

PHYSICS, B.S. (SCIENCE)

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 Option: Physics, 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
PHYS 211 ^{*#}	4 PHYS 212 ^{*#}	4
MATH 140 ^{*†#†}	4 MATH 141 ^{*†#†}	4
CHEM 110 ^{*†#†}	3 CHEM 112 [†]	3
CHEM 111 [†]	1 CHEM 113 [†]	1
PSU 16	1 ENGL 15, 30H, or ESL 15 [‡]	3
General Education Course	3	
	16	15

Second Year

Fall	Credits Spring	Credits
PHYS 213 & PHYS 214 [*]	4 PHYS 237 [*]	3
MATH 230 [*]	4 MATH 251 [*]	4
MATH 220	2 General Education Course	3
General Education Course	3 CMPSC 101, 121, 131, 200, 201, or 202	3
General Education Course (GHW)	1.5 CAS 100, CAS 100A, CAS 100B, or CAS 100C [‡]	3
	14.5	16

Third Year

Fall	Credits Spring	Credits
PHYS 400 [*]	4 PHYS 410 [*]	4
PHYS 419 [*]	3 PHYS 420 [*]	3
MATH 400 level selection (consult with an academic adviser for options) ¹	3 MATH 400 level selection (consult with an academic adviser for options) ¹	3
General Education Course	3 General Education Course	3
PHYS 444 [*]	2 General Education Course	3
	15	16

Fourth Year

Fall	Credits Spring	Credits
PHYS 400 level selection (consult with an academic adviser for options)	3 PHYS 400 level selection (consult with an academic adviser for options)	3
PHYS 402 or 457W ²	3-4 PHYS 457W or 458 ²	3-4
General Education Course	3 Supporting Course (consult with an academic adviser for options)	3
ENGL 202C [‡]	3 Supporting Course (consult with an academic adviser for options)	3
Elective ²	3 General Education Course (GHW)	1.5
	15-16	13.5-14.5

Total Credits 121-123

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.

¹ MATH 4xx can be taken from the following list: E SC 404 OR E SC 406 OR any Math 4XX course except PHYS/MATH 419 and PHYS/MATH 479.

² PHYS 457W requires a grade of C or better.

Medical Option: Physics, B.S. at University Park Campus

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First Year

Fall	Credits Spring	Credits
PHYS 211 ^{*#}	4 PHYS 212 ^{*#}	4
MATH 140 ^{*†#†}	4 MATH 141 ^{*†#†}	4
CHEM 110 ^{*†#†}	3 CHEM 112 [†]	3
CHEM 111 [†]	1 CHEM 113 [†]	1
PSU 16	1 ENGL 15, 30H, or ESL 15 [†]	3
General Education Course	3	
	16	15

Second Year

Fall	Credits Spring	Credits
PHYS 213 & PHYS 214 [*]	4 PHYS 237 [*]	3
MATH 230 [*]	4 MATH 251 [*]	4
BIOL 110 or 141 [†]	3-4 BIOL 240W or BME 201 [†]	3-4
General Education Course	3 General Education Course	3
	CAS 100, CAS 100A, CAS 100B, or CAS 100C [†]	3
	14-15	16-17

Third Year

Fall	Credits Spring	Credits
PHYS 400 [*]	4 PHYS 419 [*]	3
MATH 400 level selection (consult with an academic adviser for options) ¹	3 CMPSC 101, 121, 131, 200, 201, or 202	3
MATH 220	2 CHEM 212 (or BME Elective)	3
CHEM 210 (or BME Elective)	3 General Education Requirement	3
PHYS 444	2 General Education Course	3
	14	15

Fourth Year

Fall	Credits Spring	Credits
PHYS 410 [*]	4 PHYS 420 [*]	3
CHEM 213 (or BME Elective)	2 PHYS 457W [*]	3
ENGL 202C [†]	3 Supporting Course (consult with an academic adviser for options)	3
General Education Course	3 Supporting Course (consult with an academic adviser for options)	3
General Education Course (GHW)	1.5 Supporting Course (consult with an academic adviser for options)	3

General Education Course (GHW)	1.5
13.5	16.5

Total Credits 120-122

* 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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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.

¹ MATH 4xx can be taken from the following list: E SC 404 OR E SC 406 OR any Math 4XX course except PHYS/MATH 419 and PHYS/MATH 479.

Electronics Option: Physics, B.S. at University Park Campus

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First Year

Fall	Credits	Spring	Credits
PHYS 211 ^{*#}	4	PHYS 212 ^{*#}	4
MATH 140 ^{*†#†}	4	MATH 141 ^{*†#†}	4
CHEM 110 ^{*†#†}	3	CHEM 112 [†]	3
CHEM 111 [†]	1	CHEM 113 [†]	1
PSU 16	1	ENGL 15, 30H, or ESL 15 [†]	3
General Education Course	3		
	16		15

Second Year

Fall	Credits	Spring	Credits
PHYS 213 & PHYS 214 [*]	4	PHYS 237 [*]	3
MATH 230 [*]	4	MATH 251 [*]	4
MATH 220	2	CMPEN 270 (or Electrical Engineering 300 level selection)	4
EE 210	4	CMPSC 101, 121, 131, 200, 201, or 202	3
		General Education Course	3
	14		17

Third Year

Fall	Credits	Spring	Credits
PHYS 400 [*]	4	PHYS 419 [*]	3
CMPEN 270 (or Electrical Engineering 300 level selection)	4	Electrical Engineering 300 or 400 level selection (consult with an academic adviser for options)	3
MATH 400 level selection (consult with an academic adviser for options) ¹	3	General Education Course	3
CAS 100, CAS 100A, CAS 100B, or CAS 100C [‡]	3	General Education Course	3
PHYS 444 [*]	2	General Education Course	3
	16		15

Fourth Year

Fall	Credits	Spring	Credits
PHYS 410 [*]	4	PHYS 420 [*]	3
Electrical Engineering 300 or 400 level selection (consult with an academic adviser for options)	3	PHYS 457W [*]	3
ENGL 202C [‡]	3	General Education Course	3
General Education Course	3	Supporting Course (consult with an academic adviser for options)	3

General Education Selection (GHW)	1.5	Supporting Course (consult with an academic adviser for options)	3
		GHA Elective	1.5
	14.5		16.5

Total Credits 124

* 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

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Computational Option: Physics, B.S. at University Park Campus

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First Year

Fall	Credits	Spring	Credits
PHYS 211 ^{*#}	4	PHYS 212 ^{*#}	4
MATH 140 ^{*†#†}	4	MATH 141 ^{*†#†}	4
CHEM 110 ^{*†#†}	3	CHEM 112 [†]	3
CHEM 111 [†]	1	CHEM 113 [†]	1
PSU 16	1	ENGL 15, 30H, or ESL 15 [†]	3
General Education Course	3		
	16		15

Second Year

Fall	Credits	Spring	Credits
PHYS 213 & PHYS 214 [*]	4	PHYS 237 [*]	3
MATH 230 [*]	4	MATH 251 [*]	4
CMPSC 121	3	CMPSC 122	3
General Education Course	3	MATH 220	2
General Education Course (GHW)	1.5	General Education Course	3
	15.5		15

Third Year

Fall	Credits	Spring	Credits
PHYS 400 [*]	4	PHYS 410 [*]	4
PHYS 419 (or MATH 4xx) ^{*1}	3	PHYS 419 (or MATH 400 level selection) ^{*1}	3
MATH 455	3	MATH 456	3
CAS 100, CAS 100A, CAS 100B, or CAS 100C [‡]	3	General Education Course (GHW)	1.5
PHYS 444 [*]	2	General Education Course	3
		Supporting Course (consult with an academic adviser for options)	3
	15		17.5

Fourth Year

Fall	Credits	Spring	Credits
PHYS 420 [*]	3	PHYS 457W	3
MATH 400 level or STAT 400 level or CMPSC 300/400 level selection (consult with an academic adviser for options)	3	MATH 400 level or STAT 400 level or CMPSC 300/400 level selection (consult with an academic adviser for options)	3
General Education Course	3	General Education Course	3
General Education Course	3	Supporting Course (consult with an academic adviser for options)	3

ENGL 202C [†]	3 Supporting Course (consult with an academic adviser for options)	3
	15	15

Total Credits 124

* 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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Materials-Nanotechnology Option - Nanotechnology Track: Physics, B.S. at University Park Campus

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First Year

Fall	Credits Spring	Credits
PHYS 211 ^{*#}	4 PHYS 212 ^{*#}	4
MATH 140 ^{*†#†}	4 MATH 141 ^{*†#†}	4
CHEM 110 ^{*†#†}	3 CHEM 112 [†]	3
CHEM 111 [†]	1 CHEM 113 [†]	1
PSU 16	1 ENGL 15, 30H, or ESL 15 [†]	3
General Education Course	3	
	16	15

Second Year

Fall	Credits Spring	Credits
PHYS 213 & PHYS 214 [*]	4 PHYS 237 [*]	3
MATH 230 [*]	4 MATH 251 [*]	4
MATH 220	2 CAS 100, CAS 100A, CAS 100B, or CAS 100C [†]	3
General Education Course	3 CMPSC 101, 121, 131, 200, 201, or 202	3
General Education Course (GHW)	1.5 General Education Course	3
	14.5	16

Third Year

Fall	Credits Spring	Credits
PHYS 400 [*]	4 PHYS 410 [*]	4
PHYS 419 (or MATH 400 level selection (consult with an academic adviser for options)) ^{*1}	3 PHYS 419 (or MATH 400 level selection (consult with an academic adviser for options)) [*]	3
PHYS 444 [*]	2 ESC 313	3
ESC 312	3 General Education Course	3
General Education Course	3 General Education Course	3
	15	16

Fourth Year

Fall	Credits Spring	Credits
PHYS 420	3 PHYS 457W [*]	3
PHYS 412	3 ESC 400 level selection (consult with an academic adviser for options)	3
ESC 400 Level Selection (consult with an academic adviser for options)	3 Supporting Course (consult with an academic adviser for options)	3
ENGL 202C [†]	3 Supporting Course (consult with an academic adviser for options)	3

General Education Course	3 General Education Course (GHW)	1.5
	15	13.5

Total Credits 121

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Materials-Nanotechnology Option - Materials Track: Physics, B.S. at University Park Campus

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First Year

Fall	Credits	Spring	Credits
PHYS 211 ^{*#}	4	PHYS 212 ^{*#}	4
MATH 140 ^{*†#†}	4	MATH 141 ^{*†#†}	4
CHEM 110 ^{*†#†}	3	CHEM 112 [†]	3
CHEM 111 [†]	1	CHEM 113 [†]	1
PSU 16	1	ENGL 15, 30H, or ESL 15 [†]	3
General Education Course	3		
	16		15

Second Year

Fall	Credits	Spring	Credits
PHYS 213 & PHYS 214 [*]	4	PHYS 237 [*]	3
MATH 230 [*]	4	MATH 251 [*]	4
MATH 220	2	CAS 100	3
MATSE 201	3	CMPSC 101, 121, 131, 200, 201, or 202	3
General Education (GHW)	1.5	General Education Course	3
	14.5		16

Third Year

Fall	Credits	Spring	Credits
PHYS 400 [*]	4	PHYS 410 [*]	4
PHYS 419 (or MATH 400 level selection (consult with an academic adviser for options)) ^{*1}	3	PHYS 419 (or MATH 400 level selection (consult with an academic adviser for options)) ^{*1}	3
PHYS 444 [*]	2	MATSE 436 or 402	3
MATSE 430	3	General Education Course	3
MATSE 460	1	General Education Course	3
General Education Course (GHW)	1.5		
	14.5		16

Fourth Year

Fall	Credits	Spring	Credits
PHYS 412 [*]	3	PHYS 457W [*]	3
PHYS 420 (or MATSE 400 level selection (consult with an academic adviser for options)) [*]	3	PHYS 420 (or MATSE 400 level selection (consult with an academic adviser for options)) [*]	3
ENGL 202C [‡]	3	General Education Course	3
General Education Course	3	Supporting Course (consult with an academic adviser for options)	3

General Education Course	3	Supporting Course (consult with an academic adviser for options)	3
	15		15

Total Credits 122

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