

DATA ANALYTICS AND POLICY, MASTER OF SCIENCE

MS in Data Analytics and Policy (<https://advanced.jhu.edu/academics/graduate/ms-data-analytics-policy/>)

The Master of Science in Data Analytics and Policy prepares students to use analytics to tackle policy challenges in the public and private sectors. Students graduate with expertise in cutting-edge analytical methods relied upon by government agencies, research institutes, private companies, and nonprofit organizations. The program emphasizes the application of analytics to substantive issues to develop students into data-driven leaders.

The schedule for completing this 12-course degree program is flexible. Many students work full time while attending the program on a part-time basis and complete their degree in two years. Full-time students can complete the degree more quickly. The MS in Data Analytics and Policy program is offered primarily online and can be completed as a fully online program. Students in the Washington, D.C. area may have an opportunity to take some elective courses on campus.

The program includes six required core courses and six electives. The electives cover a wide range of analytical methods, including machine learning, predictive analytics, text analysis, civic technology, economic analysis, survey methodology, and policy analysis. Students may choose to earn a concentration in one of the following specialized elective areas: statistical analysis, public management, political behavior and policy analysis, or geospatial analysis.

Admissions Criteria for All Advanced Academic Programs (<https://e-catalogue.jhu.edu/arts-sciences/advanced-academic-programs/Admission/#admissionrequirementstext>)

PROGRAM-SPECIFIC REQUIREMENTS

In addition to the materials and credentials required for all programs, the Master of Science in Data Analytics and Policy program requires:

- **Resume or Academic CV**
- **Two letters of recommendation**
- **Statement of Purpose:** A statement, up to one page in length, should be provided, describing the applicant's personal background and/or a part of their life experience that has shaped their goals. This may include elaboration on personal challenges and opportunities that have influenced the decision to pursue a graduate degree at Johns Hopkins.
- **Writing Sample:** A writing sample of approximately 1,250 words should be submitted, demonstrating the applicant's ability to use quantitative data to answer research questions, address policy problems, or support data-driven decision-making. Applicants with limited background in quantitative analysis may describe their interest in learning to use quantitative methodologies and how they intend to apply them to an area of interest in policy and political analysis. The writing sample should include original analysis and/or

draw on credible secondary sources that use quantitative methods. Appropriate citations should be included in any common format (APA, Chicago Style, or similar). Writing samples may not be co-authored, and those written in the last five years are preferred.

Program Requirements

To earn the MS in Data Analytics and Policy, students must complete:

- Six required core courses that provide the foundations for conducting and presenting the results of quantitative data analysis.
- Six elective courses that cover additional topics in data analysis, public policy, and politics.

Code	Title	Credits
Six Core Courses - Required		18
AS.470.681	Probability and Statistics, Introduction to Data Analytics and Policy	
AS.470.768	Programming and Data Management	
AS.470.673	Data Visualization	
AS.470.709	Quantitative Methods, Quantitative Methods for Policy and Political Analysis	
AS.470.667	Machine Learning Methods and Applications	
AS.470.862	Capstone for Data Analytics and Policy	
Six Electives		18
Total Credits		36

Electives and Concentrations

Students will complete six elective courses for the MS in Data Analytics and Policy, in addition to the six required core courses, for a total of 12 courses to complete the degree.

All courses from the concentrations on this page may count as one of the six elective courses.

A student may wish to pursue a concentration by completing four elective courses in one of the concentration areas listed below. Pursuing a concentration is optional.

A student can only earn one concentration. There are four concentrations offered through the MS in Data Analytics and Policy program.

In compliance with AAP divisional policy, with advisor permission, a student may take up to two general electives towards the degree from other graduate programs at Johns Hopkins. These will be general electives and will not count towards a concentration. The course must be graduate-level, satisfy course hour requirements, and be relevant to the Data Analytics and Policy curriculum. Please contact your advisor to arrange this.

Concentration in Statistical Analysis

Code	Title	Credits
AS.470.643	Text as Data	3
AS.470.662	Expertise and Evidence in Policymaking	3
AS.470.669	Math for Data Scientists	3
AS.470.703	Urban Data Analytics	3
AS.470.708	Unleashing Open Data with Python	3
AS.470.738	AI Technology, Innovation, and Policy	3
AS.470.758	Data-Driven Campaigns and Elections	3
AS.470.763	Database Management Systems	3

AS.470.764	Survey Methodology	3
AS.470.769	Data Science for Public Policy	3
AS.470.781	Cloud Computing in the Public Sector	3

Concentration in Public Management

Code	Title	Credits
AS.470.605	Global Political Economy	3
AS.470.608	Public Policy Evaluation & the Policy Process	3
AS.470.627	Financial Management & Analysis in the Public Sector	3
AS.470.631	Economics for Public Decision-Making	3
AS.470.645	The Budgetary Process	3
AS.470.662	Expertise and Evidence in Policymaking	3
AS.470.671	Risk Management Analytics	3
AS.470.738	AI Technology, Innovation, and Policy	3
AS.470.781	Cloud Computing in the Public Sector	3
AS.470.798	Financial Management and Analysis in Nonprofits	3

AS.430.609	Spatial Data Management: Quality and Control	3
AS.430.610	GIS for Infrastructure Management	3
AS.430.612	Cartographic Design and Visualization	3
AS.430.615	Big Data Analytics: Tools and Techniques	3
AS.430.617	Census Data Mining: Visualization and Analytics	3
AS.430.619	Web Application Development	3
AS.430.621	GIS for Emergency Management	3
AS.430.627	Artificial Intelligence and Machine Learning in Geospatial Technology	3
AS.430.629	Drones in Geospatial Decision Making	3
AS.430.631	Spatial Algorithms and Data Structures	3
AS.430.635	Urban Analytics	3

Concentration in Political Behavior and Policy Analysis

Code	Title	Credits
AS.470.608	Public Policy Evaluation & the Policy Process	3
AS.470.617	The Courts and Public Policy	3
AS.470.620	Race, Politics, and Policy	3
AS.470.641	Introduction to Advocacy and Lobbying	3
AS.470.662	Expertise and Evidence in Policymaking	3
AS.470.684	Legislative Language and Policymaking	3
AS.470.688	Political Institutions and the Policy Process	3
AS.470.701	Congress: Why the First Branch Matters	3
AS.470.703	Urban Data Analytics	3
AS.470.738	AI Technology, Innovation, and Policy	3
AS.470.758	Data-Driven Campaigns and Elections	3
AS.470.769	Data Science for Public Policy	3
AS.470.835	DC Lab: Politics, Policy, and Analytics	3
AS.473.602	Intelligence Analysis	3
AS.473.663	The Intelligence-Policy Nexus	3

Concentration in Geospatial Analysis

Note: AS.430.604 and AS.430.606 are 4 credit courses, but they count as only one course towards the 12 required courses for the degree. It is the total number of courses with 3 or more credit hours, not total number of credits, that satisfies program requirements.

Code	Title	Credits
AS.472.611	Analyzing Social Media and Geospatial Information	3
AS.472.612	Geospatial Analysis: Communicating with Multiple Audiences	3
AS.430.600	Web GIS	3
AS.430.601	Geographic Information Systems (GIS)	3
AS.430.602	Remote Sensing: Systems and Applications	3
AS.430.603	Geospatial Statistics	3
AS.430.604	Spatial Analytics	4
AS.430.606	Programming in GIS	4
AS.430.607	Spatial Databases and Data Interoperability	3