BACHELOR OF SCIENCE WITH A MAJOR IN ECONOMICS (STEM)

The bachelor of science program in economics at GW is built for the data-driven future, blending rigorous quantitative analysis with deep economic theory. Students have the opportunity to learn and use advanced econometrics and statistical computing to investigate scarcity and to model how global entities make critical tradeoffs. Economics students join a high-caliber community of researchers and practitioners, developing the analytical firepower needed to tackle complex economic problems in fields like development, forecasting, international trade, and urban economics. Leveraging GW's prime DC location, students can seamlessly bridge theory and policy through exclusive access to major economic institutions, including the Federal Reserve, US Treasury, World Bank, and International Monetary Fund.

This is a STEM designated program.

Visit the program website (https://economics.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 (http://undergraduate.admissions.gwu.edu/contact-us).

REQUIREMENTS

This Bulletin covers the degree requirements for students matriculating in the current academic year. Students who matriculated before the current year can find their requirements in the relevant archived Bulletin (https://bulletin.gwu.edu/archives/).

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) and the following curricular requirements.

Program-specific curriculum:

Code	Title	Credits
Required core courses		
ECON 1011	Principles of Economics I *	
ECON 1012	Principles of Economics II	
ECON 2101	Intermediate Microeconomic Theory	
or ECON 2103	Intermediate Microeconomic Theory A Mathematical Approach	
ECON 2102	Intermediate Macroeconomic Theory	
or ECON 2104	Intermediate Macroeconomic Theory: A Mathematical Approach	
ECON 2123	Introduction to Econometrics	
MATH 1221	Calculus with Precalculus II	
or MATH 1231	Single-Variable Calculus I	
MATH 1232	Single-Variable Calculus II	
STAT 1111	Business and Economic Statistics I (or equivalent)	
or STAT 1051	Introduction to Business and Economic Statistics	
or STAT 1053	Introduction to Statistics in Social Science	
STEM electives		
Two courses (6 credits) selected from the following. Both courses must be completed with a minimum grade of C-.		
CSCI 1011	Introduction to Programming with Java	
CSCI 1012	Introduction to Programming with Python	
CSCI 1111	Introduction to Software Development	
CSCI 1112	Algorithms and Data Structures	
CSCI 1311	Discrete Structures I	
DATS 1001	Data Science for All	
DATS 2102	Data Visualization for Data Science	
DATS 2103	Data Mining for Data Science	
DATS 2104	Data Warehousing for Data Science	
DNSC 4279	Data Mining	
DNSC 4280	Machine Learning	
EMSE 2705	Mathematics of Operations Research	
FINA 4301	Financial Derivatives	

ISTM 3119	Introduction to Programming
MATH 2184	Linear Algebra I
MATH 2233	Multivariable Calculus **
MATH 2971	Introduction to Mathematical Reasoning **
MATH 3342	Ordinary Differential Equations **
MATH 3410	Mathematics of Finance **
MATH 4239	Real Analysis I **
STAT 1129	Introduction to Computing
STAT 2183	Intermediate Statistics Lab/Packages
STAT 3119	Design and Analysis of Experiments
STAT 3157	Introduction to Mathematical Statistics I
STAT 3187	Introduction to Sampling
STAT 4158	Introduction to Mathematical Statistics II
STAT 4181	Applied Time Series Analysis
STAT 4188	Nonparametric Statistics Inference
STAT 4189	Mathematical Probability and Applications I
STAT 4190	Mathematical Probability and Applications II
STAT 4197	Fundamentals of SAS Programming for Data Management

Additional electives

18 credits (six courses) in Economics (ECON) electives numbered between 2000 and 4999 are required. At least one of these courses should be numbered between 3000 and 3999 and at least one should be an ECON WID course. The following guidelines and restrictions apply to this requirement:

FINA 3101 and/or FINA 3301 can be used as substitutes for up to two ECON elective courses numbered between 2000 and 4999. Credit cannot be earned for both FINA 3301 and ECON 2121.

ECON 3098, ECON 3099, FINA 3101, and FINA 3301 are not considered 3000-level ECON electives and, therefore, do not fulfill the requirement for one 3-credit ECON course numbered from 3000 to 3999.

No more than three of the following courses can be taken to fulfill this requirement: ECON 2169, ECON 2198, ECON 3098, and ECON 3198.

No more than two of the following courses can be used to fulfill this requirement: ECON 2180, ECON 2181, and ECON 2182. ECON 2180 does not satisfy the major elective requirement if taken concurrently with or after successful completion of ECON 2181 or ECON 2182.

*Post-matriculation residency requirement: ECON 1011 must be taken at GW to count toward the major. Students who matriculate with credit earned through examination (e.g., AP) or transfer credit for ECON 1011 are exempt from this residency requirement.

**MATH 2233, MATH 2971, MATH 3342, MATH 3410, and MATH 4239 are strongly recommended for students planning to pursue graduate studies in economics.

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://advising.columbian.gwu.edu/general-education-curriculum-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 University Writing
- After successful completion of UW 1020, 6 credits distributed over at least two different Writing in the Disciplines (WID) courses taken in separate semesters (summer counts as one semester). 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 can also be counted toward majors or minors. Transfer courses taken prior to, but not after, admission to George Washington University can 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 meeting general requirements stated under University Regulations, to be considered for graduation with Special Honors in Economics, students must have taken at least six graded GWU ECON courses(18 credits) prior to the graduation semester; have a minimum ECON GPA of 3.80 (calculated using all ECON courses completed at GWU prior to the graduation semester); submit a completed application for special honors to the ECON Department at the beginning of their graduation semester.

A student may also be considered for Special Honors in Economics if their proseminar research paper nominated for departmental prizes.

COMBINED PROGRAM

Combined program

- Dual Bachelor of Arts or Bachelor of Science with a major in economics and Master of Public Policy (https://bulletin.gwu.edu/arts-sciences/economics/combined-ba-or-bs-and-mpp/)