

STATISTICS, B.S.

Begin Campus: Any Penn State Campus

End Campus: University Park

Program Description

This major helps prepare students with interests in mathematics, computation, and the quantitative aspects of science for careers in industry and government as statistical analysts, or for further graduate training in statistics. The major includes five options:

1. An Actuarial Statistics Option for students interested in working as actuaries in the insurance or business fields;
2. An Applied Statistics Option for students interested in a cross-disciplinary program, such as econometrics, or psychometrics;
3. A Biostatistics Option for students interested in pursuing careers with pharmaceutical companies, research hospitals or other fields in which biological data is analyzed;
4. A Graduate Study Option for students planning to go to graduate school in a statistics-related field; and
5. A Statistics and Computing Option for students wishing to combine statistical expertise with programming skills.

What is Statistics?

Statistics is the field of study of that uses mathematics, computing, and analysis, to organize and understand data. Statisticians use critical and abstract thinking through the application of mathematical principles to statistical problems, and combine modeling with computational skills to analyze data.

You Might Like This Program If...

- You enjoy problem solving and creative thinking.
- You have a passion for turning information into decisions, discoveries, and insight.
- You want to develop a skillset in high demand across a variety of fields in science, technology, finance, risk analysis, manufacturing, research, and industry.

Entrance to Major

In order to be eligible for entrance into the Statistics major, a student must have:

1. Attained at least a 2.00 cumulative grade point average.
2. Completed MATH 140 and MATH 141; and earned a grade of C or better in each of these courses.

Degree Requirements

For the Bachelor of Science degree in Statistics, a minimum of 120 credits is required:

Requirement	Credits
General Education	45
Electives	0-1
Requirements for the Major	81-94

6-15 of the 45 credits for General Education are included in the Requirements for the Major. This includes: 0-9 credits of GN courses; 6 credits of GQ courses, 0-6 credits of GS courses.

Requirements for the Major

To graduate, a student enrolled in the major must earn a grade of C or better in each course designated by the major as a C-required course, as specified by Senate Policy 82-44 (<https://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#82-44>).

Common Requirements for the Major (All Options)

Code	Title	Credits
Prescribed Courses		
<i>Prescribed Courses: Require a grade of C or better</i>		
MATH 140	Calculus With Analytic Geometry I	4
MATH 141	Calculus with Analytic Geometry II	4
MATH 220	Matrices	2-3
MATH 230	Calculus and Vector Analysis	4
STAT 184	Introduction to R	2
STAT 200	Elementary Statistics	4
STAT 300	Statistical Modeling I	3
STAT 380	Data Science Through Statistical Reasoning and Computation	3
STAT 400	Statistical Modeling II	3
STAT/MATH 414	Introduction to Probability Theory	3
STAT/MATH 415	Introduction to Mathematical Statistics	3
STAT 470W	Capstone for Statistics Major—Problem Solving and Communication in Applied Statistics	3

Additional Courses

<i>Additional Courses: Require a grade of C or better</i>		
Select 1-3 credits from:		1-3
STAT 480	Introduction to SAS	
STAT 481	Intermediate SAS for Data Management	
STAT 482	Advanced Topics in SAS	
STAT 483	Statistical Programming in SAS	

Requirements for the Option

Select an option	42-52
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Requirements for the Option

Actuarial Statistics Option (48 credits)

Students who major in statistics with the actuarial statistics option and who wish to complete a concurrent major in mathematics may not choose the actuarial mathematics option in mathematics. Any other option in mathematics is acceptable.

Code	Title	Credits
Prescribed Courses		
ECON 102	Introductory Microeconomic Analysis and Policy	3
ECON 104	Introductory Macroeconomic Analysis and Policy	3
<i>Prescribed Courses: Require a grade of C or better</i>		
ACCTG 211	Financial and Managerial Accounting for Decision Making	4
FIN 301	Corporation Finance	3
RM 302	Risk and Insurance	3
RM 410	Financial Mathematics for Actuaries	3

RM 411	Long Term Actuarial Mathematics - Fundamentals	3
RM 412	Long Term Actuarial Mathematics - Advanced Topics	3
STAT 463	Applied Time Series Analysis	3

Additional Courses

Additional Courses: Require a grade of C or better

Select 3 credits from the following: 3

CMPSC 101	Introduction to Programming	
CMPSC 102	Introduction to Visual Programming	
CMPSC 121	Introduction to Programming Techniques	
CMPSC 131	Programming and Computation I: Fundamentals	
CMPSC 200	Programming for Engineers with MATLAB	
CMPSC 201	Programming for Engineers with C++	

Select 9 credits from the following: 9

BBH/HPA 440	Principles of Epidemiology	
CMPSC 448	Machine Learning and Algorithmic AI	
IE 434	Statistical Quality Control	
IE 436	Six Sigma Methodology	
MATH 436	Linear Algebra	
	or MATH 441 Matrix Algebra	
MATH/CMPSC 451	Numerical Computations	
	or MATH/	
CMPSC 455	Introduction to Numerical Analysis I	

RM 415	Modeling for Actuarial Science	
RM 420	Property, Casualty, and Health Insurance	
STAT/MATH 416	Stochastic Modeling	
STAT 440	Computational Statistics	
STAT 464	Applied Nonparametric Statistics	
STAT 466	Survey Sampling	

Supporting Courses and Related Areas

Select 8 credits from department list 8

Applied Statistics Option (42 credits)

Code	Title	Credits
Additional Courses		
<i>Additional Courses: Require a grade of C or better</i>		
Select 3 credits from the following: 3		
CMPSC 101	Introduction to Programming	
CMPSC 121	Introduction to Programming Techniques	
CMPSC 131	Programming and Computation I: Fundamentals	
CMPSC 201	Programming for Engineers with C++	
Select 12 credits from the following: 12		
BBH/HPA 440	Principles of Epidemiology	
CMPSC 448	Machine Learning and Algorithmic AI	
IE 434	Statistical Quality Control	
IE 436	Six Sigma Methodology	
MATH 436	Linear Algebra	
	or MATH 441 Matrix Algebra	
MATH/CMPSC 451	Numerical Computations	
	or MATH/	
CMPSC 455	Introduction to Numerical Analysis I	

RM 415	Modeling for Actuarial Science	
RM 420	Property, Casualty, and Health Insurance	
STAT/MATH 416	Stochastic Modeling	
STAT 440	Computational Statistics	
STAT 463	Applied Time Series Analysis	
STAT 464	Applied Nonparametric Statistics	
STAT 466	Survey Sampling	

Supporting Courses and Related Areas

Select 27 credits from department list, including a minor in a supporting field other than Mathematics ¹ 27

¹ Neither the mathematics major nor the six sigma minor, nor the risk management major with the actuarial science option may be used to satisfy the minor/concurrent major requirement. If a student wants to work in a supporting field that does not have a minor, he or she can propose a list of six appropriate courses and petition the Statistics Department for approval. It is the student's responsibility to justify the appropriateness of the proposed list. Students must receive a grade of C or better in each of these six courses.

Biostatistics Option (50-52 credits)

Code	Title	Credits
Prescribed Courses		
<i>Prescribed Courses: Require a grade of C or better</i>		
BIOL 110	Biology: Basic Concepts and Biodiversity	4
CHEM 110	Chemical Principles I	3
CHEM 111	Experimental Chemistry I	1
Additional Courses		
<i>Additional Courses: Require a grade of C or better</i>		
Select 3 credits from the following: 3		
CMPSC 101	Introduction to Programming	
CMPSC 121	Introduction to Programming Techniques	
CMPSC 131	Programming and Computation I: Fundamentals	
CMPSC 201	Programming for Engineers with C++	
Select 7-8 credits from the following: 7-8		
BIOL 220W	Biology: Populations and Communities	
BIOL 222	Genetics	
BIOL 230W	Biology: Molecules and Cells	
BIOL 240W	Biology: Function and Development of Organisms	
Select 6 credits from 400-level BIOL courses 6		
Select 12 credits from the following: 12		
BBH/HPA 440	Principles of Epidemiology	
CMPSC 448	Machine Learning and Algorithmic AI	
IE 434	Statistical Quality Control	
IE 436	Six Sigma Methodology	
MATH 436	Linear Algebra	
	or MATH 441 Matrix Algebra	
MATH/CMPSC 451	Numerical Computations	
	or MATH/	
CMPSC 455	Introduction to Numerical Analysis I	
RM 415	Modeling for Actuarial Science	
RM 420	Property, Casualty, and Health Insurance	

STAT/MATH 416	Stochastic Modeling
STAT 440	Computational Statistics
STAT 463	Applied Time Series Analysis
STAT 464	Applied Nonparametric Statistics
STAT 466	Survey Sampling

Supporting Courses and Related Areas
 Select 14-15 credits from department list 14-15

Graduate Study Option (42 credits)

A student completing the Graduate Study option will have earned a minor in mathematics in addition to a B.S. in Statistics. However, a student must fill out and submit the appropriate paperwork to the Mathematics Department in order for this minor to be officially recognized.

Code	Title	Credits
Prescribed Courses		
<i>Prescribed Courses: Require a grade of C or better</i>		
MATH 312	Concepts of Real Analysis	3
MATH 403	Classical Analysis I	3
MATH 404	Classical Analysis II	3
Additional Courses		
<i>Additional Courses: Require a grade of C or better</i>		
Select 3 credits from the following:		3
CMPSC 101	Introduction to Programming	
CMPSC 121	Introduction to Programming Techniques	
CMPSC 131	Programming and Computation I: Fundamentals	
CMPSC 201	Programming for Engineers with C++	
Select 9 credits from the following:		9
MATH 310	Elementary Combinatorics	
MATH 311W	Concepts of Discrete Mathematics	
MATH 421	Complex Analysis (does not require a grade of C or better)	
MATH 422	Wavelets and Fourier Analysis: Theory and Applications	
MATH 426	Introduction to Modern Geometry ¹	
MATH 429	Introduction to Topology ¹	
MATH/CMPSC 456	Introduction to Numerical Analysis II	
MATH 468	Mathematical Coding Theory	
Select 12 credits from the following:		12
BBH/HPA 440	Principles of Epidemiology	
CMPSC 448	Machine Learning and Algorithmic AI	
IE 434	Statistical Quality Control	
IE 436	Six Sigma Methodology	
MATH 436	Linear Algebra	
or MATH 441 Matrix Algebra		
MATH/CMPSC 451	Numerical Computations	
or MATH/ CMPSC 455		
RM 415	Modeling for Actuarial Science	
RM 420	Property, Casualty, and Health Insurance	
STAT/MATH 416	Stochastic Modeling	

STAT 440	Computational Statistics
STAT 463	Applied Time Series Analysis
STAT 464	Applied Nonparametric Statistics
STAT 466	Survey Sampling

Supporting Courses and Related Areas
 Select 9 credits from department list 9

¹ Course does not require a grade of C or better

Statistics and Computing Option (42 credits)

Code	Title	Credits
Prescribed Courses		
<i>Prescribed Courses: Require a grade of C or better</i>		
CMPSC 131	Programming and Computation I: Fundamentals	3
CMPSC 132	Programming and Computation II: Data Structures	3
CMPSC 465	Data Structures and Algorithms	3
Additional Courses		
<i>Additional Courses: Require a grade of C or better</i>		
CMPSC 360	Discrete Mathematics for Computer Science	3
or MATH 311W Concepts of Discrete Mathematics		
Select 9 credits of the following:		9
CMPSC 221	Object Oriented Programming with Web-Based Applications	
400-level CMPSC (other than CMPSC 451/MATH 451 or CMPSC 455/MATH 455)		
Select 12 credits from the following:		12
BBH/HPA 440	Principles of Epidemiology	
CMPSC 448	Machine Learning and Algorithmic AI	
IE 434	Statistical Quality Control	
IE 436	Six Sigma Methodology	
MATH 436	Linear Algebra	
or MATH 441 Matrix Algebra		
MATH/CMPSC 451	Numerical Computations	
or MATH/ CMPSC 455		
RM 415	Modeling for Actuarial Science	
RM 420	Property, Casualty, and Health Insurance	
STAT/MATH 416	Stochastic Modeling	
STAT 440	Computational Statistics	
STAT 463	Applied Time Series Analysis	
STAT 464	Applied Nonparametric Statistics	
STAT 466	Survey Sampling	
Supporting Courses and Related Areas		
Select 9 credits from department list		9
General Education		
Connecting career and curiosity, the General Education curriculum provides the opportunity for students to acquire transferable skills necessary to be successful in the future and to thrive while living in interconnected contexts. General Education aids students in developing intellectual curiosity, a strengthened ability to think, and a deeper sense of aesthetic appreciation. These are requirements for all baccalaureate students and are often partially incorporated into the requirements		

of a program. For additional information, see the General Education Requirements (<https://bulletins.psu.edu/undergraduate/general-education/baccalaureate-degree-general-education-program/>) section of the Bulletin and consult your academic adviser.

The keystone symbol appears next to the title of any course that is designated as a General Education course. Program requirements may also satisfy General Education requirements and vary for each program.

Foundations (grade of C or better is required and Inter-Domain courses do not meet this requirement.)

- **Quantification (GQ):** 6 credits
- **Writing and Speaking (GWS):** 9 credits

Breadth in the Knowledge Domains (Inter-Domain courses do not meet this requirement.)

- **Arts (GA):** 3 credits
- **Health and Wellness (GHW):** 3 credits
- **Humanities (GH):** 3 credits
- **Social and Behavioral Sciences (GS):** 3 credits
- **Natural Sciences (GN):** 3 credits

Integrative Studies

- **Inter-Domain Courses (Inter-Domain):** 6 credits

Exploration

- **GN**, may be completed with Inter-Domain courses: 3 credits
- **GA, GH, GN, GS, Inter-Domain courses.** This may include 3 credits of World Language course work beyond the 12th credit level or the requirements for the student's degree program, whichever is higher: 6 credits

University Degree Requirements

First Year Engagement

All students enrolled in a college or the Division of Undergraduate Studies at University Park, and the World Campus are required to take 1 to 3 credits of the First-Year Seminar, as specified by their college First-Year Engagement Plan.

Other Penn State colleges and campuses may require the First-Year Seminar; colleges and campuses that do not require a First-Year Seminar provide students with a first-year engagement experience.

First-year baccalaureate students entering Penn State should consult their academic adviser for these requirements.

Cultures Requirement

6 credits are required and may satisfy other requirements

- United States Cultures: 3 credits
- International Cultures: 3 credits

Writing Across the Curriculum

3 credits required from the college of graduation and likely prescribed as part of major requirements.

Total Minimum Credits

A minimum of 120 degree credits must be earned for a baccalaureate degree. The requirements for some programs may exceed 120 credits. Students should consult with their college or department adviser for information on specific credit requirements.

Quality of Work

Candidates must complete the degree requirements for their major and earn at least a 2.00 grade-point average for all courses completed within their degree program.

Limitations on Source and Time for Credit Acquisition

The college dean or campus chancellor and program faculty may require up to 24 credits of course work in the major to be taken at the location or in the college or program where the degree is earned. Credit used toward degree programs may need to be earned from a particular source or within time constraints (see Senate Policy 83-80 (<https://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#83-80>)). For more information, check the Suggested Academic Plan for your intended program.

Integrated B.S. in Statistics and M.A.S. in Applied Statistics

Requirements for the Integrated B.S. in Statistics and M.A.S. in Applied Statistics can be found in the Graduate Bulletin (<https://bulletins.psu.edu/graduate/programs/majors/statistics/#integratedundergradgradprogramstext>).

Program Learning Objectives

- **Statistical methods and theory:** Graduates will be prepared to design studies, use graphical and other means to explore data, build and assess statistical models, employ a variety of formal inference procedures (including resampling methods), and draw appropriate scope of conclusions from the analysis. They will have knowledge and experience applying a variety of statistical methods, assessing their appropriateness, and communicating results. They will have a foundation in theoretical statistics principles for sound analyses.
- **Data management and computation / data science:** Graduates will be facile with professional statistical software and other appropriate tools for data exploration, cleaning, validation, analysis, and communication. They will be able to program in a higher-level language, to think algorithmically, to use simulation-based statistical techniques, and to undertake simulation studies. Graduates will be prepared to manage and marshal data, including joining data from different sources and formats and restructuring data into a form suitable for analysis. Graduates will be prepared to undertake analyses in a well-documented and reproducible way.
- **Mathematical foundations:** Graduates will be prepared to apply mathematical ideas from linear algebra and calculus to statistics, and to set up and apply probability models.
- **Statistical practice:** Graduates will be prepared to write clearly, speak fluently, and construct effective visual displays and compelling written summaries. Graduates will be prepared collaborate in teams and to organize and manage projects. They will be prepared to communicate complex statistical methods in basic terms to managers and other audiences and visualize results in an accessible manner.
- **Discipline-specific knowledge for application domain:** Graduates will be prepared to apply statistical reasoning to domain-specific questions. This capacity includes translating research questions into statistical questions and communicating results appropriate to different disciplinary audiences.

Source: American Statistical Association Undergraduate Guidelines Workgroup (2014). 2014 curriculum guidelines for undergraduate programs in statistical science. Alexandria, VA: American Statistical Association.

Academic Advising

The objectives of the university's academic advising program are to help advisees identify and achieve their academic goals, to promote their intellectual discovery, and to encourage students to take advantage of both in-and out-of class educational opportunities in order that they become self-directed learners and decision makers.

Both advisers and advisees share responsibility for making the advising relationship succeed. By encouraging their advisees to become engaged in their education, to meet their educational goals, and to develop the habit of learning, advisers assume a significant educational role. The advisee's unit of enrollment will provide each advisee with a primary academic adviser, the information needed to plan the chosen program of study, and referrals to other specialized resources.

READ SENATE POLICY 32-00: ADVISING POLICY (<https://senate.psu.edu/policies-and-rules-for-undergraduate-students/32-00-advising-policy/>)

University Park

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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 Option: Statistics, 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 (GQ) ^{*†‡}	4	MATH 141 (GQ) ^{*†‡}	4
STAT 200 (GQ) ^{*†}	3	STAT 300 [*]	3
STAT 184 [*]	3	ECON 104 (GS) [†]	3
PSU 16	4	ACCTG 211 [*]	4
ECON 102 (GS) [†]	3	General Education Course (GN)	3
General Education Course (GHW)	1.5		
	15.5		17

Second Year

Fall	Credits	Spring	Credits
MATH 220 ^{*†}	3	STAT 414 [*]	3
MATH 230 [*]	3	STAT 400 [*]	3
STAT 380 [*]	3	General Education Course (GH)	3
CMPSC 131 ^{*†}	3	FIN 301 [*]	3
ENGL 15 or ESL 15 (GWS) [‡]	3	RM 302 [*]	3
	16		15

Third Year

Fall	Credits	Spring	Credits
STAT 415 [*]	3	STAT 463 [*]	3
RM 410 [*]	3	RM 411 or 420 [*]	3
ENGL 202C (GWS) [‡]	3	STAT 440 (Adv Stat) [*]	3
CAS 100 (GWS) [‡]	3	General Education Course (GN)	3
General Education Course (GA)	3	General Education Course (US)	3
	15		15

Fourth Year

Fall	Credits	Spring	Credits
RM 420 or 411 [*]	3	STAT 470W [*]	3
STAT 466 (Adv Stat) [*]	3	RM 412 or 422 [*]	3
General Education Course (GA)	1	STAT 480	1
General Education Course (GH)	3	Supporting course (check with advising)	3
General Education Course (IL)	3	General Education Course (GN)	3
		General Education Course (GHW)	1.5
	15		14.5

Total Credits 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.

Applied Option: Statistics, B.S. at University Park Campus

Note: a supporting program is required for this program (e.g., minor or concurrent major); consultation with an academic adviser is recommended.

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 (GQ) ^{*†‡††}	4 MATH 141 (GQ) ^{*†‡††}	4
STAT 200 (GQ) ^{*†}	4 STAT 300	3
STAT 184 [*]	2 ENGL 15 or ESL 15 (GWS) [†]	3
PSU 16	1 General Education Course (GH)	3
General Education Course (GA)	3 General Education Course (GN)	3
General Education Course (GHW)	1.5	
	15.5	16

Second Year		
Fall	Credits Spring	Credits
MATH 220 ^{*†}	3 STAT 414 [*]	3
MATH 230 [*]	4 STAT 463 [*]	3
CMPS 131 ^{*†}	3 CAS 100 (GWS) [†]	3
STAT 380 [*]	3 Supporting Course	3
General Education Course (GS)	3 General Education Course (GA)	3
	16	15

Third Year		
Fall	Credits Spring	Credits
STAT 415 [*]	3 STAT 440 [*]	3
STAT 400 [*]	3 STAT 416 [*]	3
ENGL 202C (GWS) [†]	3 Supporting Course	3
Supporting Course	3 General Education Course (IL)	3
General Education Course (GH)	3 General Education Course (GS)	3
	15	15

Fourth Year		
Fall	Credits Spring	Credits
STAT 464 [*]	3 STAT 470W [*]	3
STAT 466 [*]	3 STAT 480 [*]	1
Supporting Course	3 Supporting Course	3
Supporting Course	3 Supporting Course	3
General Education Course (GN)	3 General Education Course (US)	3

General Education Course (GHW)	1.5
15	14.5

Total Credits 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:

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.

Program Notes:

The applied statistics option requires that the student complete the requirements for a supporting minor or concurrent major. Neither the mathematics major/minor nor the six sigma minor, nor the risk management major with the actuarial science option may be used to satisfy the minor/concurrent major requirement. If a student wants to work in a supporting field that does not have a minor, he or she can propose a list of six appropriate courses and petition the Statistics Department for approval. It is the student's responsibility to justify the appropriateness of the proposed list. Students must receive a grade of C or better in each of these six courses.

Applied Option (MATH 26): Statistics, B.S. at University Park Campus

Note: a supporting program is required for this program (e.g., minor or concurrent major); consultation with an academic adviser is recommended.

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 26, 40, or 41 (GQ)	3 MATH 140 (GQ) ^{*‡##}	4
STAT 200 (GQ) ^{*†}	4 STAT 300 [*]	3
STAT 184 [*]	2 ENGL 15 or ESL 15 (GWS) [‡]	3
PSU 16	1 General Education Course (GH)	3
General Education Course (GA)	3 General Education Course (GN)	3
General Education Course (GHW)	1.5	
	14.5	16

Second Year

Fall	Credits Spring	Credits
MATH 220 ^{*†}	3 MATH 230 [*]	4
MATH 141 ^{*‡##}	4 STAT 464 [*]	3
CMPSC 131 ^{*†}	3 CAS 100 (GWS) [‡]	3
STAT 380 [*]	3 Supporting Course	3
General Education Course (GS)	3 General Education Course (GA)	3
	16	16

Third Year

Fall	Credits Spring	Credits
STAT 414 [*]	3 STAT 466 [*]	3
STAT 400 [*]	3 STAT 415 [*]	3
ENGL 202C (GWS) [‡]	3 Supporting Course	3
Supporting Course	3 General Education Course (IL)	3
General Education Course (GH)	3 General Education Course (GS)	3
	15	15

Fourth Year

Fall	Credits Spring	Credits
STAT 463 [*]	3 STAT 470W [*]	3
STAT 440 [*]	3 STAT 480 [*]	1
Supporting Course	3 Supporting Course	3
Supporting Course	3 Supporting Course	3
General Education Course (GN)	3 General Education Course (US)	3

General Education Course (GHW)	1.5
15	14.5

Total Credits 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:

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.

Program Notes:

The applied statistics option requires that the student complete the requirements for a supporting minor or concurrent major. Neither the mathematics major/minor nor the six sigma minor, nor the risk management major with the actuarial science option may be used to satisfy the minor/concurrent major requirement. If a student wants to work in a supporting field that does not have a minor, he or she can propose a list of six appropriate courses and petition the Statistics Department for approval. It is the student's responsibility to justify the appropriateness of the proposed list. Students must receive a grade of C or better in each of these six courses.

Biostatistics Option: Statistics, 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 (GQ) ^{*†##}	4 MATH 141 (GQ) ^{*†##}	4
STAT 200 (GQ) ^{**†}	4 STAT 300 [*]	3
STAT 184 [*]	2 ENGL 15 or ESL 15 (GWS) [‡]	3
PSU 16	1 CHEM 110 (GN) ^{**†}	3
BIOL 110 (GN) ^{**†}	4 CHEM 111 (GN) ^{**†}	1
	General Education Course (GHW)	1.5
	15	15.5

Second Year

Fall	Credits Spring	Credits
MATH 220 ^{**†}	3 STAT 414 [*]	3
MATH 230 [*]	4 BBH/HPA 440 [*]	3
BIOL 220W (GN) ^{**†}	4 CAS 100 (GWS) [‡]	3
STAT 380 [*]	3 CMPSC 131 ^{**†}	3
General Education Course (GA)	3 General Education Course (GH)	3
	17	15

Third Year

Fall	Credits Spring	Credits
STAT 415 [*]	3 STAT 463 [*]	3
STAT 400 [*]	3 STAT 416 [*]	3
ENGL 202C (GWS) [‡]	3 400-level BIOL [*]	3
BIOL 222, 230W, or 240W	3 General Education Course (IL)	3
General Education Course (GS)	3 General Education Course (IL)	3
	15	15

Fourth Year

Fall	Credits Spring	Credits
STAT 440 [*]	3 STAT 470W [*]	3
STAT 466 [*]	3 STAT 464 [*]	3
400-level BIOL [*]	3 STAT 480 [*]	1
Supporting Course	3 Supporting Course	3
General Education Course (GN)	3 General Education Course (US)	3
	General Education Course (GHW)	1.5
	15	14.5

Total Credits 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:

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 Studies Option: Statistics, 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 (GQ) ^{*†#†}	4 MATH 141 (GQ) ^{*†#†}	4
STAT 200 (GQ) ^{**†}	4 STAT 300 [*]	3
STAT 184 [*]	2 ENGL 15 or ESL 15 (GWS) [‡]	3
PSU 16	1 General Education Course (GH)	3
General Education Course (GA)	3 General Education Course (GN)	3
General Education Course (GHW)	1.5	
	15.5	16

Second Year

Fall	Credits Spring	Credits
MATH 220 ^{*†}	3 STAT 414 [*]	3
MATH 230 [*]	4 MATH 312 [*]	3
CMPSC 131 ^{*†}	3 CAS 100 (GWS) [‡]	3
STAT 380 [*]	3 MATH 310 [*]	3
General Education Course (GS)	3 General Education Course (GA)	3
	16	15

Third Year

Fall	Credits Spring	Credits
STAT 415 [*]	3 STAT 440 [*]	3
STAT 400 [*]	3 STAT 416 [*]	3
ENGL 202C [‡]	3 MATH 404 [*]	3
MATH 403 [*]	3 MATH 311W [*]	3
General Education Course (GH)	3 General Education Course (GS)	3
	15	15

Fourth Year

Fall	Credits Spring	Credits
STAT 463 [*]	3 STAT 470W [*]	3
MATH 429 [*]	3 STAT 480 [*]	1
MATH 436 [*]	3 MATH 451 [*]	3
General Education Course (IL)	3 General Education Course (GN)	3
General Education Course (GN)	3 General Education Course (US)	3
	General Education Course (GHW)	1.5
	15	14.5

Total Credits 122

‡ 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.

* Course requires a grade of C or better for the major

Statistics and Computing Option: Statistics, 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 (GQ) ^{*†##}	4 MATH 141 (GQ) ^{*†##}	4
STAT 200 (GQ) ^{**†}	4 STAT 300 [*]	3
STAT 184 [*]	2 ENGL 15 or ESL 15 (GWS) [‡]	3
PSU 16	1 General Education Course (GH)	3
General Education Course (GA)	3 General Education Course (GN)	3
General Education Course (GHW)	1.5	
	15.5	16

Second Year		
Fall	Credits Spring	Credits
MATH 220 ^{*†}	3 STAT 414 [*]	3
MATH 230 [*]	4 STAT 463 [*]	3
CMPSC 131 ^{*†}	3 CAS 100 (GWS) [‡]	3
STAT 380 [*]	3 CMPSC 132 ^{*†}	3
General Education Course (GS)	3 General Education Course (GA)	3
	16	15

Third Year		
Fall	Credits Spring	Credits
STAT 415 [*]	3 STAT 440 [*]	3
STAT 400 [*]	3 CMPSC 465 [*]	3
ENGL 202C (GWS) [‡]	3 CMPSC 360 [*]	3
CMPSC 221 [*]	3 General Education Course (IL)	3
General Education Course (GH)	3 General Education Course (GS)	3
	15	15

Fourth Year		
Fall	Credits Spring	Credits
CMPSC 448 [*]	3 STAT 470W [*]	3
STAT 466 [*]	3 STAT 480 [*]	1
CMPSC 442 [*]	3 CMPSC 455 [*]	3
Supporting Course	3 Supporting Course	3
General Education Course (GN)	3 General Education Course (US)	3
	General Education Course (GHW)	1.5
	15	14.5

Total Credits 122

‡ 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.

* Course requires a grade of C or better for the major

Actuarial Option: Statistics, 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 (GQ) ^{*†#†}	4 MATH 141 (GQ) ^{*†#†}	4
STAT 200 (GQ) ^{*†}	4 General Education Course (GA)	3
ENGL 15 or ESL 15 (GWS) [‡]	3 ECON 104 (GS) [†]	3
First-Year Seminar	1 ACCTG 211 [*]	4
ECON 102 (GS) [†]	3 General Education Course (GN)	3
General Education Course (GHW)	1.5	
	16.5	17

Second Year

Fall	Credits Spring	Credits Summer	Credits
MATH 220 ^{*†}	3 STAT 414 (or Supporting Course) [*]	3 STAT 414 (if not taken during the 4th semester) [*]	3
MATH 230 [*]	4 ENGL 202C (GWS) [‡]	3	
CAS 100A (GWS) [‡]	3 FIN 301 [*]	3	
CMPSC 131 ^{*†}	3 General Education Course (GH)	3	
General Education Course (GN)	3 General Education Course (US)		
	16	12	0

Third Year

Fall	Credits Spring	Credits
STAT 415 [*]	3 STAT 463 [*]	3
RM 410 [*]	3 RM 411 or 420 [*]	3
STAT 184 [*]	2 STAT 380 [*]	3
STAT 300 [*]	3 RM 302 [*]	3
General Education Course (GA)	3 General Education Course (GN)	3
	14	15

Fourth Year

Fall	Credits Spring	Credits
RM 420 or 411 [*]	3 STAT 470W [*]	3
STAT 400 [*]	3 RM 412 or 422 [*]	3
STAT 466 [*]	3 STAT 480 [*]	1
STAT 440 [*]	3 STAT 463 [*]	3
General Education Course (GH)	3 General Education Course (IL)	3
	General Education Course (GHW)	1.5
	15	14.5

Total Credits 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.

Applied Option: Statistics, 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 ECON 104 [†]	3
PSU 16	1 General Education Course	3
ECON 102 [†]	3 ENGL 15 (or General Education Course) [†]	3
ENGL 15 (or General Education Course) [†]	3 General Education Course	3
15		16
Second Year		
Fall	Credits Spring	Credits
MATH 220 ^{*†}	2 STAT 414 (or Supporting Course) [*]	3
MATH 230 [*]	4 ENGL 202C [‡]	3
CAS 100A [‡]	3 CMPSC 121 or 131 ^{*†}	3
Course for required minor [*]	3 Course for required minor [*]	3
General Education Course	3 General Education Course	3
15		15
Third Year		
Fall	Credits Spring	Credits
STAT 184 [*]	2 STAT 380 [*]	3
STAT 414 (or Supporting Course (if not taken in 4th semester)) [*]	3 STAT 415 [*]	3
STAT 461 [*]	3 STAT 462 [*]	3
Course for required minor [*]	3 STAT 480 [*]	1
General Education Course	3 Course for required minor [*]	3
General Education Course	3 General Education Course	3
17		16
Fourth Year		
Fall	Credits Spring	Credits
STAT 416 [*]	3 STAT 470W [*]	3
STAT 466 [*]	3 MATH 451 [*]	3
General Education Course (GHW)	1.5 STAT 416 [*]	3
Course for required minor [*]	3 Course for required minor [*]	3
Course for required minor [*]	3 Course for required minor [*]	3
General Education Course	3 General Education Course (GHW)	1.5
16.5		16.5
Total Credits 127		

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.

Program Notes:

The applied statistics option requires that the student complete the requirements for a supporting minor or concurrent major. Neither the mathematics major/minor nor the six sigma minor, nor the risk management major with the actuarial science option may be used to satisfy the minor/concurrent major requirement. If a student wants to work in a supporting field that does not have a minor, he or she can propose a list of six appropriate courses and petition the Statistics Department for approval. It is the student's responsibility to justify the appropriateness of the proposed list. Students must receive a grade of C or better in each of these six courses.

* Course requires a grade of C or better for the major

‡ Course requires a grade of C or better for General Education

Biostatistics Option: Statistics, B.S. at Commonwealth Campuses

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First Year

Fall	Credits Spring	Credits
MATH 140 ^{*†#†}	4 MATH 141 ^{*†#†}	4
STAT 200 ^{*†}	4 CHEM 110 ^{*†}	3
PSU 16	1 CHEM 111 ^{*†}	1
BIOL 110 ^{*†}	4 ENGL 15 (or General Education Course) [†]	3
ENGL 15 (or General Education Course) [†]	3 General Education Course	3
	16	14

Second Year

Fall	Credits Spring	Credits
MATH 220 ^{*†}	2 STAT 414 (or Supporting Course) [*]	3
MATH 230 [*]	4 ENGL 202C [†]	3
CAS 100A [‡]	3 CMPSC 121 or 131 ^{*†}	3
BIOL 220W, 222, 230W, or 240W ^{*†}	3-4 BIOL 220W, 222, 230W, or 240W ^{*†}	3-4
General Education Course	3 General Education Course	3
	15	16

Third Year

Fall	Credits Spring	Credits
STAT 184 [*]	2 STAT 380 [*]	3
STAT 414 (or Supporting Course (if not taken in 4th semester)) [*]	3 STAT 415 [*]	3
STAT 461 [*]	3 STAT 462 [*]	3
BIOL 400-Level Selection [*]	3 STAT 480 [*]	1
Supporting Course	3 Supporting Course	3
General Education Course	3 General Education Course	3
	17	16

Fourth Year

Fall	Credits Spring	Credits
STAT 416 [*]	3 STAT 470W [*]	3
STAT 466 [*]	3 MATH 451 [*]	3
BIOL 400-Level Selection [*]	3 STAT 416 [*]	3
Supporting Course	3 Supporting Course	3
Supporting Course	3 Supporting Course	3
General Education Course (GHW)	1.5 General Education Course (GHW)	1.5
	16.5	16.5

Total Credits 127

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.

* Course requires a grade of C or better for the major

‡ Course requires a grade of C or better for General Education

Graduate Studies Option: Statistics, B.S. at Commonwealth Campuses

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First Year

Fall	Credits Spring	Credits
MATH 140 ^{*†‡#}	4 MATH 141 ^{*†‡#}	4
STAT 200 ^{**†}	4 ENGL 15 [‡]	3
PSU 16	1 General Education Course	3
General Education Course	3 General Education Course	3
General Education Course	3 General Education Course	3
15		16

Second Year

Fall	Credits Spring	Credits
MATH 220 ^{**†}	2 STAT 414 (or Supporting Course) [*]	3
MATH 230 [*]	4 ENGL 202C [‡]	3
CAS 100A [‡]	3 CMPSC 121 or 131 ^{**†}	3
MATH 311W [*]	3 MATH 312 [*]	3
General Education Course	3 General Education Course	3
15		15

Third Year

Fall	Credits Spring	Credits
STAT 184 [*]	2 STAT 380 [*]	3
STAT 414 (or Supporting Course (if not taken in 4th semester)) [*]	3 STAT 415 [*]	3
STAT 461 [*]	3 STAT 462 [*]	3
MATH 403 [*]	3 MATH 404 [*]	3
General Education Course	3 Supporting Course	3
General Education Course	3 General Education Course	3
17		18

Fourth Year

Fall	Credits Spring	Credits
STAT 416 [*]	3 STAT 470W [*]	3
STAT 466 [*]	3 MATH 400-Level Selection [*]	3
MATH 436 [*]	3 MATH 310 [*]	3
STAT 480 [*]	1 MATH 451 [*]	3
General Education Course	3 Supporting Course	3
General Education Course (GHW)	1.5 General Education Course (GHW)	1.5
14.5		16.5

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

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.

Statistics and Computing Option: Statistics, 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 CMPSC 122 or 132 ^{**†}	3
PSU 16	1 General Education Course	3
CMPSC 121 or 131 ^{**†}	3 ENGL 15 (or General Education Course) [‡]	3
ENGL 15 (or General Education Course) [‡]	3 General Education Course	3
15		16

Second Year

Fall	Credits Spring	Credits
MATH 220 ^{**†}	2 STAT 414 (or Supporting Course) [*]	3
MATH 230 [*]	4 ENGL 202C [‡]	3
CAS 100A [‡]	3 CMPSC 221 [*]	3
General Education Course	3 Supporting Course	3
General Education Course	3 General Education Course	3
15		15

Third Year

Fall	Credits Spring	Credits
STAT 184 [*]	2 STAT 380 [*]	3
STAT 414 (or Supporting Course (if not taken in 4th semester)) [*]	3 STAT 415 [*]	3
STAT 461 [*]	3 STAT 462 [*]	3
MATH 311W or CMPSC 360 [*]	3 STAT 480 [*]	1
Supporting Course	3 Supporting Course	3

General Education Course	3 General Education Course	3
17		16
Fourth Year		
Fall	Credits Spring	Credits
STAT 416*	3 STAT 470W*	3
STAT 466*	3 MATH 451*	3
CMPSC 465*	3 STAT 416*	3
CMPSC 400-Level Selection*	3 CMPSC 400-Level Selection*	3
General Education Course (GHW)	1.5 Supporting Course	3
General Education Course	3 General Education Course (GHW)	1.5
16.5		16.5

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

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).

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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.

Career Paths

Statistics can be applied in a broad range of fields, including business, agriculture, finance, public policy, and many more. As data in all forms become more easily stored and accessed, so does the demand and opportunity for statisticians to help others discern what can (or cannot) be learned from the information available. In fact, statisticians are also frequently sought after for their disciplined approach to problem solving and critical thinking, even when no formal data analysis is needed.

Careers

Statisticians in the pharmaceutical industry work with doctors and research scientists to design and execute experiments and clinical trials. - Statisticians at technology and manufacturing companies work to advance product development from ensuring reliability and quality of hardware components to software development. - Statisticians collaborate with epidemiologists and public health agencies like the NIH and CDC to study infectious disease dynamics among threatened populations. - Statisticians at government agencies like the U.S. Department of Education, Census Bureau, and Department of Labor help inform public policy and assess impact of legislative changes. - And much more...

MORE INFORMATION ABOUT POTENTIAL CAREER OPTIONS FOR GRADUATES OF THE STATISTICS PROGRAM (<https://thisisstatistics.org/jobs-in-statistics/>)

Professional Resources

- The American Statistical Association (<https://www.amstat.org/>)

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