credits are fulfilled by completing ENGL 15, CAS 100A or CAS 100B or CAS 100C, and ENGL 202A or ENGL 202B or ENGL 202C or ENGL 202D.
 - General Quantification (GQ) requirement is met by completing MATH 140/MATH 140B and STAT 200.
 - General Arts, Humanities, & Social Science requirements are met by taking 18 credits of courses indicated as GA, GH, or GS. Some substitutions are allowed; see an adviser for more information.
 - General Health and Wellness (GHW) requirements are met by completing 3 credits of GHW coursework.
 - General Natural Science (GN) requirement is met by completing the core BIOL courses – BIOL 110 or (BIOL 114 and BIOL 115) or (BIOL 114 and BIOL 116), BIOL 220W or (BIOL 224 and BIOL 225W) or (BIOL 224 or BIOL 226W), BIOL 230W or (BIOL 234 and BIOL 235W) or (BIOL 234 and BIOL 236W), and BIOL 240W or (BIOL 244 and BIOL 245W).
 - Integrative Studies requirement is met by taking 6 credits of Inter-Domain (N) courses. A course listed as a GA, GH, or GS that also carries the N designation can fulfill both Gen Ed categories.
 - United States and International Cultures requirement is met by taking one course designated as "US" and one course designated as "IL". A course designated as "US;IL" can be used for either US or IL requirement, but cannot be used to satisfy both US and IL credits. A course listed as a GA, GH, or GS that also carries a US or IL or US/IL designation can fulfill both Gen Ed category requirements.
 - General Writing Across the Curriculum (3 credits of "W" are required). This requirement is met by taking BIOL 220W or (BIOL 224 and BIOL 225W) or (BIOL 224 or BIOL 226W), BIOL 230W or (BIOL 234 and BIOL 235W) or (BIOL 234 and BIOL 236W) and BIOL 240W or (BIOL 244 and BIOL 245W), each carrying one credit of "W". Students can complete additional "W" courses if they choose.
 - First-Year Seminar requirement is met by completing PSU 16 or a First-Year Seminar course offered through a different department or college.

General Biology Option (Starting with MATH 22 and MATH 26): Biology, B.S. at University Park Campus

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year

Fall	Credits Spring	Credits
BIOL 110, 114 <i>and</i> 115, or 114 <i>and</i> 116 ^{*#}	4-5 BIOL 230W, 234 <i>and</i> 235W, 234 <i>and</i> 236W, 240W, or 244 <i>and</i> 245W ^{*#}	4-5
ENGL 15 [‡] or General Education Course (GA, GH, GS)	3 CHEM 110 ^{*#†}	3
MATH 22	3 CHEM 111 [†]	1
MATH 26	3 ENGL 15 [‡] or General Education Course (GA, GH, GS)	3
PSU 16	1 MATH 140B or 140 ^{*†#†}	4
General Education Course or Elective (see notes)	3 General Education Course or Elective (see notes)	3
17-18		18-19

Second Year

Fall	Credits Spring	Credits
BIOL 220W, 224 <i>and</i> 225W, or 224 <i>and</i> 226W ^{*#}	4-5 BIOL 230W, 234 <i>and</i> 235W, 234 <i>and</i> 236W, 240W, or 244 <i>and</i> 245W ^{*#}	4-5
CHEM 112 [*]	3 CAS 100A, 100B, or 100C [‡]	3
CHEM 113 [†]	1 CHEM 210 or 202	3
STAT 250, 200, or 240 ^{††}	3-4 General Education Course or Elective (see notes)	3
General Education Course or Elective (see notes)	3 General Education Course or Elective (see notes)	3
14-16		16-17

Third Year

Fall	Credits Spring	Credits
BIOL 4XX	3 BIOL 4XX	3
CHEM 212 or 203	3 BIOL 4XX	3
CHEM 213W (if needed) or General Education Course or Elective (see notes)	2-3 PHYS 250 [†]	4
General Education Course or Elective (see notes)	3 General Education Course or Elective (see notes)	3
General Education Course or Elective (see notes)	3 General Education Course or Elective (see notes)	3
14-15		16

Fourth Year

Fall	Credits Spring	Credits
BIOL 4XX	3 BIOL 4XX	3
PHYS 251	4 BIOL 4XX	3
General Education Course or ENGL 202C [‡]	3 General Education Course or Elective (see notes)	3

General Education Course or Elective (see notes)	3 General Education Course or Elective (see notes)	3
General Education Course or Elective (see notes)	3 General Education Course or Elective (see notes)	3
16		15

Total Credits 126-132

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Program Notes:

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 - Integrative Studies requirement is met by taking 6 credits of Inter-Domain (N) courses. A course listed as a GA, GH, or GS that also carries the N designation can fulfill both Gen Ed categories.
 - United States and International Cultures requirement is met by taking one course designated as "US" and one course designated as "IL". A course designated as "US;IL" can be used for either US or IL requirement, but cannot be used to satisfy both US and IL credits. A course listed as a GA, GH, or GS that also carries a US or IL or US/IL designation can fulfill both Gen Ed category requirements.
 - General Writing Across the Curriculum (3 credits of "W" are required). This requirement is met by taking BIOL 220W or (BIOL 224 and BIOL 225W) or (BIOL 224 or BIOL 226W), BIOL 230W or (BIOL 234 and BIOL 235W) or (BIOL 234 and BIOL 236W) and BIOL 240W or (BIOL 244 and BIOL 245W), each carrying one credit of "W". Students can complete additional "W" courses if they choose.
 - First-Year Seminar requirement is met by completing PSU 16 or a First-Year Seminar course offered through a different department or college.

Genetics and Development Option: Biology, B.S. at University Park Campus

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year

Fall	Credits Spring	Credits
BIOL 110, 114 <i>and</i> 115, or 114 <i>and</i> 116 ^{*#}	4-5 BIOL 230W, 234 <i>and</i> 235W, 234 <i>and</i> 236W, 240W, or 244 <i>and</i> 245W ^{*#}	4-5
CHEM 110 ^{*#†}	3 CHEM 112 [*]	3
CHEM 111 [†]	1 CHEM 113 [†]	1
ENGL 15 or ENGL 30H [†] or General Education Course (GA, GH, GS)	3 STAT 250, 200, or 240 ^{††}	3-4
MATH 140B or 140 ^{*†#†}	4 ENGL 15 or ENGL 30H [†] or General Education Course (GA, GH, GS)	3
PSU 16	1	
	16-17	14-16

Second Year

Fall	Credits Spring	Credits
BIOL 220W, 224 <i>and</i> 225W, or 224 <i>and</i> 226W ^{*#}	4-5 BIOL 230W, 234 <i>and</i> 235W, 234 <i>and</i> 236W, 240W, or 244 <i>and</i> 245W ^{*#}	4-5
CHEM 210 or 202	3 CAS 100A, 100B, or 100C [†]	3
General Education Course (GA)	3 CHEM 212 or 203	3
Elective (see notes)	3 CHEM 213W	2
Elective (see notes)	3 General Education Course (GH)	3
	16-17	15-16

Third Year

Fall	Credits Spring	Credits
BIOL 430 or BMB 430	3 BIOL 322	3
BMB 401	3 BMB 402	3
PHYS 250 [†]	4 PHYS 251	4
General Education Course (GS)	3 General Education Course (GHW)	3
Elective (see notes)	3 Elective (see notes)	3
	16	16

Fourth Year

Fall	Credits Spring	Credits
BIOL 4XX	3 BIOL 4XX	3
BIOL 4XX	3 BIOL 4XX	3
ENGL 202C [†]	3 General Education Course (N)	3
General Education Course (N)	3 General Education Course (US)	3

General Education Course (IL)	3 Elective (see notes)	3
Elective (see notes)	1.5	
	16.5	15

Total Credits 124.5-129.5

* Course requires a grade of C or better for the major

‡ Course requires a grade of C or better for General Education

Course is an Entrance to Major requirement

† Course satisfies General Education and degree requirement

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy Cultural Diversity Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GHW, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain attribute is used to fill audit requirements. Foundations courses (GWS and GQ) require a grade of 'C' or better.

All incoming Schreyer Honors College first-year students at University Park will take ENGL 137H/CAS 137H in the fall semester and ENGL 138T/CAS 138T in the spring semester. These courses carry the GWS designation and satisfy a portion of that General Education requirement. If the student's program prescribes GWS these courses will replace both ENGL 15/ENGL 30H and CAS 100A/CAS 100B/CAS 100C. Each course is 3 credits.

Program Notes:

- Course offerings change each term. BIOL 110, BIOL 114, BIOL 115, and BIOL 116 are offered in fall and spring terms. BIOL 220W, BIOL 224, BIOL 225W, and BIOL 226W are offered in the fall terms only. BIOL 230W, BIOL 234, BIOL 235W, BIOL 236W, BIOL 240W, BIOL 244, and BIOL 245W are offered only during spring terms. Note in LionPATH that 400-level Biology course selections differ in fall, spring, and summer terms.
- Elective (Supporting) Courses: Elective credits range between 10 to 27 credits, depending on your option within the Biology major and your specific course selections. Elective courses are those completed for personal interest, to be counted toward a minor, or to advance your career path following graduation.
- Disallowed credits: The following courses MAY NOT be used for credit (NOT EVEN AS ELECTIVES) towards a degree in Biology and will NOT be counted towards graduation: BMB 1, BISC 1, 2, 3, or 4, no BIOL course under 110, no CHEM course under 110, ENGL 4, 5, ESL 4, CAS 126, no MICRB course under 199, LLED 5, 10, PHSC 1, 150, 151, PHYS 1, no MATH course under 21, for MATH 140A (only 4 of 6 credits count toward the Biology degree), more than 9 credits of SC 295, 395, 495.

Advising Notes:

- The General Education Program consists of ~45 credits that are distributed among the following categories:
 - General Speaking and Writing credits are fulfilled by completing ENGL 15, CAS 100A or CAS 100B or CAS 100C, and ENGL 202A or ENGL 202B or ENGL 202C or ENGL 202D.
 - General Quantification (GQ) requirement is met by completing MATH 140/MATH 140B and STAT 200.
 - General Arts, Humanities, & Social Science requirements are met by taking 18 credits of courses indicated as GA, GH, or GS. Some substitutions are allowed; see an adviser for more information.
 - General Health and Wellness (GHW) requirements are met by completing 3 credits of GHW coursework.
 - General Natural Science (GN) requirement is met by completing the core BIOL courses – BIOL 110 or (BIOL 114 and BIOL 115) or (BIOL 114 and BIOL 116), BIOL 220W or (BIOL 224 and BIOL 225W) or (BIOL 224 or BIOL 226W), BIOL 230W or (BIOL 234 and BIOL 235W) or (BIOL 234 and BIOL 236W), and BIOL 240W or (BIOL 244 and BIOL 245W).
 - Integrative Studies requirement is met by taking 6 credits of Inter-Domain (N) courses. A course listed as a GA, GH, or GS that also carries the N designation can fulfill both Gen Ed categories.
 - United States and International Cultures requirement is met by taking one course designated as "US" and one course designated as "IL". A course designated as "US;IL" can be used for either US or IL requirement, but cannot be used to satisfy both US and IL credits. A course listed as a GA, GH, or GS that also carries a US or IL or US/IL designation can fulfill both Gen Ed category requirements.
 - General Writing Across the Curriculum (3 credits of "W" are required). This requirement is met by taking BIOL 220W or (BIOL 224 and BIOL 225W) or (BIOL 224 or BIOL 226W), BIOL 230W or (BIOL 234 and BIOL 235W) or (BIOL 234 and BIOL 236W) and BIOL 240W or (BIOL 244 and BIOL 245W), each carrying one credit of "W". Students can complete additional "W" courses if they choose.
 - First-Year Seminar requirement is met by completing PSU 16 or a First-Year Seminar course offered through a different department or college.

Neuroscience Option: Biology, B.S. at University Park Campus

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year

Fall	Credits Spring	Credits
BIOL 110, 114 and 115, or 114 and 116 ^{*#}	4-5 BIOL 230W, 234 and 235W, 234 and 236W, 240W, or 244 and 245W ^{*#}	4-5
CHEM 110 ^{*#†}	3 CHEM 112 [*]	3
CHEM 111 [†]	1 CHEM 113 [†]	1
ENGL 15 or ENGL 30H [†] or General Education Course (GA, GH, GS)	3 ENGL 15 or ENGL 30H [†] or General Education Course (GA, GH, GS)	3
MATH 140B or 140 ^{*†#†}	4 STAT 250, 200, or 240 ^{††}	3-4
PSU 16	1	
	16-17	14-16

Second Year

Fall	Credits Spring	Credits
BIOL 220W, 224 and 225W, or 224 and 226W ^{*#}	4-5 BIOL 230W, 234 and 235W, 234 and 236W, 240W, or 244 and 245W ^{*#}	4-5
CHEM 210 or 202	3 CHEM 212 or 203	3
General Education Course (GA)	3 CHEM 213W	2
Elective (see notes)	3 CAS 100A, 100B, or 100C [†]	3
Elective (see notes)	3 General Education Course (GH)	3
	16-17	15-16

Third Year

Fall	Credits Spring	Credits
BIOL 4XX	3 BIOL 4XX	3
BMB 401	3 BMB 402	3
PHYS 250 [†]	4 PHYS 251	4
General Education Course (GS)	3 General Education Course (GHW)	3
Elective (see notes)	3 General Education Course (N)	3
	16	16

Fourth Year

Fall	Credits Spring	Credits
BIOL 469	3 BIOL 426, 470, or 478	3
BIOL 4XX	3 BIOL 4XX	3
ENGL 202C [†]	3 General Education Course (IL)	3
General Education Course (N)	3 General Education Course (US)	3
Elective (see notes)	3 Elective (see notes)	3

Elective (see notes)	1.5
	16.5
	15

Total Credits 124.5-129.5

- * Course requires a grade of C or better for the major
- ‡ Course requires a grade of C or better for General Education
- # Course is an Entrance to Major requirement
- † Course satisfies General Education and degree requirement

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy Cultural Diversity Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GHW, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain attribute is used to fill audit requirements. Foundations courses (GWS and GQ) require a grade of 'C' or better.

All incoming Schreyer Honors College first-year students at University Park will take ENGL 137H/CAS 137H in the fall semester and ENGL 138T/CAS 138T in the spring semester. These courses carry the GWS designation and satisfy a portion of that General Education requirement. If the student's program prescribes GWS these courses will replace both ENGL 15/ENGL 30H and CAS 100A/CAS 100B/CAS 100C. Each course is 3 credits.

Program Notes:

- Course offerings change each term. BIOL 110, BIOL 114, BIOL 115, and BIOL 116 are offered in fall and spring terms. BIOL 220W, BIOL 224, BIOL 225W, and BIOL 226W are offered in the fall terms only. BIOL 230W, BIOL 234, BIOL 235W, BIOL 236W, BIOL 240W, BIOL 244, and BIOL 245W are offered only during spring terms. Note in LionPATH that 400-level Biology course selections differ in fall, spring, and summer terms.
- Elective (Supporting) Courses: Elective credits range between 10 to 27 credits, depending on your option within the Biology major and your specific course selections. Elective courses are those completed for personal interest, to be counted toward a minor, or to advance your career path following graduation.
- Disallowed credits: The following courses MAY NOT be used for credit (NOT EVEN AS ELECTIVES) towards a degree in Biology and will NOT be counted towards graduation: BMB 1, BISC 1, 2, 3, or 4, no BIOL course under 110, no CHEM course under 110, ENGL 4, 5, ESL 4, CAS 126, no MICRB course under 199, LLED 5, 10, PHSC 1, 150, 151, PHYS 1, no MATH course under 21, for MATH 140A (only 4 of 6 credits count toward the Biology degree), more than 9 credits of SC 295, 395, 495.

Advising Notes:

- The General Education Program consists of ~45 credits that are distributed among the following categories:

- General Speaking and Writing credits are fulfilled by completing ENGL 15, CAS 100A or CAS 100B or CAS 100C, and ENGL 202A or ENGL 202B or ENGL 202C or ENGL 202D.
- General Quantification (GQ) requirement is met by completing MATH 140/MATH 140B and STAT 200.
- General Arts, Humanities, & Social Science requirements are met by taking 18 credits of courses indicated as GA, GH, or GS. Some substitutions are allowed; see an adviser for more information.
- General Health and Wellness (GHW) requirements are met by completing 3 credits of GHW coursework.
- General Natural Science (GN) requirement is met by completing the core BIOL courses – BIOL 110 or (BIOL 114 and BIOL 115) or (BIOL 114 and BIOL 116), BIOL 220W or (BIOL 224 and BIOL 225W) or (BIOL 224 or BIOL 226W), BIOL 230W or (BIOL 234 and BIOL 235W) or (BIOL 234 and BIOL 236W), and BIOL 240W or (BIOL 244 and BIOL 245W).
- Integrative Studies requirement is met by taking 6 credits of Inter-Domain (N) courses. A course listed as a GA, GH, or GS that also carries the N designation can fulfill both Gen Ed categories.
- United States and International Cultures requirement is met by taking one course designated as "US" and one course designated as "IL". A course designated as "US;IL" can be used for either US or IL requirement, but cannot be used to satisfy both US and IL credits. A course listed as a GA, GH, or GS that also carries a US or IL or US/IL designation can fulfill both Gen Ed category requirements.
- General Writing Across the Curriculum (3 credits of "W" are required). This requirement is met by taking BIOL 220W or (BIOL 224 and BIOL 225W) or (BIOL 224 or BIOL 226W), BIOL 230W or (BIOL 234 and BIOL 235W) or (BIOL 234 and BIOL 236W) and BIOL 240W or (BIOL 244 and BIOL 245W), each carrying one credit of "W". Students can complete additional "W" courses if they choose.
- First-Year Seminar requirement is met by completing PSU 16 or a First-Year Seminar course offered through a different department or college.

Plant Biology Option: Biology, B.S. at University Park Campus

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year

Fall	Credits Spring	Credits
BIOL 110, 114 and 115, or 114 and 116 ^{*#}	4-5 BIOL 230W, 234 and 235W, 234 and 236W, 240W, or 244 and 245W ^{*#}	4-5
CHEM 110 ^{*#†}	3 CHEM 112 [*]	3
CHEM 111 [†]	1 CHEM 113 [†]	1
ENGL 15 or ENGL 30H [†] or General Education Course (GA, GH, GS)	3 ENGL 15 or ENGL 30H [†] or General Education Course (GA, GH, GS)	3
MATH 140B or 140 ^{*†#†}	4 STAT 250, 200, or 240 ^{††}	3-4
PSU 16	1	
	16-17	14-16

Second Year

Fall	Credits Spring	Credits
BIOL 220W, 224 and 225W, or 224 and 226W ^{*#}	4-5 BIOL 230W, 234 and 235W, 234 and 236W, 240W, or 244 and 245W ^{*#}	4-5
CHEM 210 or 202	3 CAS 100A, 100B, or 100C [‡]	3
General Education Course (GA)	3 CHEM 212 or 203	3
Elective (see notes)	3 CHEM 213W	2
Elective (see notes)	3 General Education Course (GH)	3
	16-17	15-16

Third Year

Fall	Credits Spring	Credits
BIOL 441	3 BIOL 4XX	3
BMB 401 (or BIOL 4XX)	3 BMB 402 (or BIOL 4XX)	3
PHYS 250 [†]	4 PHYS 251	4
General Education Course (GS)	3 General Education Course (GHW)	3
Elective (see notes)	3 Elective (see notes)	3
	16	16

Fourth Year

Fall	Credits Spring	Credits
BIOL 4XX	3 BIOL 4XX	3
BIOL 4XX	3 BIOL 4XX	3
ENGL 202C [‡]	3 General Education Course (N)	3
General Education Course (N)	3 General Education Course (US)	3
General Education Course (IL)	3 Elective (see notes)	3

Elective (see notes)	1.5
	16.5
	15

Total Credits 124.5-129.5

- * Course requires a grade of C or better for the major
- ‡ Course requires a grade of C or better for General Education
- # Course is an Entrance to Major requirement
- † Course satisfies General Education and degree requirement

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy Cultural Diversity Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GHW, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain attribute is used to fill audit requirements. Foundations courses (GWS and GQ) require a grade of 'C' or better.

All incoming Schreyer Honors College first-year students at University Park will take ENGL 137H/CAS 137H in the fall semester and ENGL 138T/CAS 138T in the spring semester. These courses carry the GWS designation and satisfy a portion of that General Education requirement. If the student's program prescribes GWS these courses will replace both ENGL 15/ENGL 30H and CAS 100A/CAS 100B/CAS 100C. Each course is 3 credits.

Program Notes:

- Course offerings change each term. BIOL 110, BIOL 114, BIOL 115, and BIOL 116 are offered in fall and spring terms. BIOL 220W, BIOL 224, BIOL 225W, and BIOL 226W are offered in the fall terms only. BIOL 230W, BIOL 234, BIOL 235W, BIOL 236W, BIOL 240W, BIOL 244, and BIOL 245W are offered only during spring terms. Note in LionPATH that 400-level Biology course selections differ in fall, spring, and summer terms.
- Elective (Supporting) Courses: Elective credits range between 10 to 27 credits, depending on your option within the Biology major and your specific course selections. Elective courses are those completed for personal interest, to be counted toward a minor, or to advance your career path following graduation.
- Disallowed credits: The following courses MAY NOT be used for credit (NOT EVEN AS ELECTIVES) towards a degree in Biology and will NOT be counted towards graduation: BMB 1, BISC 1, 2, 3, or 4, no BIOL course under 110, no CHEM course under 110, ENGL 4, 5, ESL 4, CAS 126, no MICRB course under 199, LLED 5, 10, PHSC 1, 150, 151, PHYS 1, no MATH course under 21, for MATH 140A (only 4 of 6 credits count toward the Biology degree), more than 9 credits of SC 295, 395, 495.

Advising Notes:

- The General Education Program consists of ~45 credits that are distributed among the following categories:

- General Speaking and Writing credits are fulfilled by completing ENGL 15, CAS 100A or CAS 100B or CAS 100C, and ENGL 202A or ENGL 202B or ENGL 202C or ENGL 202D.
- General Quantification (GQ) requirement is met by completing MATH 140/MATH 140B and STAT 200.
- General Arts, Humanities, & Social Science requirements are met by taking 18 credits of courses indicated as GA, GH, or GS. Some substitutions are allowed; see an adviser for more information.
- General Health and Wellness (GHW) requirements are met by completing 3 credits of GHW coursework.
- General Natural Science (GN) requirement is met by completing the core BIOL courses – BIOL 110 or (BIOL 114 and BIOL 115) or (BIOL 114 and BIOL 116), BIOL 220W or (BIOL 224 and BIOL 225W) or (BIOL 224 or BIOL 226W), BIOL 230W or (BIOL 234 and BIOL 235W) or (BIOL 234 and BIOL 236W), and BIOL 240W or (BIOL 244 and BIOL 245W).
- Integrative Studies requirement is met by taking 6 credits of Inter-Domain (N) courses. A course listed as a GA, GH, or GS that also carries the N designation can fulfill both Gen Ed categories.
- United States and International Cultures requirement is met by taking one course designated as "US" and one course designated as "IL". A course designated as "US;IL" can be used for either US or IL requirement, but cannot be used to satisfy both US and IL credits. A course listed as a GA, GH, or GS that also carries a US or IL or US/IL designation can fulfill both Gen Ed category requirements.
- General Writing Across the Curriculum (3 credits of "W" are required). This requirement is met by taking BIOL 220W or (BIOL 224 and BIOL 225W) or (BIOL 224 or BIOL 226W), BIOL 230W or (BIOL 234 and BIOL 235W) or (BIOL 234 and BIOL 236W) and BIOL 240W or (BIOL 244 and BIOL 245W), each carrying one credit of "W". Students can complete additional "W" courses if they choose.
- First-Year Seminar requirement is met by completing PSU 16 or a First-Year Seminar course offered through a different department or college.

Vertebrate Physiology Option: Biology, B.S. at University Park Campus

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year

Fall	Credits Spring	Credits
BIOL 110, 114 <i>and</i> 115, or 114 <i>and</i> 116 ^{*#}	4-5 BIOL 230W, 234 <i>and</i> 235W, 234 <i>and</i> 236W, 240W, or 244 <i>and</i> 245W ^{*#}	4-5
CHEM 110 ^{*#†}	3 CHEM 112 [*]	3
CHEM 111 [†]	1 CHEM 113 [†]	1
ENGL 15 or ENGL 30H [†] or General Education Course (GA, GH, GS)	3 ENGL 15 or ENGL 30H [†] or General Education Course (GA, GH, GS)	3
MATH 140B or 140 ^{*†#†}	4 STAT 250, 200, or 240 ^{††}	3-4
PSU 16	1	
	16-17	14-16

Second Year

Fall	Credits Spring	Credits
BIOL 220W, 224 <i>and</i> 225W, or 224 <i>and</i> 226W ^{*#}	4-5 BIOL 230W, 234 <i>and</i> 235W, 234 <i>and</i> 236W, 240W, or 244 <i>and</i> 245W ^{*#}	4-5
CHEM 210 or 202	3 CAS 100A, 100B, or 100C [‡]	3
General Education Course (GA)	3 CHEM 212 or 203	3
Elective (see notes)	3 CHEM 213W	2
Elective (see notes)	3 General Education Course (GH)	3
	16-17	15-16

Third Year

Fall	Credits Spring	Credits
BIOL 4XX	3 BIOL 402W	3
BMB 401	3 BIOL 4XX	3
PHYS 250 [†]	4 PHYS 251	4
General Education Course (GS)	3 General Education Course (GHW)	3
Elective (see notes)	3 Elective (see notes)	3
	16	16

Fourth Year

Fall	Credits Spring	Credits
BIOL 472	3 BIOL 473	2
BIOL 4XX	3 BIOL 4XX	3
ENGL 202C [‡]	3 General Education Course (N)	3
General Education Course (N)	3 General Education Course (US)	3
General Education Course (IL)	3 Elective (see notes)	3

Elective (see notes)	1.5 Elective (see notes)	1.5
	16.5	15.5

Total Credits 125-130

- * Course requires a grade of C or better for the major
- ‡ Course requires a grade of C or better for General Education
- # Course is an Entrance to Major requirement
- † Course satisfies General Education and degree requirement

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy Cultural Diversity Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GHW, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain attribute is used to fill audit requirements. Foundations courses (GWS and GQ) require a grade of 'C' or better.

All incoming Schreyer Honors College first-year students at University Park will take ENGL 137H/CAS 137H in the fall semester and ENGL 138T/CAS 138T in the spring semester. These courses carry the GWS designation and satisfy a portion of that General Education requirement. If the student's program prescribes GWS these courses will replace both ENGL 15/ENGL 30H and CAS 100A/CAS 100B/CAS 100C. Each course is 3 credits.

Program Notes:

- Course offerings change each term. BIOL 110, BIOL 114, BIOL 115, and BIOL 116 are offered in fall and spring terms. BIOL 220W, BIOL 224, BIOL 225W, and BIOL 226W are offered in the fall terms only. BIOL 230W, BIOL 234, BIOL 235W, BIOL 236W, BIOL 240W, BIOL 244, and BIOL 245W are offered only during spring terms. Note in LionPATH that 400-level Biology course selections differ in fall, spring, and summer terms.
- Elective (Supporting) Courses: Elective credits range between 10 to 27 credits, depending on your option within the Biology major and your specific course selections. Elective courses are those completed for personal interest, to be counted toward a minor, or to advance your career path following graduation.
- Disallowed credits: The following courses MAY NOT be used for credit (NOT EVEN AS ELECTIVES) towards a degree in Biology and will NOT be counted towards graduation: BMB 1, BISC 1, 2, 3, or 4, no BIOL course under 110, no CHEM course under 110, ENGL 4, 5, ESL 4, CAS 126, no MICRB course under 199, LLED 5, 10, PHSC 1, 150, 151, PHYS 1, no MATH course under 21, for MATH 140A (only 4 of 6 credits count toward the Biology degree), more than 9 credits of SC 295, 395, 495.

Advising Notes:

- The General Education Program consists of ~45 credits that are distributed among the following categories:

- General Speaking and Writing credits are fulfilled by completing ENGL 15, CAS 100A or CAS 100B or CAS 100C, and ENGL 202A or ENGL 202B or ENGL 202C or ENGL 202D.
- General Quantification (GQ) requirement is met by completing MATH 140/MATH 140B and STAT 200.
- General Arts, Humanities, & Social Science requirements are met by taking 18 credits of courses indicated as GA, GH, or GS. Some substitutions are allowed; see an adviser for more information.
- General Health and Wellness (GHW) requirements are met by completing 3 credits of GHW coursework.
- General Natural Science (GN) requirement is met by completing the core BIOL courses – BIOL 110 or (BIOL 114 and BIOL 115) or (BIOL 114 and BIOL 116), BIOL 220W or (BIOL 224 and BIOL 225W) or (BIOL 224 or BIOL 226W), BIOL 230W or (BIOL 234 and BIOL 235W) or (BIOL 234 and BIOL 236W), and BIOL 240W or (BIOL 244 and BIOL 245W).
- Integrative Studies requirement is met by taking 6 credits of Inter-Domain (N) courses. A course listed as a GA, GH, or GS that also carries the N designation can fulfill both Gen Ed categories.
- United States and International Cultures requirement is met by taking one course designated as "US" and one course designated as "IL". A course designated as "US;IL" can be used for either US or IL requirement, but cannot be used to satisfy both US and IL credits. A course listed as a GA, GH, or GS that also carries a US or IL or US/IL designation can fulfill both Gen Ed category requirements.
- General Writing Across the Curriculum (3 credits of "W" are required). This requirement is met by taking BIOL 220W or (BIOL 224 and BIOL 225W) or (BIOL 224 or BIOL 226W), BIOL 230W or (BIOL 234 and BIOL 235W) or (BIOL 234 and BIOL 236W) and BIOL 240W or (BIOL 244 and BIOL 245W), each carrying one credit of "W". Students can complete additional "W" courses if they choose.
- First-Year Seminar requirement is met by completing PSU 16 or a First-Year Seminar course offered through a different department or college.

Biology, B.S. at Commonwealth Campuses

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year

Fall	Credits Spring	Credits
BIOL 110 ^{*#}	4 BIOL 230W ^{*#}	4
CHEM 110 ^{*#†}	3 CHEM 112 ^{*†}	3
CHEM 111 [†]	1 CHEM 113 [†]	1
ENGL 15, 30H, or ESL 15 [‡]	3 General Education Course	3
MATH 140B or 140 ^{*†#†}	4 General Education Course	3
First-Year Seminar	1	
	16	14

Second Year

Fall	Credits Spring	Credits
BIOL 220W ^{*#}	4 BIOL 240W ^{*#}	4
CHEM 210 (consult with an academic adviser for alternative options)	3 CHEM 212 (consult with an academic adviser for alternative options)	3
STAT 200, 240, or 250 ^{††}	3-4 CHEM 213W (consult with an academic adviser for alternative options)	2
General Education Course	3 CAS 100A, 100B, or 100C [‡]	3
Supporting course (consult with an academic adviser for options)	3 Supporting course (consult with an academic adviser for options)	3
	16-17	15

Third Year

Fall	Credits Spring	Credits
BIOL 400 Level Selection (consult with an academic adviser for options)	3 BIOL 400 Level Selection (consult with an academic adviser for options)	3
PHYS 250 (consult with an academic adviser for alternative options) [†]	4 PHYS 251 (consult with adviser for alternative)	4
Supporting course (consult with an academic adviser for options)	3 Supporting course (consult with an academic adviser for options)	3
General Education Course	3 General Education Course	3
Supporting course (consult with an academic adviser for options)	3 Supporting course (consult with an academic adviser for options)	3
	16	16

Fourth Year

Fall	Credits Spring	Credits
BIOL 400 Level Selection (consult with an academic adviser for options)	3 BIOL 400 Level Selection (consult with an academic adviser for options)	3
BIOL 400 Level Selection (consult with an academic adviser for options)	3 BIOL 400 Level Selection (consult with an academic adviser for options)	3

General Education Course	3 General Education Course	3
ENGL 202C, 202A, 202B, or 202D	3 General Education Course	3
Supporting course (consult with an academic adviser for options)	3 Supporting course (consult with an academic adviser for options)	3
Supporting course (consult with an academic adviser for options)	1	
	16	15

Total Credits 124-125

* Course requires a grade of C or better for the major

‡ Course requires a grade of C or better for General Education

Course is an Entrance to Major requirement

† Course satisfies General Education and degree requirement

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy Cultural Diversity Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GHW, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain attribute is used to fill audit requirements. Foundations courses (GWS and GQ) require a grade of 'C' or better.