



Greater Washington Partnership's

# SPA Data Analytics and Digital Technology Certificate

## REQUIRED COURSES

### **Career & Professional Exploration and Development (UGST-100)**

Undertake an introduction to the career development process, from career exploration through self-marketing to finding a job.

### **Basic Statistics (STAT-202 or STAT-203)**

Explore data presentation, display, and summary; averages, dispersion, simple linear regression, and correlation; probability; sampling distributions; confidence intervals; and tests of significance using statistical software. Offered with and without calculus.

### **Statistical Programming in R (STAT-412)**

Learn the basics of programming using the open source statistical program R. Skills include imputing data, performing basic analyses, graphing, data types, control structures and functions in base R, and using packages to expand R's capabilities.

### **Cybersecurity Risk Management (ITEC-466)**

Examine the risks associated with information management in the digital economy, the most effective personal and business practices to manage these risks, and the associated information forensics to understand where and how information can be traced.

### **Introduction to Political Research (GOVT-310)**

This course offers an introduction to political science research including how theories are generated, operationalized, and tested, how studies are designed, and how data is collected and analyzed using statistical techniques. By engaging with cutting-edge research and developing their own major project applying analytic and statistical methods to contemporary political problems, students develop essential research skills.

### **Introduction to Justice Research (JLC-280)**

This course focuses on the scientific study of people and their interactions, in particular questions related to crime, justice, and political violence. The course gives students the tools to analyze and understand social science research (i.e., be a consumer of research). It also provides quantitative skills in game theory, probability, statistics, and programming to serve as a foundation to becoming a producer of social science research.

The **Data Analytics and Digital Technology Certificate** is a 17-hour certificate program that prepares students to apply data science to generate insights from data and identify and predict trends. This includes instruction in computer databases, computer programming, inference, machine learning, optimization, probability and stochastic models, statistics, strategy, uncertainty quantification, and visual analytics. Students will be exposed to knowledge, skills, and abilities around six different areas:

- The Role of Data and Analytics
- Probability and Descriptive and Inferential Statistics
- Data Manipulation
- Data Visualization and Communication
- Data Ethics
- Data Security



The Greater Washington Partnership (GWP) is an organization which seeks to promote economic growth throughout the Washington Metropolitan Area. In summer 2018, the GWP announced the launch of the Capital CoLAB (Collaborative of Leaders in Academia and Business), a first-of-its-kind alliance of university and business leaders who have come together to take action to strengthen the Capital Region and position the region as a leading global hub for innovation. This certificate is designed for students seeking to acquire digital technology skills required by employers across a broad range of professions.

## CoLAB Partners

### Universities:

- American University
- Georgetown University
- George Mason University
- The George Washington University
- Howard University
- Johns Hopkins University
- University of Maryland
- University of Richmond
- University of Virginia
- Virginia Commonwealth University
- Virginia Tech

### Businesses:

- Amazon
- Booz Allen Hamilton
- Capital One
- Deloitte
- EY
- General Dynamics Information Technology
- INOVA
- JPMorgan Chase & Co
- MedStar Health
- Monumental Sports & Entertainment
- McKinsey & Company
- Northrop Grumman Corporation

## AT A GLANCE

- 17 credit hour certificate program works with any major but specifically pairs with
  - BS in Data Sciences for Political Science
  - BS in Data Sciences for Justice, Law, & Criminology
- Participate in specific programming for students pursuing this certificate
- Access to unique internships with CoLAB businesses

## QUESTIONS?

### Contact

School of Public Affairs Student Services

202-885-6200

Email: [aupublicaffairs@american.edu](mailto:aupublicaffairs@american.edu)