

MATHEMATICS, 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*).

Actuarial Mathematics Option: Mathematics, 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
MATH 140 ^{**#†}	4	MATH 141 ^{**#†}	4
STAT 200	4	MATH 220 [*]	2
ENGL 15, 30H, or ESL 15 [‡]	3	General Education Course	3
ECON 102 (or General Education Course)	3	ECON 104 (or General Education Course)	3
PSU 16	1	Supporting Course (ACCTG 211 is recommended)	4
	15		16

Second Year

Fall	Credits	Spring	Credits
MATH 230 [*]	4	MATH 414 or STAT 414 [*]	3
MATH 311W [*]	3	MATH 312 [*]	3
General Education Course	3	CMPSC 101, 121, or 201	3
General Education Course	3	General Education Course	3
General Education Course	3	Supporting Course (FIN 301 is recommended)	3
	16		15

Third Year

Fall	Credits	Spring	Credits
MATH 250 or 251 [*]	3	MATH 415 or STAT 415 [*]	3
MATH 484 [*]	3	MATH 451, CMPSC 451, or MATH 486 [*]	3
RM 410 [*]	3	RM 411 [*]	3
RM 302 [*]	3	ENGL 202C, 202A, 202B, or 202D [‡]	3

CAS 100A, 100B, or 100C [‡]	3	Supporting Course (Chosen in consultation with an academic adviser)	3
General Education Course (GHW)	1.5	General Education Course (GHW)	1.5
	16.5		16.5

Fourth Year

Fall	Credits	Spring	Credits
STAT 462 [*]	3	MATH 416 or STAT 416 [*]	3
RM 412 [*]	3	STAT 463 (or 400 Level MATH course except MATH 410, MATH 405, MATH 406, MATH 441, MATH 470 or MATH 471) [*]	3
IE 425 [*]	3	General Education Course	3
General Education Course	3	Supporting Course (Chosen in consultation with an academic adviser)	2-3
		Supporting Course (Chosen in consultation with an academic adviser)	1
	12		12-13

Total Credits 119-120

- * 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:

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.

Actuarial Mathematics Option (ALEKS Placement in MATH 21): Mathematics, 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
MATH 21	3 MATH 41	4 MATH 140 ^{*†#†}	4
STAT 200	4 General Education Course	3	
ENGL 15, 30H, or ESL 15 [‡]	3 General Education Course	3	
ECON 102 (or General Education Course)	3 ECON 104 (or General Education Course)	3	
PSU 16	1 Supporting Course (ACCTG 211 is recommended)	4	
	14	17	4

Second Year

Fall	Credits Spring	Credits Summer	Credits
MATH 141 ^{*†#†}	4 MATH 230 [*]	4 MATH 414 or STAT 414 [*]	3
MATH 220 [*]	2 MATH 311W [*]	3	
General Education Course	3 CMPSC 101, 131, or 201	3	
General Education Course	3 General Education Course	3	
General Education Course	3 General Education Course	3	
	15	16	3

Third Year

Fall	Credits Spring	Credits
MATH 250 or 251 [*]	3-4 MATH 312 [*]	3
MATH 484 [*]	3 MATH 415 or STAT 415 [*]	3
RM 410 [*]	3 RM 411 [*]	3
RM 302 [*]	3 FIN 301	3
CAS 100A, 100B, or 100C [‡]	3	
	15-16	12

Fourth Year

Fall	Credits Spring	Credits
STAT 462 [*]	3 MATH 416 or STAT 416 [*]	3
RM 412 [*]	3 MATH 451 or 486 [*]	3
IE 425 [*]	3 STAT 463 (or 400-level MATH) [*]	3
ENGL 202C, 202A, 202B, or 202D [‡]	3 Supporting Course (Chosen in consultation with an academic adviser)	3
General Education Course (GHW)	1.5 Supporting Course (Chosen in consultation with an academic adviser)	3-4
	General Education Course (GHW)	1.5
	13.5	16.5-17.5

Total Credits 126-128

* 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

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.

Actuarial Mathematics Option: Mathematics, 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
MATH 140 ^{*†##}	4 MATH 141 ^{*†##}	4
STAT 200	4 MATH 220 (or General Education Course) [*]	2-3
ENGL 15 [‡]	3 General Education Course	3
ECON 102 (or General Education Course)	3 ECON 104 (or General Education Course)	3
PSU 16	1 ACCTG 211	4
	15	16-17

Second Year

Fall	Credits Spring	Credits
MATH 230 [*]	4 MATH 414 [*]	3
MATH 220, 250, or 251 ^{*1}	2-4 MATH 311W [*]	3
General Education Course	3 CMPSC 101, 131, or 201	3
General Education Course	3 General Education Course	3
CAS 100	3 FIN 301	3
	RM 214	1.5
	15-17	16.5

Third Year

Fall	Credits Spring	Credits
MATH 312 [*]	3 MATH 415 [*]	3
MATH 250 or 251 (or General Education Course) ^{*1}	3 MATH 451 or 486 [*]	3
RM 410 [*]	3 RM 411 [*]	3
RM 302 [*]	3 ENGL 202C, 202A, 202B, or 202D [‡]	3
MATH 484 [*]	3 Supporting Course (Chosen in consultation with an academic adviser)	3
	General Education Course (GHW)	1.5
	15	16.5

Fourth Year

Fall	Credits Spring	Credits
STAT 462 [*]	3 MATH 416 [*]	3
RM 412 [*]	3 STAT 463 (or 400 Level MATH) [*]	3
IE 425 [*]	3 General Education Course	3
General Education Course	3 Supporting Course (Chosen in consultation with an academic adviser)	3

General Education Course (GHW)	1.5	
	13.5	12

Total Credits 119.5-122.5

- * 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 Semester will vary based on campus MATH 220 and MATH 250/251 offerings.

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.

Applied and Industrial Option: Mathematics, 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
MATH 140 ^{*†#†}	4 MATH 141 ^{*†#†}	4
STAT 200	4 MATH 220 [*]	2
ENGL 15, 30H, or ESL 15 [‡]	3 General Education Course	3
General Education Course	3 General Education Course	3
PSU 16	1 General Education Course	3
	15	15

Second Year

Fall	Credits Spring	Credits
MATH 230 [*]	4 MATH 250 or 251 [*]	3-4
MATH 311W [*]	3 MATH 312 [*]	3
CMPSC 101, 121, or 201	3 MATH 414 or STAT 414 [*]	3
General Education Course	3 General Education Course	3
	General Education Course	3
	13	15-16

Third Year

Fall	Credits Spring	Credits
MATH 415 or STAT 415 [*]	3 MATH 412 [*]	3
MATH 436 [*]	3 MATH 403 [*]	3
CAS 100, CAS 100A, CAS 100B, or CAS 100C [‡]	3 MATH 411, 416, 417, 419, 421, 456, 461, MATH 467, MATH 468, MATH 479, MATH 484, MATH 485, or MATH 486 [*]	3
General Education Course	3 Supporting Course (Chosen in consultation with an academic adviser)	3
Supporting Course (Chosen in consultation with an academic adviser)	3 ENGL 202C, 202A, 202B, or 202D [‡]	3
General Education Course (GHW)	1.5 General Education Course (GHW)	1.5
	16.5	16.5

Fourth Year

Fall	Credits Spring	Credits
MATH 455 or CMPSC 455 [*]	3 MATH 450	3
MATH 411, 416, 417, 419, 421, 456, 461, MATH 467, MATH 468, MATH 479, MATH 484, MATH 485, or MATH 486 [*]	3 MATH 411, 416, 417, 419, 421, 456, 461, MATH 467, MATH 468, MATH 479, MATH 484, MATH 485, or MATH 486 [*]	3

MATH 411, 416, 417, 419, 421, 456, 461, MATH 467, MATH 468, MATH 479, MATH 484, MATH 485, or MATH 486 [*]	3 General Education Course	3
General Education Course	3 Supporting Course (Chosen in consultation with an academic adviser)	3
Supporting Course (Chosen in consultation with an academic adviser)	3 Supporting Course (Chosen in consultation with an academic adviser)	1-2
	15	13-14

Total Credits 119-121

- * 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:

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.

Applied and Industrial Option (ALEKS Placement in MATH 21): Mathematics, 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
MATH 21	3 MATH 41	4 MATH 140 ^{*†‡†}	4
STAT 200	4 General Education Course	3	
ENGL 15, 30H, or ESL 15 [‡]	3 General Education Course	3	
General Education Course	3 General Education Course	3	
PSU 16	1 General Education Course	3	
14		16	
			4

Second Year		
Fall	Credits Spring	Credits
MATH 141 ^{*†‡†}	4 MATH 250 or 251 [*]	3-4
MATH 220 [*]	2 MATH 311W [*]	3
CMPS 131	3 MATH 230 [*]	4
General Education Course	3 General Education Course	3
	General Education Course	3
12		16-17

Third Year		
Fall	Credits Spring	Credits
MATH 414 or STAT 414 [*]	3 MATH 412 [*]	3
MATH 436 [*]	3 MATH 415 or STAT 415 [*]	3
MATH 312 [*]	3 MATH 403 [*]	3
CAS 100, CAS 100A, CAS 100B, or CAS 100C [‡]	3 ENGL 202C, 202A, 202B, or 202D [‡]	3
General Education Course (GHW)	1.5 Supporting Course (Chosen in consultation with an academic adviser)	3-4
13.5		15-16

Fourth Year		
Fall	Credits Spring	Credits
MATH 455 or CMPS 455 [*]	3 MATH 450	3
MATH 400-Level Selection [*]	3 MATH 400-Level Selection [*]	3
MATH 400-Level Selection [*]	3 MATH 400-Level Selection [*]	3
General Education Course (GHW)	1.5 General Education Course	3
Supporting Course (Chosen in consultation with an academic adviser)	3 Supporting Course (Chosen in consultation with an academic adviser)	3
13.5		15

Total Credits 119-121

- * 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:

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.

Applied and Industrial Option: Mathematics, 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
MATH 140 ^{*†‡}	4	MATH 141 ^{*†‡}	4
STAT 200	4	MATH 220 (or General Education Course) ^{*1}	2-3
ENGL 15 [‡]	3	General Education Course	3
General Education Course	3	General Education Course	3
PSU 16	1	General Education Course	3
15		15-16	

Second Year

Fall	Credits	Spring	Credits
MATH 230 [*]	4	MATH 250 or 251 [*]	3-4
MATH 220 (or General Education Course) ^{*1}	2-3	CMPSC 121 or 131	3
General Education Course	3	General Education Course	3
CAS 100	3	General Education Course	3
		Supporting Course (Chosen in consultation with an academic adviser)	3
12-13		15-16	

Third Year

Fall	Credits	Spring	Credits	Summer	Credits
MATH 311W [*]	3	MATH 312 [*]	3	MATH 400-Level Selection [*]	3
MATH 414 [*]	3	MATH 412 [*]	3		
MATH 455 [*]	3	MATH 415 [*]	3		
General Education Course	3	ENGL 202C, 202A, 202B, or 202D [‡]	3		

Supporting Course (Chosen in consultation with an academic adviser)	3	Supporting Course (Chosen in consultation with an academic adviser)	3	
15		15		3
Fourth Year				
Fall	Credits	Spring	Credits	
MATH 403 [*]	3	MATH 450 [*]	3	
MATH 436 [*]	3	MATH 400-Level Selection [*]	3	
MATH 400-Level Selection [*]	3	MATH 400-Level Selection [*]	3	
General Education Course	3	General Education Course	3	
Supporting Course (Chosen in consultation with an academic adviser)	3	Supporting Course (Chosen in consultation with an academic adviser)	1-2	
15		13-14		
Total Credits 118-122				

* 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

¹ Semester will vary based on campus MATH 220 offerings.

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.

Computational Mathematics Option: Mathematics, 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
MATH 140 ^{*†##}	4 MATH 141 ^{*†##}	4
STAT 200	4 MATH 220 [*]	2
ENGL 15, 30H, or ESL 15 [†]	3 General Education Course	3
General Education Course	3 General Education Course	3
PSU 16	1 General Education Course	3
	15	15

Second Year		
Fall	Credits Spring	Credits
MATH 230 [*]	4 MATH 250 or 251 [*]	3-4
MATH 311W [*]	3 MATH 312 [*]	3
CMPSC 121	3 CMPSC 122	3
General Education Course	3 Supporting Course (Chosen in consultation with an academic adviser)	3
	General Education Course	3
	13	15-16

Third Year		
Fall	Credits Spring	Credits
MATH 414 or STAT 414 [*]	3 MATH 415 or STAT 415 [*]	3
MATH 467 [*]	3 MATH 310, 468, or 485 [*]	3
CAS 100, CAS 100A, CAS 100B, or CAS 100C [†]	3 MATH 484 [*]	3
General Education Course	3 ENGL 202C, 202A, 202B, or 202D [†]	3
Supporting Course (Chosen in consultation with an academic adviser)	3 General Education Course	3
General Education Course (GHW)	1.5 General Education Course (GHW)	1.5
	16.5	16.5

Fourth Year		
Fall	Credits Spring	Credits
MATH 455 or CMPSC 455 [*]	3 MATH 456 or CMPSC 456 [*]	3
MATH 310, 468, or 485 [*]	3 CMPSC 465 [*]	3
MATH 411, 412, or 417 [*]	3 General Education Course	3
Supporting Course (Chosen in consultation with an academic adviser)	3 Supporting Course (Chosen in consultation with an academic adviser)	3

Supporting Course (Chosen in consultation with an academic adviser)	3 Supporting Course (Chosen in consultation with an academic adviser)	1-2
	15	13-14

Total Credits 119-121

- * 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:

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.

Computational Mathematics Option (ALEKS Placement in MATH 21): Mathematics, 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
MATH 21	3 MATH 41	4 MATH 140 ^{*†‡††}	4
STAT 200	4 General Education Course	3	
ENGL 15, 30H, or ESL 15 [‡]	3 General Education Course	3	
General Education Course	3 General Education Course	3	
PSU 16	1 General Education Course	3	
	14	16	4

Second Year

Fall	Credits Spring	Credits
MATH 141 ^{*†‡††}	4 MATH 230 [*]	4
MATH 220 [*]	2 MATH 311W [*]	3
General Education Course	3 CMPSC 132	3
CMPSC 131	3 General Education Course	3
Supporting Course (Chosen in consultation with an academic adviser)	3	
	15	13

Third Year

Fall	Credits Spring	Credits
MATH 250 or 251 [*]	3-4 MATH 414 or STAT 414 [*]	3
MATH 467 [*]	3 MATH 484 [*]	3
MATH 312 [*]	3 MATH 411, 412, or 417 [*]	3
CAS 100, CAS 100A, CAS 100B, or CAS 100C [‡]	3 ENGL 202C, 202A, 202B, or 202D [‡]	3

Supporting Course (Chosen in consultation with an academic adviser)	3 Supporting Course (Chosen in consultation with an academic adviser)	2-3
---	---	-----

General Education Course (GHW)	1.5
--------------------------------	-----

15-16

15.5-16.5

Fourth Year

Fall	Credits Spring	Credits
MATH 455 or CMPSC 455 [*]	3 MATH 456 or CMPSC 456 [*]	3
MATH 415 or STAT 415 [*]	3 CMPSC 465 [*]	3
MATH 310, 468, or 485 [*]	3 MATH 310, 468, or 485 [*]	3
General Education Course	3 General Education Course	3
General Education Course (GHW)	1.5 Supporting Course (Chosen in consultation with an academic adviser)	3
	13.5	15

Total Credits 121-123

* 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:

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.

Computational Mathematics Option: Mathematics, 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
MATH 140 ^{*†#†}	4 MATH 141 ^{*†#†}	4
STAT 200	4 MATH 220 (or General Education Course) ^{*1}	2-3
ENGL 15 [‡]	3 General Education Course	3
General Education Course	3 General Education Course	3
PSU 16	1 General Education Course	3
	15	15-16

Second Year

Fall	Credits Spring	Credits
MATH 230 [*]	4 MATH 250 or 251 [*]	3-4
MATH 220 (or General Education Course) ^{*1}	2-3 CMPSC 122 or 132	3
CMPSC 121 or 131	3 Supporting Course (Chosen in consultation with an academic adviser)	3
Supporting Course (Chosen in consultation with an academic adviser)	3 General Education Course	3
General Education Course	3 General Education Course	3
	15-16	15-16

Third Year

Fall	Credits Spring	Credits
MATH 311W [*]	3 MATH 312 [*]	3
MATH 414 [*]	3 MATH 415 [*]	3
MATH 484 [*]	3 MATH 310, 468, or 485 [*]	3
CAS 100, CAS 100A, CAS 100B, or CAS 100C [‡]	3 ENGL 202C, 202A, 202B, or 202D	3
General Education Course	3 Supporting Course (Chosen in consultation with an academic adviser)	3
	15	15

Fourth Year

Fall	Credits Spring	Credits
MATH 455 [*]	3 MATH 456 [*]	3
MATH 310, 468, or 485 [*]	3 MATH 411, 412, or 417 [*]	3
MATH 467 [*]	3 CMPSC 465 [*]	3
Supporting Course (Chosen in consultation with an academic adviser)	3 General Education Course (GHW)	1.5
General Education Course (GHW)	1.5 Supporting Course (Chosen in consultation with an academic adviser)	3

Supporting Course (Chosen in consultation with an academic adviser)	1-2
13.5	14.5-15.5

Total Credits 118-122

- * 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

¹ Semester will vary based on campus MATH 220 offerings.

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 Mathematics Option: Mathematics, 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
MATH 140 ^{*†#†}	4 MATH 141 ^{*†#†}	4
ENGL 15, 30H, or ESL 15 [†]	3 MATH 220 [*]	2
STAT 200	4 General Education Course	3
General Education Course	3 General Education Course	3
PSU 16	1 General Education Course	3
	15	15

Second Year

Fall	Credits Spring	Credits
MATH 230 [*]	4 MATH 250 or 251 [*]	3-4
MATH 311W [*]	3 MATH 312 [*]	3
General Education Course	3 CMPSC 101, 121, or 201	3
General Education Course	3 Supporting Course (Chosen in consultation with an academic adviser)	3
	Supporting Course (consult with an academic adviser for options)	3
	13	15-16

Third Year

Fall	Credits Spring	Credits
MATH 414 or STAT 414 [*]	3 MATH 415 or STAT 415 [*]	3
MATH 411, 412, 417, 419, or 421 [*]	3 MATH 435 or 436 [*]	3
CAS 100, CAS 100A, CAS 100B, or CAS 100C [†]	3 Area of Application Course (Consult with an academic adviser for options)	3
Area of Application (Consult with an academic adviser for options)	3 ENGL 202C, 202A, 202B, or 202D [†]	3
Supporting Course (Chosen in consultation with an academic adviser)	3 General Education Course	3
General Education Course (GHW)	1.5 General Education Course (GHW)	1.5
	16.5	16.5

Fourth Year

Fall	Credits Spring	Credits
MATH 403 [*]	3 MATH 400 Level selection: any 400 Level except MATH 401, 405, 406, 470 and 471 [*]	3
MATH 400 Level selection: any 400 Level except MATH 401, 405, 406, 470 and 471 [*]	3 Area of Application Course (Consult with an academic adviser for options)	3

Area of Application Course (Consult with an academic adviser for options)	3 Supporting Course (Chosen in consultation with an academic adviser)	3
Supporting course (Chosen in consultation with an academic adviser)	3 Supporting Course (Chosen in consultation with an academic adviser)	1-2
General Education Course	3 General Education Course	3
	15	13-14

Total Credits 119-121

* 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:

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 Mathematics Option (ALEKS Placement in MATH 21): Mathematics, 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
MATH 21	3 MATH 41	4 MATH 140 ^{*†#†}	4
ENGL 15, 30H, or ESL 15 [‡]	3 General Education Course	3	
STAT 200	4 General Education Course	3	
General Education Course	3 General Education Course	3	
PSU 16	1 General Education Course	3	
	14	16	4

Second Year

Fall	Credits Spring	Credits
MATH 141 ^{*†#†}	4 MATH 230 [*]	4
MATH 220 [*]	2 MATH 311W [*]	3
General Education Course	3 CMPSC 101, 131, or 201	3
General Education Course	3 Supporting Course (Chosen in consultation with an academic adviser)	3
Supporting Course (Chosen in consultation with an academic adviser)	3 General Education Course	3
	15	16

Third Year

Fall	Credits Spring	Credits
MATH 250 or 251	3-4 MATH 312 [*]	3
MATH 414 or STAT 414 [*]	3 MATH 415 or STAT 415 [*]	3
CAS 100, CAS 100A, CAS 100B, or CAS 100C [‡]	3 MATH 435 or 436 [*]	3

Area of Application Course (Consult with an academic adviser for options)	3 ENGL 202C, 202A, 202B, or 202D [†]	3
	Area of Application Course (Consult with an academic adviser for options)	3
12-13		15
Fourth Year		
Fall	Credits Spring	Credits
MATH 403 [*]	3 MATH Elective	3
MATH Elective	3 MATH 411, 412, 417, 419, or 421 [*]	3
Area of Application Course (Consult with an academic adviser for options)	3 Area of Application Course (Consult with an academic adviser for options)	3
General Education Course	3 Supporting Course (Chosen in consultation with an academic adviser)	3-4
General Education Course (GHW)	1.5 General Education Course (GHW)	1.5
13.5		13.5-14.5

Total Credits 119-121

- * 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:

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 Mathematics Option: Mathematics, 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
MATH 140 ^{*†#†}	4 MATH 141 ^{*†#†}	4
ENGL 15 [‡]	3 MATH 220 (or General Education Course) ^{*1}	2-3
STAT 200	4 General Education Course	3
General Education Course	3 General Education Course	3
PSU 16	1 General Education Course	3
	15	15-16

Second Year		
Fall	Credits Spring	Credits
MATH 230 [*]	4 MATH 250 or 251 [*]	3-4
MATH 220 (or General Education Course) ^{*1}	2-3 CMPSC 101, 121, 131, or 201	3
General Education Course	3 General Education Course	3
CAS 100	3 General Education Course	3
Supporting Course (Chosen in consultation with an academic adviser)	3 Supporting Course (consult with an academic adviser for options)	3
	15-16	15-16

Third Year		
Fall	Credits Spring	Credits
MATH 311W [*]	3 MATH 312 [*]	3
MATH 414 [*]	3 MATH 415 [*]	3
Area of Application (Consult with an academic adviser for options)	3 MATH 435 or 436 [*]	3
General Education Course	3 Area of Application Course (Consult with an academic adviser for options)	3
Supporting Course (Chosen in consultation with an academic adviser)	3 ENGL 202C, 202A, 202B, or 202D [‡]	3
	15	15

Fourth Year		
Fall	Credits Spring	Credits
MATH 403 [*]	3 MATH 400 Level Selection [*]	3
MATH 400 Level Selection [*]	3 MATH 411, 412, 417, 419, or 421	3
Area of Application Course (Consult with an academic adviser for options)	3 Area of Application Course (Consult with an academic adviser for options)	3
Supporting Course (Chosen in consultation with an academic adviser)	3 Supporting Course (Chosen in consultation with an academic adviser)	3

General Education Course (GHW)	1.5 Supporting Course (Chosen in consultation with an academic adviser)	1-2
	General Education Course (GHW)	1.5
	13.5	14.5-15.5

Total Credits 118-122

- * 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

¹ Semester will vary based on campus MATH 220 offerings.

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.

Graduate Study Option: Mathematics, 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
MATH 140 ^{*†#†}	4 MATH 141 ^{*†#†}	4
STAT 200	4 MATH 220 [*]	2
ENGL 15, 30H, or ESL 15 [‡]	3 General Education Course	3
General Education Course	3 General Education Course	3
PSU 16	1 General Education Course	3
	15	15

Second Year

Fall	Credits Spring	Credits
MATH 230	4 MATH 250 or 251 [*]	3-4
MATH 311W [*]	3 CMPSC 101, 121, or 201	3
Natural Science	3 MATH 312 [*]	3
General Education	3 Supporting Course (Chosen in consultation with an academic adviser)	3
	Supporting Course (Chosen in consultation with an academic adviser)	3
	13	15-16

Third Year

Fall	Credits Spring	Credits
MATH 403 [*]	3 MATH 404 [*]	3
MATH 414 or STAT 414 [*]	3 MATH 415 or STAT 415 [*]	3
MATH 400 Level selection: any 400 Level except MATH 401, 405, 406, 441, 470 and 471 [*]	3 MATH 436 [*]	3
CAS 100, CAS 100A, CAS 100B, or CAS 100C [‡]	3 ENGL 202C, 202A, 202B, or 202D [‡]	3
General Education Course	3 Supporting Course (Chosen in consultation with an academic adviser)	3
General Education Course (GHW)	1.5 General Education Course (GHW)	1.5
	16.5	16.5

Fourth Year

Fall	Credits Spring	Credits
MATH 435 [*]	3 MATH 429 [*]	3
MATH 421 [*]	3 MATH 400 Level selection: any 400 Level except MATH 401, 405, 406, 470 and 471 [*]	3
MATH 400 Level selection: any 400 Level except MATH 401, 405, 406, 470 and 471 [*]	3 General Education Course	3

General Education Course	3 Supporting Course (Chosen in consultation with an academic adviser)	3
Supporting Course (Chosen in consultation with an academic adviser)	3 Supporting Course (Chosen in consultation with an academic adviser)	1-2
	15	13-14

Total Credits 119-121

* 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:

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.

Graduate Study Option (ALEKS Placement in MATH 21): Mathematics, 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
MATH 21	3 MATH 41	4 MATH 140 ^{*†#†}	4
STAT 200	4 General Education Course	3	
ENGL 15, 30H, or ESL 15 [‡]	3 General Education Course	3	
General Education Course	3 General Education Course	3	
PSU 16	1 General Education Course	3	
14		16	

Second Year		
Fall	Credits Spring	Credits
MATH 141 ^{*†#†}	4 MATH 230	4
MATH 220 [*]	2 MATH 250 or 251 [*]	3-4
General Education Course	3 MATH 311W [*]	3
General Education Course	3 CMPSC 101, 131, or 201	3
Supporting Course (Chosen in consultation with an academic adviser)	3 General Education Course	3
15		16-17

Third Year		
Fall	Credits Spring	Credits
MATH 400-Level Selection [*]	3 MATH 415 or STAT 415 [*]	3
MATH 414 or STAT 414 [*]	3 MATH 436 [*]	3
MATH 312 [*]	3 ENGL 202C, 202A, 202B, or 202D [‡]	3
CAS 100, CAS 100A, CAS 100B, or CAS 100C [‡]	3 MATH 400-Level Selection [*]	3

Supporting Course (Chosen in consultation with an academic adviser)	3	
15		12
Fourth Year		
Fall	Credits Spring	Credits
MATH 403 [*]	3 MATH 404 [*]	3
MATH 421 [*]	3 MATH 429 [*]	3
MATH 435 [*]	3 MATH 400-Level Selection [*]	3
General Education Course	3 Supporting Course (Chosen in consultation with an academic adviser)	3-4
General Education Course (GHW)	1.5 General Education Course (GHW)	1.5
13.5		13.5-14.5

Total Credits 119-121

- * 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:

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.

Graduate Study Option: Mathematics, 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
MATH 140 ^{*†#†}	4 MATH 141 ^{*†#†}	4
STAT 200	4 MATH 220 (or General Education Course) ^{*1}	2-3
ENGL 15 [‡]	3 General Education Course	3
General Education Course	3 General Education Course	3
PSU 16	1 General Education Course	3
	15	15-16

Second Year

Fall	Credits Spring	Credits
MATH 230	4 MATH 250 or 251 [*]	3-4
MATH 220 (or General Education Course) ^{*1}	2-3 CMPSC 101, 121, 131, or 201	3
General Education Course	3 MATH 311W [*]	3
CAS 100	3 General Education Course	3
Supporting Course (Chosen in consultation with an academic adviser)	3 Supporting Course (Chosen in consultation with an academic adviser)	3
	15-16	15-16

Third Year

Fall	Credits Spring	Credits
MATH 312 [*]	3 MATH 403 [*]	3
MATH 414 [*]	3 MATH 415 [*]	3
MATH 400 Level Selection [*]	3 MATH 400-Level Selection [*]	3
General Education Course	3 ENGL 202C, 202A, 202B, or 202D	3
Supporting Course (Chosen in consultation with an academic adviser)	3 General Education Course	3
	15	15

Fourth Year

Fall	Credits Spring	Credits
MATH 421 [*]	3 MATH 404 [*]	3
MATH 435 [*]	3 MATH 429 [*]	3
MATH 436 [*]	3 MATH 400 Level Selection [*]	3
General Education Course (GHW)	1.5 General Education Course (GHW)	1.5
Supporting Course (Chosen in consultation with an academic adviser)	3 Supporting Course (Chosen in consultation with an academic adviser)	3

Supporting Course (Chosen in consultation with an academic adviser)	1-2
---	-----

13.5

14.5-15.5

Total Credits 118-122

* 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

¹ Semester will vary based on campus MATH 220 offerings.

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.

Systems Analysis Option: Mathematics, 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
MATH 140 ^{*†##}	4	MATH 141 ^{*†##}	4
STAT 200	4	MATH 220 [*]	2
ENGL 15, 30H, or ESL 15 [†]	3	General Education Course	3
General Education Course	3	General Education Course	3
PSU 16	1	General Education Course	3
	15		15

Second Year

Fall	Credits	Spring	Credits
MATH 230 [*]	4	MATH 250 or 251 [*]	3-4
MATH 311W [*]	3	MATH 312 [*]	3
General Education Course	3	CMPSC 101, 121, or 201	3
General Education Course	3	Supporting Course (Chosen in consultation with an academic adviser)	3
		Supporting Course (Chosen in consultation with an academic adviser)	3
	13		15-16

Third Year

Fall	Credits	Spring	Credits
MATH 414 or STAT 414 [*]	3	MATH 415 or STAT 415 [*]	3
MATH 484 [*]	3	MATH 310, 451, 485, or 486 [*]	3
CAS 100, CAS 100A, CAS 100B, or CAS 100C [†]	3	Area of Application Course (Consult with an academic adviser for options)	3
Area of Application Course (Consult with an academic adviser for options)	3	ENGL 202C, 202A, 202B, or 202D [†]	3
Supporting Course (Chosen in consultation with an academic adviser)	3	General Education Course	3
General Education Course (GHW)	1.5	General Education Course (GHW)	1.5
	16.5		16.5

Fourth Year

Fall	Credits	Spring	Credits
MATH 436 [*]	3	MATH 400 Level selection: any 400 Level except MATH 401, 405, 406, 470 and 471 [*]	3
MATH 310, 451, 485, or 486 [*]	3	Area of Application Course (Consult with an academic adviser for options)	3

Area of Application Course (Consult with an academic adviser for options)	3	Supporting Course (Chosen in consultation with an academic adviser)	3
Supporting Course (Chosen in consultation with an academic adviser)	3	Supporting Course (Chosen in consultation with an academic adviser)	1-2
General Education Course	3	General Education Course	3
	15		13-14

Total Credits 119-121

- * 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:

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.

Systems Analysis Option (ALEKS Placement in MATH 21): Mathematics, 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
MATH 21	3 MATH 41	4 MATH 140 ^{*†#†}	4
STAT 200	4 General Education Course	3	
ENGL 15, 30H, or ESL 15 [‡]	3 General Education Course	3	
General Education Course	3 General Education Course	3	
PSU 16	1 General Education Course	3	
	14	16	4

Second Year

Fall	Credits Spring	Credits
MATH 141 ^{*†#†}	4 MATH 230 [*]	4
MATH 220 [*]	2 MATH 311W [*]	3
General Education Course	3 CMPSC 101, 131, or 201	3
General Education Course	3 General Education Course	3
Supporting Course (Chosen in consultation with an academic adviser)	3 Supporting Course (Chosen in consultation with an academic adviser)	3
	15	16

Third Year

Fall	Credits Spring	Credits
MATH 250 or 251 [*]	3-4 MATH 312 [*]	3
MATH 414 or STAT 414 [*]	3 MATH 415 or STAT 415 [*]	3
CAS 100, CAS 100A, CAS 100B, or CAS 100C [‡]	3 MATH 484 [*]	3

Area of Application Course (Consult with an academic adviser for options)	3 ENGL 202C, 202A, 202B, or 202D [†]	3
	Area of Application Course (Consult with an academic adviser for options)	3
12-13		15
Fourth Year		
Fall	Credits Spring	Credits
MATH 436 [*]	3 MATH 400-Level Selection [*]	3
MATH 310, 451, 485, or 486 [*]	3 MATH 310, 451, 485, or 486 [*]	3
Area of Application Course (Consult with an academic adviser for options)	3 Area of Application Course (Consult with an academic adviser for options)	3
General Education Course	3 Supporting Course (Chosen in consultation with an academic adviser)	3-4
General Education Course (GHW)	1.5 General Education Course (GHW)	1.5
13.5		13.5-14.5

Total Credits 119-121

- * 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:

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.

Systems Analysis Option: Mathematics, 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
MATH 140 ^{*†#†}	4	MATH 141 ^{*†#†}	4
STAT 200	4	MATH 220 (or General Education Course) ^{*1}	2-3
ENGL 15 [‡]	3	General Education Course	3
General Education Course	3	General Education Course	3
PSU 16	1	General Education Course	3
	15		15-16

Second Year

Fall	Credits	Spring	Credits
MATH 230 [*]	4	MATH 250 or 251 [*]	3-4
MATH 220 (or General Education Course) ^{*1}	2-3	CMPSC 101, 121, 131, or 201	3
CAS 100	3	Supporting Course (Chosen in consultation with an academic adviser)	3
Supporting Course (Chosen in consultation with an academic adviser)	3	General Education Course	3
General Education Course	3	General Education Course	3
	15-16		15-16

Third Year

Fall	Credits	Spring	Credits
MATH 311W [*]	3	MATH 312 [*]	3
MATH 414 [*]	3	MATH 415 [*]	3
Area of Application Course (Consult with an academic adviser for options)	3	MATH 484 [*]	3
Supporting Course (Chosen in consultation with an academic adviser)	3	ENGL 202C, 202A, 202B, or 202D [‡]	3
General Education Course	3	Area of Application Course (Consult with an academic adviser for options)	3
	15		15

Fourth Year

Fall	Credits	Spring	Credits
MATH 310, 451, 485, or 486 [*]	3	MATH 400 Level Selection [*]	3
MATH 436 [*]	3	MATH 310, 451, 485, or 486 [*]	3
Area of Application Course (Consult with an academic adviser for options)	3	Area of Application Course (Consult with an academic adviser for options)	3
Supporting Course (Chosen in consultation with an academic adviser)	3	Supporting Course (Chosen in consultation with an academic adviser)	3

General Education Course (GHW)	1.5	Supporting Course (Chosen in consultation with an academic adviser)	1-2
		General Education Course (GHW)	1.5
	13.5		14.5-15.5

Total Credits 118-122

* 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

¹ Semester will vary based on campus MATH 220 offerings.

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.