

# MICROBIOLOGY, 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*).

### Microbiology, 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 <sup>1</sup>	3
CHEM 110 <sup>*#†</sup>	3 MICRB 203 or 202 (Consult with an academic adviser for options)	2
CHEM 111 <sup>*#†</sup>	1 CHEM 112 <sup>*#†</sup>	3
MATH 140 or 140B <sup>*††</sup>	4 CHEM 113 <sup>†</sup>	1
ENGL 15, 30H, or ESL 15 <sup>†</sup>	3 MATH 141 or 141B <sup>††</sup>	4
General Education Course	3 CAS 100A, 100B, or 100C <sup>†</sup>	3
	<b>15</b>	<b>16</b>

#### Second Year

Fall	Credits Spring	Credits
MICRB 251 <sup>1</sup>	3 MICRB 252 <sup>1</sup>	3
CHEM 210	3 CHEM 212	3
PHYS 250 (Consult with an academic adviser for alternative options) <sup>†</sup>	4 CHEM 213	2
Department List C (Consult with an academic adviser for options)	3 PHYS 251 (Consult with an academic adviser for alternative options) <sup>†</sup>	4
General Education Course	3 BIOL 322	3
	<b>16</b>	<b>15</b>

#### Third Year

Fall	Credits Spring	Credits
BMB 400 <sup>2</sup>	2 BMB 402 <sup>2</sup>	3
BMB 401 <sup>2</sup>	3 BMB 442	3
MICRB 401 (Consult with an academic adviser for alternative options) <sup>2</sup>	3 MICRB 412 or 415 (Consult with an academic adviser for alternative options) <sup>2</sup>	3
MICRB 421W	3 MICRB 422 (Consult with an academic adviser for alternative options)	2

General Education Course	3 General Education Course	6
General Education Course (GHW)	1.5	
	<b>15.5</b>	<b>17</b>

#### Fourth Year

Fall	Credits Spring	Credits
MICRB 450 (Consult with an academic adviser for alternative options) <sup>2</sup>	2 MICRB 400-Level Selections (Consult with an academic adviser for options) <sup>2</sup>	3
MICRB 400-Level Selections (Consult with an academic adviser for options) <sup>2</sup>	5 MICRB 410 or 415 (Consult with an academic adviser for alternative options) <sup>2</sup>	3
BMB 428 <sup>2</sup>	3 MICRB 447 (Consult with an academic adviser for options)	1
Department List C (consult with an academic adviser for options)	4 ENGL 202C, 202A, 202B, or 202D <sup>†</sup>	3
General Education Course (GHW)	1.5 Department List C (consult with an academic adviser for options)	2
	General Education Course	3
	<b>15.5</b>	<b>15</b>

#### 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

<sup>1</sup> 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).

<sup>2</sup> 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)

#### 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.

## Microbiology, B.S. at University Park Campus (MATH 22 Start)

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 <sup>†</sup>	4 CHEM 110 <sup>*#†</sup>	3 CHEM 112 <sup>*#†</sup>	3
MATH 22 <sup>1</sup>	3 CHEM 111 <sup>*#†</sup>	1 CHEM 113 <sup>†</sup>	1
MATH 26 <sup>1</sup>	3 MATH 140 <sup>*#†1</sup>	4	
ENGL 15, ESL 15, or ENGL 30H <sup>†</sup>	3 CAS 100A, 100B, or 100C <sup>‡</sup>	3	
General Education Course	3 General Education Course	3	
	<b>16</b>	<b>14</b>	<b>4</b>

### Second Year

Fall	CreditsSpring	CreditsSummer	Credits
MICRB 201 <sup>2</sup>	3 BIOL 230W <sup>†2</sup>	4 PHYS 251 (Consult with an academic adviser for alternative options) <sup>†</sup>	4
MICRB 202	2 CHEM 212	3	
CHEM 210	3 CHEM 213	2	
MATH 141 <sup>†1</sup>	4 PHYS 250 (Consult with an academic adviser for alternative options) <sup>†</sup>	4	
General Education Course	3 General Education Course	3	
	<b>15</b>	<b>16</b>	<b>4</b>

### Third Year

Fall	CreditsSpring	Credits
BIOL 222 <sup>4</sup>	3 BMB 402 <sup>3</sup>	3
BMB 252 <sup>2</sup>	3 BMB 442	3
BMB 401 <sup>3</sup>	3 MICRB 412 or 415 (Consult with an academic adviser for alternative options) <sup>3</sup>	3

MICRB 421W	3 MICRB 422 (Consult with an academic adviser for alternative options)	2
General Education Course	3 General Education Course	3
	<b>15</b>	<b>14</b>

### Fourth Year

Fall	CreditsSpring	Credits
BMB 428 <sup>3</sup>	3 BMB 400 <sup>3</sup>	2
MICRB 401 (Consult with an academic adviser for alternative options) <sup>3</sup>	3 MICRB 410 or 415 (Consult with an academic adviser for alternative options) <sup>3</sup>	3
MICRB 450 (Consult with an academic adviser for alternative options) <sup>3</sup>	3 MICRB 447 (Consult with an academic adviser for options)	1
MICRB 400-Level Selections (Consult with an academic adviser for options) <sup>3</sup>	3 MICRB 400-Level Selections (Consult with an academic adviser for options) <sup>3</sup>	3
ENGL 202C, 202A, 202B, or 202D <sup>†</sup>	3 General Education Course (GHW)	3
	<b>15</b>	<b>12</b>

### 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

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

<sup>2</sup> 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).

<sup>3</sup> 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).

<sup>4</sup> BIOL 222 is an approved substitute for BIOL 322.

### University Requirements and General Education Notes:

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## Microbiology, 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
CHEM 110 <sup>*#†</sup>	3 BIOL 230W <sup>†1</sup>	4
CHEM 111 <sup>*#†</sup>	1 CHEM 112 <sup>*#†</sup>	3
MATH 140 <sup>*†#†</sup>	4 CHEM 113 <sup>†</sup>	1
BIOL 110 <sup>†</sup>	4 MATH 141 <sup>††</sup>	4
ENGL 15, ESL 15, or ENGL 30H <sup>†</sup>	3 CAS 100A, 100B, or 100C <sup>‡</sup>	3
General Education Course (GHW)	1.5 General Education Course (GHW)	1.5
<b>16.5</b>		<b>16.5</b>

### Second Year

Fall	Credits Spring	Credits
MICRB 201 <sup>1</sup>	3 BIOL 322 or 222 <sup>3</sup>	3
MICRB 202	2 CHEM 212	3
CHEM 210	3 CHEM 213	2
PHYS 250 (Consult with an academic adviser for alternative options) <sup>†</sup>	4 PHYS 251 (Consult with an academic adviser for alternative options) <sup>†</sup>	4
General Education Course	3 General Education Course	3
<b>15</b>		<b>15</b>

### Third Year

Fall	Credits Spring	Credits
BMB 252 <sup>1</sup>	3 BMB 402 <sup>2</sup>	3
BMB 401 <sup>2</sup>	3 BMB 442	3
MICRB 421W	3 MICRB 412 or 415 (Consult with an academic adviser for alternative options) <sup>2</sup>	3
MICRB 401 (Consult with an academic adviser for alternative options) <sup>2</sup>	3 MICRB 422 (Consult with an academic adviser for alternative options)	2
General Education Course	3 General Education Course	3
Department List C (Consult with an academic adviser for options)	1 Department List C (Consult with an academic adviser for options)	1
<b>16</b>		<b>15</b>

### Fourth Year

Fall	Credits Spring	Credits
BMB 428 <sup>2</sup>	3 BMB 400 <sup>2</sup>	2
MICRB 410 or 450 (Consult with an academic adviser for alternative options) <sup>2</sup>	3 MICRB 412 or 415 (Consult with an academic adviser for alternative options) <sup>2</sup>	3
MICRB 400-Level Selections (Consult with an academic adviser for options) <sup>2</sup>	3 MICRB 447 (Consult with an academic adviser for options)	1

ENGL 202C, 202A, 202B, or 202D <sup>‡</sup>	3 MICRB 400-Level Selections (Consult with an academic adviser for options)	3
General Education Course	3 General Education Course	3
Department List C (Consult with an academic adviser for options)	1 Department List C (Consult with an academic adviser for options)	3
<b>16</b>		<b>15</b>

### Total Credits 125

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