

# BIOLOGICAL ENGINEERING, 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 2024-25 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.

### Agricultural Engineering Option: Biological Engineering, 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.

**If you are starting at a campus other than the one this plan is ending at, please refer to:** <http://advising.engr.psu.edu/degree-requirements/academic-plans-by-major.aspx>

#### First Year

Fall	Credits	Spring	Credits
CHEM 110 (GN) <sup>**†</sup>	3	CHEM 111 (GN)	1
ECON 102, 104, or AGBM 101 (GS) <sup>†</sup>	3	ENGL 15, 30H, or ESL 15 (GWS) <sup>**††</sup>	3
EDSGN 100 <sup>*#</sup>	3	MATH 141 or 141E (GQ) <sup>*†#†</sup>	4
MATH 140 or 140E (GQ) <sup>*†#†</sup>	4	PHYS 211 (GN) <sup>*#†</sup>	4
BE 1 (or First year Seminar) <sup>†</sup>	1	General Education Course <sup>†</sup>	3
General Education Course <sup>†</sup>	3		
	<b>17</b>		<b>15</b>

#### Second Year

Fall	Credits	Spring	Credits
CAS 100A, 100B, or 100C (GWS) <sup>**††</sup>	3	EMCH 212 <sup>*</sup>	3
EMCH 211 <sup>*</sup>	3	EMCH 213 <sup>*</sup>	3
MATH 251 <sup>*1</sup>	4	MATH 231	2
PHYS 212 (GN) <sup>*†</sup>	4	ME 300 <sup>*</sup>	3
General Education Course <sup>†</sup>	3	Math/Basic Science Selection	3
		General Education Course <sup>†</sup>	3
	<b>17</b>		<b>17</b>

#### Third Year

Fall	Credits	Spring	Credits
BE 301 <sup>*</sup>	3	BE 302 <sup>*</sup>	4
BE 308 <sup>*</sup>	3	BE 305 <sup>*</sup>	3
BE 391 (GWS) <sup>††</sup>	2	BE 392 (GWS) <sup>††</sup>	2
CE 360 or ME 320 <sup>*</sup>	3	BE 303, 306, or 307 <sup>*</sup>	3

STAT 240, 250, 318, 401, 418, or IE 424	3	BE 303, 306, or 307 <sup>*</sup>	3
General Education Course <sup>†</sup>	3		
	<b>17</b>		<b>15</b>

#### Fourth Year

Fall	Credits	Spring	Credits
BE 404 <sup>*</sup>	3	BE 466W	2
BE 460W	2	BE 4XX-Biological Engineering Selection	3
BE 4XX-Biological Engineering Selection	3	Engineering Science/Design Selection	3
BIO/AG Selection	3	Technical Selection	3
Engineering Science/Design Selection	3	Technical Selection	3
General Education Course (GHW) <sup>†</sup>	1.5	General Education Course (GHW) <sup>†</sup>	1.5
	<b>15.5</b>		<b>15.5</b>

#### Total Credits 129

\* 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> MATH 250 followed by MATH 252 is an alternate option in place of MATH 251

#### 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.

#### College Notes:

- Students who complete the ROTC Program may substitute 3 ROTC credits for the GHW requirement and 3 ROTC credits for a Technical Selection.
- BE 391 & BE 392 fulfill General Writing and Speaking requirements (taken instead of ENGL 202C).

- **See selection lists in *BE Advising Manual* at <https://abe.psu.edu/files/be-advising-manual.pdf> for the following:**
  - BE 4XX - Biological Engineering Selection
  - BIO/AG Selection
  - Engineering Science/Design Selection
  - Math/Basic Science Selection
  - Technical Selection
- ***These courses offered at University Park in fall semester only:***
  - BE 301
  - BE 308
  - BE 391
  - BE 404
  - BE 460W
- ***These courses offered at University Park in spring semester only:***
  - BE 302
  - BE 303
  - BE 305
  - BE 306
  - BE 307
  - BE 392
  - BE 466W

## Food & Biological Process Engineering Option: Biological Engineering, B.S. Ending 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.

**If you are starting at a campus other than the one this plan is ending at, please refer to:** <http://advising.engr.psu.edu/degree-requirements/academic-plans-by-major.aspx>

### First Year

Fall	Credits Spring	Credits
EDSGN 100 <sup>*#</sup>	3 CHEM 111 (GN)	1
CHEM 110 (GN) <sup>*#†</sup>	3 ENGL 15, 30H, or ESL 15 (GWS) <sup>*††</sup>	3
ECON 102, 104, or AGBM 101 (GS) <sup>†</sup>	3 MATH 141 or 141E (GQ) <sup>*†#†</sup>	4
MATH 140 or 140E (GQ) <sup>*†#†</sup>	4 PHYS 211 (GN) <sup>*#†</sup>	4
BE 1 (or First Year Seminar) <sup>†</sup>	1 General Education Course <sup>†</sup>	3
General Education Course <sup>†</sup>	3	
	<b>17</b>	<b>15</b>

### Second Year

Fall	Credits Spring	Credits
CAS 100A, 100B, or 100C (GWS) <sup>*††</sup>	3 CHEM 202 or 210	3
EMCH 211 <sup>*</sup>	3 EMCH 212 <sup>*</sup>	3
MATH 251 <sup>*1</sup>	4 EMCH 213 <sup>*</sup>	3
PHYS 212 (GN) <sup>*†</sup>	4 MATH 231	2
General Education Course <sup>†</sup>	3 ME 300 <sup>*</sup>	3
	General Education Course <sup>†</sup>	3
	<b>17</b>	<b>17</b>

### Third Year

Fall	Credits Spring	Credits
BE 301 <sup>*</sup>	3 BE 302 <sup>*</sup>	4
BE 308 <sup>*</sup>	3 BE 305 <sup>*</sup>	3
BE 391 (GWS) <sup>††</sup>	2 BE 392 (GWS) <sup>††</sup>	2
ME 320 or CE 360 <sup>*</sup>	3 BMB 211, 251, BIOL 230W, or BME 201	3-4
STAT 240, 250, 318, 401, 418, or IE 424	3 Engineering Science/Design Selection	3
General Education Course <sup>†</sup>	3	
	<b>17</b>	<b>15-16</b>

### Fourth Year

Fall	Credits Spring	Credits
BE 404 <sup>*</sup>	3 BE 466W	2
BE 460W	2 BE 468	3
BE 465	3 Emphasis Technical Selection	3
Emphasis Technical Selection	3 Engineering Science/Design Selection	3

Technical Selection	3 Technical Selection	3
General Education Course (GHW)	1.5 General Education Course (GHW) <sup>†</sup>	1.5
	<b>15.5</b>	<b>15.5</b>

### Total Credits 129-130

- \* 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

<sup>1</sup> MATH 250 followed by MATH 252 is an alternate option in place of MATH 251

### 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.

### College Notes:

- CHEM 210, BMB 251, BIOL 230W, and BME 201 require additional prerequisites that are not prescribed by major but might be used as selections.
- Students who complete the ROTC Program may substitute 3 ROTC credits for the GHW requirement and 3 ROTC credits for a Technical Selection.
- BE 391 & BE 392 will satisfy General Education Writing and Speaking requirements (taken instead of ENGL 202C).
- **See selection lists in BE Advising Manual at** <https://abe.psu.edu/files/be-advising-manual.pdf> **for the following:**
  - Emphasis Technical Selection
  - Engineering Science/Design Selection
  - Technical Selection
- **These courses offered at University Park in fall semester only:**
  - BE 301
  - BE 308
  - BE 391
  - BE 404

- BE 460W
- BE 465
- ***These courses offered at University Park in spring semester only:***
  - BE 302
  - BE 305
  - BE 392
  - BE 466W
  - BE 468

## Natural Resource Engineering Option: Biological Engineering, B.S. Ending 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.

**If you are starting at a campus other than the one this plan is ending at, please refer to:** <http://advising.engr.psu.edu/degree-requirements/academic-plans-by-major.aspx>

### First Year

Fall	Credits Spring	Credits
CHEM 110 (GN) <sup>**†</sup>	3 CHEM 111 (GN)	1
ECON 102, 104, or AGBM 101 (GS) <sup>†</sup>	3 ENGL 15, 30H, or ESL 15 (GWS) <sup>*††</sup>	3
EDSGN 100 <sup>*#</sup>	3 MATH 141 or 141E (GQ) <sup>*†#†</sup>	4
MATH 140 or 140E (GQ) <sup>*†#†</sup>	4 PHYS 211 (GN) <sup>*#†</sup>	4
BE 1 (or First Year Seminar) <sup>†</sup>	1 General Education Course <sup>†</sup>	3
General Education Course <sup>†</sup>	3	
	<b>17</b>	<b>15</b>

### Second Year

Fall	Credits Spring	Credits
CAS 100A, 100B, or 100C (GWS) <sup>*††</sup>	3 EMCH 212 <sup>*</sup>	3
EMCH 211 <sup>*</sup>	3 EMCH 213 <sup>*</sup>	3
MATH 251 <sup>*1</sup>	4 MATH 231	2
PHYS 212 (GN) <sup>*†</sup>	4 ME 300 <sup>*</sup>	3
General Education Course <sup>†</sup>	3 SOILS 101	3
	General Education Course <sup>†</sup>	3
	<b>17</b>	<b>17</b>

### Third Year

Fall	Credits Spring	Credits
ASM 309 <sup>*</sup>	3 BE 302 <sup>*</sup>	4
BE 301 <sup>*</sup>	3 BE 305 <sup>*</sup>	3
BE 308 <sup>*</sup>	3 BE 307 <sup>*</sup>	3
BE 391 (GWS) <sup>††</sup>	2 BE 392 (GWS) <sup>††</sup>	2
CE 360 <sup>*</sup>	3 Engineering Science/Design Selection	3
STAT 240, 250, 318, 401, 418, or IE 424	3	
	<b>17</b>	<b>15</b>

### Fourth Year

Fall	Credits Spring	Credits
BE 404 <sup>*</sup>	3 BE 466W	2
BE 460W	2 BE 487	3
BE 467	3 Technical Selection	3
BE 477	3 Engineering Science/Design Selection	3
BIO/ENV Selection	3 General Education Course <sup>†</sup>	3

General Education Course (GHW) <sup>†</sup>	1.5 General Education Course (GHW) <sup>†</sup>	1.5
	<b>15.5</b>	<b>15.5</b>

### Total Credits 129

- \* Course requires a grade of C or better for the major
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### College Notes:

- Students who complete the ROTC Program may substitute 3 ROTC credits for the GHW requirement and 3 ROTC credits for a technical selection.
- BE 391 & BE 392 will satisfy General Education Writing and Speaking requirements (instead of taking ENGL 202C).
- **See selection lists in BE Advising Manual at** <https://abe.psu.edu/files/be-advising-manual.pdf> **for the following:**
  - BIO/ENV Selection
  - Engineering Science/Design Selection
  - Technical Selection
- **These courses offered at University Park in fall semester only:**
  - ASM 309
  - BE 301
  - BE 308
  - BE 391
  - BE 404
  - BE 460W
  - BE 467
  - BE 477
- **These courses offered at University Park in spring semester only:**

- BE 302
- BE 305
- BE 307
- BE 392
- BE 466W
- BE 487