

# BIOCHEMISTRY AND MOLECULAR BIOLOGY, B.S. (BERKS)

**Begin Campus:** Any Penn State Campus

**End Campus:** Berks

## Suggested Academic Plan

The suggested academic plan(s) listed on this page are the plan(s) that are in effect during the 2022-23 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*).

### Biochemistry Option: Biochemistry and Molecular Biology, B.S. at Berks 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
ENGL 15 or 30H (GWS) <sup>‡</sup>	3	CAS 100A or 100B (GWS) <sup>‡</sup>	3
MATH 140 or 140B (GQ) <sup>**‡#</sup>	4	MATH 141 or 141B (GQ) <sup>‡</sup>	4
CHEM 110 (GN) <sup>**‡</sup>	3	CHEM 112 (GN) <sup>**‡</sup>	3
CHEM 111 (GN) <sup>**‡</sup>	1	CHEM 113 (GN) <sup>†</sup>	1
General Education Course (GA or GH or GS)	3	PHYS 211 (GN) <sup>†</sup>	4
First-Year Seminar	1	General Education Course (GHW)	1.5
	<b>15</b>		<b>16.5</b>

#### Second Year

Fall	Credits	Spring	Credits
BMB 251 <sup>*</sup>	3	ENGL 202C (GWS) <sup>‡</sup>	3
CHEM 210	3	BMB 252 <sup>*</sup>	3
PHYS 212	4	CHEM 212	3
MICRB 201 <sup>*</sup>	3	CHEM 213	2
MICRB 202	2	PHYS 213	2
		PHYS 214	2
		General Education Course (GHW)	1.5
	<b>15</b>		<b>16.5</b>

#### Third Year

Fall	Credits	Spring	Credits
BMB 401	3	BMB 402	3
BMB 442	3	BMB 443W	3
BIOL 322	3	CHEM 452	3

CHEM 450	3	STAT 250	3
General Education Course (GA or GH or GS)	3	General Education Course (GA or GH or GS)	3
	<b>15</b>		<b>15</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
BMB 448 (Students must complete either BMB 445W or BMB 448. BMB 445W is offered Spring Semester only and BMB 448 is offered Fall Semester only.)	2	BMB 445W (Students must complete either BMB 445W or BMB 448. BMB 445W is offered Spring Semester only and BMB 448 is offered Fall Semester only.)	2
400 Level BIOL or BMB or CHEM or MICRB Selection	3	BMB 400	3
400 Level BIOL or BMB or CHEM or MICRB Selection	3	BMB 474	3
Department List Selection	3	400 Level BIOL or BMB or CHEM or MICRB Selection	3
General Education Course (GA or GH or GS)	3	Department List Selection	3
General Education Course (GA or GH or GS)	3	General Education Course (GA or GH or GS)	3
	<b>17</b>		<b>17</b>

#### Total Credits 127

\* 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> For General Education Course notations, please be sure to include six (6) credits of Inter-Domain (N courses), three (3) credits of United States (US) Cultures, and three (3) credits of International (IL) Cultures. Consult adviser for details.

<sup>2</sup> The following courses are offered Fall Semester only: BIOL 322, BMB 251, BMB 401, BMB 442, CHEM 210, CHEM 450.

<sup>3</sup> The following courses are offered Spring Semester only: BMB 252, BMB 400, BMB 402, BMB 443W, BMB 474, CHEM 452, PHYS 213, PHYS 214.

<sup>4</sup> Students must earn a quality grade of C or better in nine (9) credits of BMB and/or MICRB courses. Consult adviser for details.

<sup>5</sup> For STAT 250, the following courses may be substituted: CMPSC 101, CMPSC 201, MATH 220, MATH 231, MATH 250, STAT 200, or STAT 401. STAT 401 is offered Spring Semester only.

## Molecular and Cell Biology Option: Biochemistry and Molecular Biology, B.S. at Berks 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
ENGL 15 or 30H (GWS) <sup>‡</sup>	3 CAS 100A or 100B (GWS) <sup>‡</sup>	3
MATH 140 or 140B (GQ) <sup>‡#</sup>	4 MATH 141 or 141B (GQ) <sup>‡</sup>	4
CHEM 110 (GN) <sup>**†</sup>	3 CHEM 112 (GN) <sup>**†</sup>	3
CHEM 111 (GN) <sup>**†</sup>	1 CHEM 113 (GN) <sup>†</sup>	1
General Education Course (GA or GH or GS)	3 General Education Course (GA or GH or GS)	3
First-Year Seminar	1 General Education Course (GA or GH or GS)	3
	<b>15</b>	<b>17</b>

### Second Year

Fall	Credits Spring	Credits
BMB 251 <sup>*</sup>	3 ENGL 202C (GWS) <sup>‡</sup>	3
CHEM 210	3 BMB 252 <sup>*</sup>	3
PHYS 250 (GN) <sup>†</sup>	4 CHEM 212	3
MICRB 201 <sup>*</sup>	3 CHEM 213	2
MICRB 202	2 PHYS 251	4
General Education Course (GHW)	1.5 General Education Course (GHW)	1.5
	<b>16.5</b>	<b>16.5</b>

### Third Year

Fall	Credits Spring	Credits
BMB 401	3 BMB 402	3
BMB 430	3 BMB 443W	3
BMB 442	3 MICRB 410	3
BIOL 322	3 STAT 250	3
General Education Course (GA or GH or GS)	3 General Education Course (GA or GH or GS)	3
	<b>15</b>	<b>15</b>

### Fourth Year

Fall	Credits Spring	Credits
BMB 448 (Students must complete either BMB 445W or BMB 448. BMB 445W is offered Spring Semester only and BMB 448 is offered Fall Semester only.)	2 BMB 445W (Students must complete either BMB 445W or BMB 448. BMB 445W is offered Spring Semester only and BMB 448 is offered Fall Semester only.)	2
BMB 428	3 BMB 400	3
BMB 460	3 400 Level BIOL or BMB or CHEM or MICRB Selection	3
400 Level BIOL or BMB or CHEM or MICRB Selection	3 Department List Selection	3
Department List Selection	3 General Education Course (GA or GH or GS)	3

Department List Selection	3
	<b>17</b>
	<b>14</b>

### 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

<sup>1</sup> For General Education Course notations, please be sure to include six (6) credits of Inter-Domain (N courses), three (3) credits of United States (US) Cultures, and three (3) credits of International (IL) Cultures. Consult adviser for details.

<sup>2</sup> The following courses are offered Fall Semester only: BIOL 322, BMB 251, BMB 401, BMB 430, BMB 442, BMB 460, CHEM 210, PHYS 250.

<sup>3</sup> The following courses are offered Spring Semester only: BMB 252, BMB 400, BMB 402, BMB 443W, MICRB 410, PHYS 251.

<sup>4</sup> Students must earn a quality grade of C or better in nine (9) credits of BMB and/or MICRB courses. Consult adviser for details.

<sup>5</sup> For PHYS 250 and PHYS 251, the following course sequence may be substituted: PHYS 211, PHYS 212, PHYS 213, PHYS 214. PHYS 213 and PHYS 214 are offered Spring Semester only.

<sup>6</sup> For STAT 250, the following courses may be substituted: CMPSC 101, CMPSC 201, MATH 220, MATH 231, MATH 250, STAT 200, or STAT 401. STAT 401 is offered Spring Semester only.

### University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy University 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.

GWS, GQ, GHW, GN, GA, GH, and GS are abbreviations used to identify General Education program courses. General Education includes Foundations (GWS and GQ) and Knowledge Domains (GHW, GN, GA, GH, GS, and Integrative Studies). Foundations courses (GWS and GQ) require a grade of 'C' or better.

Integrative Studies courses are required for the General Education program. N is the suffix at the end of a course number used to designate an Inter-Domain course and Z is the suffix at the end of a course number used to designate a Linked course.