

SOCIAL DATA ANALYTICS, B.S.

Begin Campus: Any Penn State Campus

End Campus: University Park

Degree Requirements

For the Bachelor of Science degree in Social Data Analytics, a minimum of 120 credits is required:

Requirement	Credits
General Education	45
Requirements for the Major	87

12 of the 45 credits for General Education are included in the Requirements for the Major. This includes: 6 credits of GQ courses, 6 credits of GS courses.

Requirements for the Major

A grade of C or better is required for all courses in the major. To graduate, a student enrolled in the major must earn at least a C grade 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>).

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 221	Object Oriented Programming with Web-Based Applications	3
CMPSC 360	Discrete Mathematics for Computer Science	3
DS 220	Data Management for Data Sciences	3
DS 300	Privacy and Security for Data Sciences	3
DS 310	Machine Learning for Data Analytics	3
DS 330	Visual Analytics for Data Sciences	3
MATH 140	Calculus With Analytic Geometry I	4
MATH 141	Calculus with Analytic Geometry II	4
MATH 220	Matrices	2
PLSC 1	American Politics: Principles, Processes and Powers	3
PLSC 10	Scientific Study of Politics	3
PLSC 309	Quantitative Political Analysis	3
SODA 308	Research Design for Social Data Analytics	3
SODA 496	Special Topics	6
STAT 184	Introduction to R	2
STAT/MATH 318	Elementary Probability	3
STAT 380	Data Science Through Statistical Reasoning and Computation	3

Additional Courses

Additional Courses: Require a grade of C or better

Select 3 credits from the following: 3		
PLSC 3	Comparing Politics around the Globe	
PLSC 7N	Contemporary Political Ideologies	
PLSC 14	International Relations	

PLSC 17N	Introduction to Political Theory	
Select 3 credits from the following: 3		
PHIL 106	Business Ethics	
PHIL 107	Philosophy of Technology	
PHIL 233Z	Ethics and the Design of Technology	
PHIL 406		
PHIL 407	Seminar in Philosophy of Technology	
Select 12 credits of PLSC courses at the 400 level of which at least 9 credits must be data intensive courses from a department list, including but not limited to PLSC 404, PLSC 429, PLSC 447, PLSC 476. 12		
Select 9 credits from the following: 9		
CMPSC 431W	Database Management Systems	
CMPSC 448	Machine Learning and Algorithmic AI	
CMPSC 465	Data Structures and Algorithms	
DS 320	Data Integration	
DS 402	Emerging Trends in the Data Sciences	
DS/CMPSC 410	Programming Models for Big Data	
STAT/MATH 319	Elementary Mathematical Statistics	
STAT 440	Computational Statistics	
STAT 464	Applied Nonparametric Statistics	
Analytics courses from a department list		

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, GHW, 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.