

BIOTECHNOLOGY, B.S.

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 2023-24 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 (*Note: the archive only contains suggested academic plans beginning with the 2018-19 edition of the Undergraduate Bulletin*).

General Biotechnology Option: Biotechnology, 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
PSU 16	1 MICRB 201 ¹	3
CHEM 110 ^{*#†}	3 MICRB 202 or 203 (Consult with an academic adviser for options)	2
CHEM 111 ^{*#†}	1 CHEM 112 ^{*#†}	3
MATH 140 or 140B ^{*†##}	4 CHEM 113 [†]	1
ENGL 15 or 30H [†]	3 MATH 141 or 141B ^{††}	4
General Education Course	3 CAS 100A, 100B, or 100C [‡]	3
	15	16

Second Year

Fall	Credits Spring	Credits
BMB 251 ¹	3 BMB 252 ¹	3
CHEM 202 or 210	3 CHEM 203 or 212 and 213	3
PHYS 250 [†]	4 PHYS 251 [†]	4
Department List C (Consult with an academic adviser for options)	3 General Education Course	3
General Education Course	3 General Education Course	3
	16	16

Third Year

Fall	Credits Spring	Credits
BIOTC 489 ²	3 BIOTC 459 ²	3
BMB 211	3 BMB 221	2
MICRB 421W	3 BMB 442	3
Department List C (Consult with an academic adviser for options)	3 BIOL 322	3
General Education Course	3 ENGL 202C, 202A, 202B, or 202C [‡]	3

General Education Course (GHW)	1.5 General Education Course (GHW)	1.5
	16.5	15.5
Fourth Year		
Fall	Credits Spring	Credits
BIOTC 416 ²	2 MICRB 410 ²	3
BIOTC 479 ²	3 BIOTC 400-Level Lecture Selections (Consult with an academic adviser for options) ²	3
BIOTC 400 Level Lecture Selections (Consult with an academic adviser for options) ²	3 STAT 250	3
Department list C Free (Consult with an academic adviser for options)	4 Department List C (Consult with an academic adviser for options)	3
General Education Course	3 Department List C (Consult with an academic adviser for options)	3
	15	15

Total Credits 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

¹ To graduate, a grade of C or better is required in two of the following courses: Introductory Microbiology (MICRB 201), Molecular and Cell Biology I (BMB 251)/Molecular and Cell Biology I (MICRB 251), and/or Molecular and Cell Biology II (BMB 252)/Molecular and Cell Biology II (MICRB 252).

² To graduate, a grade of C or better is required in 9 credits of any BIOTC, BMB or MICRB 400-level course except those listed in the requirements for the major (consult with an academic adviser for clarification)

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.

General Biotechnology Option (math 22 sTART): Biotechnology, 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 Summer	Credits
PSU 16	1 CHEM 110 ^{*#†}	3 CHEM 112 ^{*#†}	3
MATH 22 ¹	3 CHEM 111 ^{*#†}	1 CHEM 113 [†]	1
MATH 26 ¹	3 MATH 140 or 140B ^{*#†1}	4	
ENGL 15, ESL 15, or ENGL 30H [†]	3 CAS 100A, 100B, or 100C [†]	3	
General Education Course	6 General Education Course	3	
16		14	4
Second Year			
Fall	Credits Spring	Credits Summer	Credits
MICRB 201 ²	3 BMB 251 ²	3 PHYS 251 (Consult with an academic adviser for alternative options) [†]	4
MICRB 202	2 CHEM 203	3	
CHEM 202	3 PHYS 250 (Consult with an academic adviser for alternative options) [†]	4	
MATH 141 or 141B ^{†1}	4 General Education Course	3	
General Education Course	3		
15		13	4
Third Year			
Fall	Credits Spring	Credits	
BMB 252 ²	3 BIOTC 459 ³	3	
BMB 211	3 BMB 221	2	
MICRB 421W	3 BMB 442	3	
Department List C (Consult with an academic adviser for options)	2 BIOL 322	3	

General Education Course	3 ENGL 202C, 202A, 202B, or 202D [†]	3
General Education Course (GHW)	1.5 General Education Course (GHW)	1.5
15.5		15.5
Fourth Year		
Fall	Credits Spring	Credits
BIOTC 416 ³	3 BIOTC 479 ³	3
BIOTC 489 ³	3 BIOTC 400-Level Lecture Selections (Consult with an academic adviser for options) ³	3
BIOTC 400 Level Lecture Selections (Consult with an academic adviser for options) ³	3 MICRB 410 ³	3
Department List C (Consult with an academic adviser for options)	5 STAT 250 ¹	3
	Department List C (Consult with an academic adviser for options)	3
14		15

Total Credits 126

* 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

¹ 6 credits of MATH 22, MATH 26, MATH 140, MATH 141, or STAT 250 require a grade of C or better for General Education.

² To graduate, a grade of C or better is required in two of the following courses: Introductory Microbiology (MICRB 201), Molecular and Cell Biology I (BMB 251)/Molecular and Cell Biology I (MICRB 251), and/or Molecular and Cell Biology II (BMB 252)/Molecular and Cell Biology II (MICRB 252).

³ To graduate, a grade of C or better is required in 9 credits of any BIOTC, BMB or MICRB 400-level course except those listed in the requirements for the major (consult with an academic adviser for clarification).

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.

Clinical Laboratory Science Option: Biotechnology, 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
PSU 16	1 MICRB 201 ¹	3
CHEM 110 ^{*#†}	3 MICRB 202 or 203 (Consult with an academic adviser for options)	2
CHEM 111 ^{*#†}	1 CHEM 112 ^{*#†}	3
MATH 140 or 140B ^{*†#†}	4 CHEM 113 [†]	1
ENGL 15, 30H, or ESL 15 [†]	3 MATH 141 or 141B ^{††}	4
General Education Course	3 CAS 100A, 100B, or 100C [‡]	3
	15	16

Second Year

Fall	Credits Spring	Credits
MICRB 251 ¹	3 MICRB 252 ¹	3
CHEM 202 or 210	3 BMB 211	3
PHYS 250 [†]	4 CHEM 203 or 212 <i>and</i> 213	3
General Education Course	3 PHYS 251 [†]	4
General Education Course	3 General Education Course	3
	16	16

Third Year

Fall	Credits Spring	Credits
BMB 212	1 BMB 221	2
BIOL 222 or MICRB 410 ²	3 BIOL 322 or MICRB 410 ²	3
MICRB 421W	3 MICRB 412 ²	3
Department List C (Consult with an academic adviser for options)	1.5 MICRB 422	2
General Education Course	3 Department List C (Consult with an academic adviser for options)	1.5
General Education Course	3 ENGL 202C, 202A, 202B, or 202D [‡]	3
General Education Course (GHW)	1.5 General Education Course (GHW)	1.5
	16	16

Fourth Year

Fall	Credits Spring	Credits
MICRB 405A ²	8 MICRB 405D ²	5
MICRB 405B ²	1 MICRB 405E ²	7
MICRB 405C ²	6 MICRB 405F ²	3
	15	15

Total Credits 125

Course is an Entrance to Major requirement

† Course satisfies General Education and degree requirement

¹ To graduate, a grade of C or better is required in two of the following courses: Introductory Microbiology (MICRB 201), Molecular and Cell Biology I (BMB 251)/Molecular and Cell Biology I (MICRB 251), and/or Molecular and Cell Biology II (BMB 252)/Molecular and Cell Biology II (MICRB 252).

² To graduate, a grade of C or better is required in 9 credits of any BIOTC, BMB or MICRB 400-level course except those listed in the requirements for the major (consult with an academic adviser for clarification)

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.

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

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

Clinical Laboratory Science Option (MATH 22 Start): Biotechnology, 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 Summer	Credits
PSU 16	1 CHEM 110 ^{*#†}	3 CHEM 112 ^{*#†}	3
MATH 22 ¹	3 CHEM 111 ^{*#†}	1 CHEM 113 [†]	1
MATH 26 ¹	3 MATH 140 or 140B ^{*#†1}	4	
ENGL 15, ESL 15, or ENGL 30H [†]	3 CAS 100A, 100B, or 100C [†]	3	
General Education Course	6 General Education Course	3	
	16	14	4

Second Year

Fall	Credits Spring	Credits Summer	Credits
MICRB 201 ²	3 BMB 251 ²	3 PHYS 251 (Consult with an academic adviser for alternative options) [†]	4
MICRB 202	2 BMB 211	3	
CHEM 202	3 CHEM 203	3	
MATH 141 or 141B ⁺¹	4 PHYS 250 (Consult with an academic adviser for alternative options) [†]	4	
General Education Course	3 General Education Course	3	
	15	16	4

Third Year

Fall	Credits Spring	Credits
BMB 252 ²	3 BMB 221	2
BMB 212	1 BIOL 322 or MICRB 410 (Consult with an academic adviser for options) ³	3
BIOL 222 or MICRB 410 (Consult with an academic adviser for options) ³	3 MICRB 412 ³	3

MICRB 421W	3 MICRB 422	2
General Education Course	3 ENGL 202C, 202A, 202B, or 202D [†]	3
General Education Course (GHW)	1.5 General Education Course (GHW)	1.5
	14.5	14.5

Fourth Year

Fall	Credits Spring	Credits
MICRB 405A ³	8 MICRB 405D ³	5
MICRB 405B ³	1 MICRB 405E ³	7
MICRB 405C ³	6 MICRB 405F ³	3
	15	15

Total Credits 128

* 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

¹ 6 credits of MATH 22, MATH 26, MATH 140, or MATH 141 require a grade of C or better for General Education.

² To graduate, a grade of C or better is required in two of the following courses: Introductory Microbiology (MICRB 201), Molecular and Cell Biology I (BMB 251)/Molecular and Cell Biology I (MICRB 251), and/or Molecular and Cell Biology II (BMB 252)/Molecular and Cell Biology II (MICRB 252).

³ To graduate, a grade of C or better is required in 9 credits of any BIOTC, BMB or MICRB 400-level course except those listed in the requirements for the major (consult with an academic adviser for clarification).

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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.

General Biotechnology Option: Biotechnology, B.S. at Commonwealth Campuses

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First Year

Fall	Credits Spring	Credits
CHEM 110 ^{*#†}	3 CHEM 112 ^{*#†}	3
CHEM 111 ^{*#†}	1 CHEM 113 [†]	1
MATH 140 ^{*#††}	4 MATH 141 ^{††}	4
BIOL 110 [†]	4 Department List C (Consult with an academic adviser for options)	4
ENGL 15, ESL 15, or ENGL 30H [†]	3 General Education Course	3
General Education Course (GHW)	1.5 General Education Course (GHW)	1.5
	16.5	16.5

Second Year

Fall	Credits Spring	Credits
BIOL 230W ^{†1}	4 CHEM 212	3
CHEM 210	3 CHEM 213	2
PHYS 250 (Consult with an academic adviser for alternative options) [†]	4 PHYS 251 (Consult with an academic adviser for alternative options) [†]	4
General Education Course	3 STAT 200 [†]	4
CAS 100A, 100B, or 100C [†]	3 General Education Course	3
	17	16

Third Year

Fall	Credits Spring	Credits
BMB 211	3 BIOTC 459 ²	3
BMB 252 ¹	3 BMB 221	2
MICRB 201 ¹	3 BMB 442	3
MICRB 202	2 BIOL 322	3
General Education Course	3 ENGL 202C, 202A, 202B, or 202D [†]	3
Department List C (Consult with an academic adviser for options)	2	
	16	14

Fourth Year

Fall	Credits Spring	Credits
BIOTC 416 ²	3 BIOTC 479 ²	3
BIOTC 489 ²	3 MICRB 410 ²	3
MICRB 421W	3 BIOTC 400 Level Lecture Selections (Consult with an academic adviser for options) ²	3

BIOTC 400 Level Lecture Selections (Consult with an academic adviser for options) ²	3 General Education Course	3
General Education Course	3 Department List C (Consult with an academic adviser for options)	2
	15	14

Total Credits 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

¹ To graduate, a grade of C or better is required in two of the following courses: Introductory Microbiology (MICRB 201), Molecular and Cell Biology I (BMB 251)/Molecular and Cell Biology I (MICRB 251) or Biology: Molecules and Cells (BIOL 230W), and/or Molecular and Cell Biology II (BMB 252)/Molecular and Cell Biology II (MICRB 252).

² To graduate, a grade of C or better is required in 9 credits of any BIOTC, BMB or MICRB 400-level course except those listed in the requirements for the major (consult with an academic adviser for clarification).

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General Biotechnology Option (math 22 sTART): Biotechnology, 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	CreditsSpring	CreditsSummer	Credits
BIOL 110 [†]	4 CHEM 110 ^{*#†}	3 CHEM 112 ^{*#†}	3
MATH 22 ¹	3 CHEM 111 ^{*#†}	1 CHEM 113 [†]	1
MATH 26 ¹	3 MATH 140 ^{*#†1}	4	
ENGL 15, ESL 15, or ENGL 30H [†]	3 CAS 100A, 100B, or 100C [‡]	3	
General Education Course	3 General Education Course	3	
	16	14	4

Second Year

Fall	CreditsSpring	CreditsSummer	Credits
BIOL 230W ^{†2}	4 CHEM 212	3 PHYS 251 (Consult with an academic adviser for alternative options) [†]	4
CHEM 210	3 CHEM 213	2	
MATH 141 ^{†1}	4 PHYS 250 (Consult with and academic adviser for alternative options) [†]	4	
General Education Course	3 STAT 200 ¹	4	
General Education Course (GHW)	1.5 General Education Course	3	
	15.5	16	4

Third Year

Fall	CreditsSpring	Credits
BMB 211	3 BIOTC 459 ³	3
BMB 252 ²	3 BMB 221	2
MICRB 201 ²	3 BMB 442	3
MICRB 202	2 BIOL 322	3
General Education Course	3 ENGL 202C, 202A, 202B, or 202D [†]	3
	14	14

Fourth Year

Fall	CreditsSpring	Credits
BIOTC 416 ³	3 BIOTC 479 ³	3
BIOTC 489 ³	3 MICRB 410 ³	3
MICRB 421W	3 BIOTC 400 Level Lecture Selections (Consult with an academic adviser for options) ³	3
BIOTC 400 Level Lecture Selections (Consult with an academic adviser for options) ³	3 General Education Course	3
General Education Course (GHW)	1.5 Department List C (Consult with an academic adviser for options)	2
	13.5	14

Total Credits 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

¹ 6 credits of MATH 22, MATH 26, MATH 140, MATH 141, or STAT 200 require a grade of C or better for General Education.

² To graduate, a grade of C or better is required in two of the following courses: Introductory Microbiology (MICRB 201), Molecular and Cell Biology I (BMB 251)/Molecular and Cell Biology I (MICRB 251) or Biology: Molecules and Cells (BIOL 230W), and/or Molecular and Cell Biology II (BMB 252)/Molecular and Cell Biology II (MICRB 252).

³ To graduate, a grade of C or better is required in 9 credits of any BIOTC, BMB or MICRB 400-level course except those listed in the requirements for the major (consult with an academic adviser for clarification).

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Clinical Laboratory Science Option: Biotechnology, B.S. at Commonwealth 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	Summer	Credits
CHEM 110 ^{*#†}	3	BIOL 230W ^{†1}	4	General Education Course	3
CHEM 111 ^{*#†}	1	CHEM 112 ^{*#†}	3		
MATH 140 ^{*†#†}	4	CHEM 113 [†]	1		
BIOL 110 [†]	4	MATH 141 ^{††}	4		
ENGL 15, 30H, or ESL 15 [†]	3	CAS 100A, 100B, or 100C [†]	3		
		General Education Course (GHW)	1.5		
	15		16.5		3

Second Year

Fall	Credits	Spring	Credits	Summer	Credits
MICRB 201 ¹	3	BIOL 322 or 222 ²	3	BMB 211	3
MICRB 202	2	CHEM 212	3		
CHEM 210	3	CHEM 213	2		
PHYS 250 (Consult with an academic adviser for alternative options) [†]	4	PHYS 251 (Consult with an academic adviser for alternative options) [†]	4		
General Education Course	3	General Education Course	3		
	15		15		3

Third Year

Fall	Credits	Spring	Credits
BMB 212	1	BMB 221	2
BMB 252 ¹	3	MICRB 410 ³	3
MICRB 421W	3	MICRB 412 ³	3
General Education Course (GHW)	1.5	MICRB 422	2
General Education Course	6	ENGL 202C, 202A, 202B, or 202D [†]	3
		General Education Course	3
	14.5		16

Fourth Year

Fall	Credits	Spring	Credits
MICRB 405A ³	8	MICRB 405D ³	5
MICRB 405B ³	1	MICRB 405E ³	7
MICRB 405C ³	6	MICRB 405F ³	3
	15		15

Total Credits 128

* 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

¹ To graduate, a grade of C or better is required in two of the following courses: Introductory Microbiology (MICRB 201), Molecular and Cell Biology I (BMB 251)/Molecular and Cell Biology I (MICRB 251) or Biology: Molecules and Cells (BIOL 230W), and/or Molecular and Cell Biology II (BMB 252)/Molecular and Cell Biology II (MICRB 252).

² BIOL 222 is an approved substitute for BIOL 322.

³ To graduate, a grade of C or better is required in 9 credits of any BMB or MICRB 400-level course except those listed in the requirements for the major (consult with an academic adviser for clarification).

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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.

Clinical Laboratory Science Option (MATH 22 Start): Biotechnology, B.S. at Commonwealth Campuses

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First Year

Fall	Credits	Spring	Credits	Summer	Credits	
BIOL 110 [†]		4 CHEM 110 ^{*#†}		3 CHEM 112 ^{*#†}		3
MATH 22 ¹		3 CHEM 111 ^{*#†}		1 CHEM 113 [†]		1
MATH 26 ¹		3 MATH 140 ^{*#†1}		4		
ENGL 15, ESL 15, or ENGL 30H [†]		3 CAS 100A, 100B, or 100C [‡]		3		
General Education Course		3 General Education Course		3		
		General Education Course (GHW)		1.5		
		16		15.5		4

Second Year

Fall	Credits	Spring	Credits	Summer	Credits	
MICRB 201 ²		3 BIOL 230W ²		4 PHYS 251 (Consult with an academic adviser for alternative options) [†]		4
MICRB 202		2 CHEM 212		3 BMB 211		3
CHEM 210		3 CHEM 213		2		
MATH 141 ^{†1}		4 PHYS 250 (Consult with an academic adviser for alternative options) [†]		4		
General Education Course		3 General Education Course		3		
		15		16		7

Third Year

Fall	Credits	Spring	Credits	Summer	Credits	
BIOL 222 or MICRB 410 (Consult with an academic adviser for options) ³		3 BIOL 322 or MICRB 410 (Consult with an academic adviser for options) ³		3		
BMB 212		1 BMB 221		2		
BMB 252 ²		3 MICRB 412 ³		3		
MICRB 421W		3 MICRB 422		2		

General Education Course	3 ENGL 202C, 202A, 202B, or 202D [†]	3
General Education Course (GHW)	1.5 General Education Course	3

14.5

16

Fourth Year

Fall	Credits	Spring	Credits	Summer	Credits	
MICRB 405A ³		8 MICRB 405D ³		5		
MICRB 405B ³		1 MICRB 405E ³		7		
MICRB 405C ³		6 MICRB 405F ³		3		
		15		15		

Total Credits 134

* 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

¹ 6 credits of MATH 22, MATH 26, MATH 140, or MATH 141 require a grade of C or better for General Education.

² To graduate, a grade of C or better is required in two of the following courses: Introductory Microbiology (MICRB 201), Molecular and Cell Biology I (BMB 251)/Molecular and Cell Biology I (MICRB 251) or Biology: Molecules and Cells (BIOL 230W), and/or Molecular and Cell Biology II (BMB 252)/Molecular and Cell Biology II (MICRB 252).

³ To graduate, a grade of C or better is required in 9 credits of any BIOTC, BMB or MICRB 400-level course except those listed in the requirements for the major (consult with an academic adviser for clarification).

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.