

# BACHELOR OF SCIENCE WITH A MAJOR IN STATISTICS

Statistics plays an important role throughout society, providing methodologies for making advances in medicine, genetics, and other research areas and for making decisions in business and public policy. Our curriculum teaches the reasoning and methods for analyzing and understanding data and will explore how these skills can be applied to develop new initiatives. With GW's connections to statisticians across DC, you'll also have the unique advantage of learning from professionals who bring valuable practical experience into the classroom. Careers for statisticians are found in all sectors of society with statisticians in demand in government agencies, universities, and businesses. Statisticians are called upon to apply statistical methods in policy-making roles in government, development of pharmaceuticals, market research, finance, accounting, and quality control in manufacturing.

Visit the program website (<https://statistics.columbian.gwu.edu/>) for additional information.

## ADMISSIONS

For information about the admission process, including deadlines, visit the Office of Undergraduate Admissions website (<https://undergraduate.admissions.gwu.edu/>). Applications can be submitted via the Common Application (<https://go.gwu.edu/commonapp/>).

Supporting documents not submitted online should be mailed to:

Office of Undergraduate Admissions  
The George Washington University  
800 21st St NW Suite 100  
Washington, DC 20052

For questions visit [undergraduate.admissions.gwu.edu/contact-us](https://undergraduate.admissions.gwu.edu/contact-us) (<http://undergraduate.admissions.gwu.edu/contact-us/>).

## REQUIREMENTS

The following requirements must be fulfilled:

The general requirements stated under Columbian College of Arts and Sciences, Undergraduate Programs (<https://bulletin.gwu.edu/arts-sciences/#degreeregulationstext>).

Program-specific curriculum—all courses in the major, including prerequisites, must be completed with a minimum grade of C-:

| Code                         | Title                       | Credits |
|------------------------------|-----------------------------|---------|
| <b>Prerequisite courses:</b> |                             |         |
| MATH 1231                    | Single-Variable Calculus I  |         |
| MATH 1232                    | Single-Variable Calculus II |         |
| MATH 2233                    | Multivariable Calculus      |         |

|              |  |
|--------------|--|
| STAT 1051    | Introduction to Business and Economic Statistics (or equivalent) |
| or STAT 1053 | Introduction to Statistics in Social Science                     |
| STAT 1129    | Introduction to Computing (or equivalent)                        |
| or CSCI 1121 | Introduction to C Programming                                    |

| Code | Title | Credits |
|------|-------|---------|
|------|-------|---------|

### Required courses in the major:

|              |   |
|--------------|---|
| MATH 2184    | Linear Algebra I                                    |
| or MATH 2185 | Comprehensive Introduction to Linear Algebra        |
| STAT 2118    | Regression Analysis                                 |
| STAT 3119    | Design and Analysis of Experiments                  |
| STAT 4157    | Introduction to Mathematical Statistics I           |
| STAT 4158    | Introduction to Mathematical Statistics II          |
| STAT 2183    | Intermediate Statistics Lab/Packages                |
| or STAT 4197 | Fundamentals of SAS Programming for Data Management |

Four approved upper-level courses, some of which, in special circumstances, may be taken in other departments. To assure a balanced program, departmental approval of electives is required for all majors. Some suggested electives are:

|           |   |
|-----------|---|
| STAT 2112 | Business and Economic Statistics II         |
| STAT 3187 | Introduction to Sampling                    |
| STAT 4181 | Applied Time Series Analysis                |
| STAT 4188 | Nonparametric Statistics Inference          |
| STAT 4189 | Mathematical Probability and Applications I |
| STAT 4198 | Special Topics                              |

## GENERAL EDUCATION

In addition to the University General Education Requirement (<https://bulletin.gwu.edu/university-regulations/general-education/>), undergraduate students in Columbian College must complete a further, College-specific general education curriculum—Perspective, Analysis, Communication (G-PAC) (<https://bulletin.gwu.edu/arts-sciences/gpac/>) as well as the course CCAS 1001 First-Year Experience. Together with the University General Education Requirement, G-PAC engages students in active intellectual inquiry across the liberal arts. Students achieve a set of learning outcomes that enhance their analytical skills, develop their communication competencies, and invite them to participate as

responsible citizens who are attentive to issues of culture, diversity, and privilege.

Coursework (<https://bulletin.gwu.edu/university-regulations/general-education/#generaleducationtext>) **for the University General Education Requirement is distributed as follows:**

- One course in critical thinking in the humanities.
- Two courses in critical thinking, quantitative reasoning, or scientific reasoning in the social sciences.
- One course that has an approved oral communication component.
- One course in quantitative reasoning (must be in mathematics or statistics).
- One course in scientific reasoning (must be in natural and/or physical laboratory sciences).
- UW 1020 (<https://bulletin.gwu.edu/search/?P=UW%201020>) University Writing (4 credits).
- After successful completion of UW 1020, 6 credits distributed over at least two writing in the discipline (WID) courses taken in separate semesters. WID courses are designated by a "W" appended to the course number.

**Coursework for the CCAS G-PAC requirement is distributed as follows:**

- Arts—one approved arts course that involves the study or creation of artwork based on an understanding or interpretation of artistic traditions or knowledge of art in a contemporary context.
- Global or cross-cultural perspective—one approved course that analyzes the ways in which institutions, practices, and problems transcend national and regional boundaries.
- Local or civic engagement—one approved course that develops the values, ethics, disciplines, and commitment to pursue responsible public action.
- Natural or physical science—one additional approved laboratory course that employs the process of scientific inquiry (in addition to the one course in this category required by the University General Education Requirement).
- Humanities—one additional approved humanities course that involves critical thinking skills (in addition to the one course in this category required by the University General Education Requirement).
- CCAS 1001 First-Year Experience

**Certain courses are approved to fulfill GPAC requirements in more than one category.**

Courses taken in fulfillment of G-PAC requirements may also be counted toward majors or minors. Transfer courses taken prior to, but not after, admission to George Washington University may count toward the University General Education Requirement and G-PAC, if those transfer courses are equivalent to GW courses that have been approved by the University and the College.

Lists of approved courses in the above categories are included on each undergraduate major's (<https://bulletin.gwu.edu/arts-sciences/#majorstext>) page in this Bulletin.

## SPECIAL HONORS

In addition to the general requirements stated under University Regulations, in order to be considered for graduation with Special Honors, students who seek Special Honors in statistics should check with the Department.