



AMERICAN UNIVERSITY
WASHINGTON, D C

Department of Public
Administration and Policy

**STEM-Designated
Master of
Public Policy**



Mission Statement

The mission of the **AU STEM-Designated Master of Public Policy** program is to prepare students to advance the quality of policy making in a variety of institutional settings in the U.S. and abroad by instilling a blend of analytical, contextual, ethical, and substantive skills and knowledge.

Goals/Objectives - We will achieve our mission by preparing students to:

1. **Formulate and evaluate** public policy and communicate analysis effectively to relevant stakeholders.
2. **Address societal problems with policy analysis** in the context of political/policy processes in the U.S. and abroad.
3. **Improve the allocation of resources** using sound, evidence-based evaluation of the costs and benefits of policy alternatives.
4. **Incorporate a range of values** into policy analysis, including democratic/constitutional values, respect for the diversity of people and perspectives in the policy process, and ethical principles including commitment to upholding the public trust.

For the foreseeable future, the United States and other governments worldwide face the challenge of discerning how best to harness the energy and expertise of public servants, the passion and commitment of nonprofit organizations, and the dynamism and creativity of markets in the pursuit of democratic and constitutionally informed public purposes.

Through our teaching and unique location in Washington, D.C., we seek to help meet this challenge by enhancing the knowledge, professional skills, and leadership potential of our students in their public service careers.

We educate students entering, engaged in, and interacting with government agencies in the U.S. and abroad.

We treat administration and policy as interrelated subjects strongly influenced by the values of public service and democratic constitutionalism.

Through our research and civic involvement, we seek to enhance what is practiced and taught in our field.

We seek to attract a diverse group of talented students. We encourage their active involvement in learning, research, and professional activity and strive to enhance their appreciation of the responsibilities of public service.

STEM MPP Program Core

STEM MPP students take a total of 11 required courses (including a gateway course (Foundations of Policy Analysis, PUAD 606) at the beginning of the program and a capstone course (Policy Practicum, PUAD 688) at the end) plus 2 restricted electives (STEM focus required). The total program is comprised of 13 courses or 39 credit hours.

Students may test out of the basic statistics course (Quantitative Methods for Policy Analysis I, PUAD 601) via an online waiver exam administered before the program begins. Students with a B+ or better in STAT 202 or 203 or equivalent from their undergraduate institution may waive out of the PUAD 601 course, and students with a B+ or better in Intermediate Microeconomics or equivalent from their undergraduate institution may waive out of the Economics for Policy Analysis (PUAD 670) course. In both cases, this can only be done with consultation from their academic advisor and program director, and students must substitute other MPP course offerings in place of those required courses.

Required Courses:

1. PUAD 601 Quantitative Methods for Policy Analysis I (3 credits)
2. PUAD 602 Quantitative Methods for Policy Analysis II (3 credits) *(PUAD 601)
3. PUAD 603 Policy Process (3 credits)
4. PUAD 604 Public Program Evaluation (3 credits)
5. PUAD 606 Foundations of Policy Analysis (3 credits)
6. PUAD 617 Project Management (3 credits)
7. PUAD 631 Financing Government Services (3 credits) *(PUAD 630 or 670)
8. PUAD 670 Economics for Policy Analysis (3 credits)
9. PUAD 671 Cost Benefit Analysis (3 credits)
10. PUAD 672 Advanced Quantitative Methods for Policy Analysis (3 credits)
11. PUAD 688 Policy Practicum (3 credits)

*indicates prerequisite

Electives and Internship

Students take two elective courses (6 credits); options are listed on the following pages. Pre-service students are expected to complete an internship.¹ They may earn 3 credits by enrolling in the Internship Seminar (PUAD 691). This course replaces one elective course. Alternatively, students can complete a non-credit internship. Academic advisor approval is required for completing the internship requirement.

Capstone Experience

Assignments in the capstone course (Policy Practicum, PUAD 688), including a major policy analysis paper for a client and a “48-hour exercise,” fulfill the university requirement for a capstone experience. The capstone course should be taken in the final semester of study and is only offered during the Fall and Spring semesters.

¹ Students with significant professional experience may request to waive the internship requirement and should contact their advisor.

Restricted Electives

Each student is permitted to take several electives suited to their individual career goals. Students should consult department faculty and their academic advisor for help in selecting these courses. Interviews with alumni and practitioners may also help students identify suitable subjects.

Students must complete two courses (6 credit hours) in restricted electives (STEM focus required). This may include up to three credits of approved SAMI classes listed below. Students who waived out of a course will take additional electives in lieu of the waived course. In lieu of waived courses, students are permitted to take any course that would otherwise count as an MPP elective (including, but not limited to, the STEM MPP restricted electives).

Potential Courses/Recent Offerings:

- PUAD 685 Selected Topics:
 - Education and the American Policy System (3)
 - Environmental Sustainability and Public Policy (3)
 - Health Economics and Policy (3)
 - Public Policies for the Environment and Energy (3)

Courses not offered by the Department of Public Administration and Policy may not be offered regularly and are subject to change. Please consult your advisor if you are interested in taking one of these courses.

- CSC 604 Advanced Introduction to Coding (3)
- DATA 612 Statistical Programming in R (3)
- DATA 613 Data Science (3)
- ENV5 654 Geographical Information Systems (3)
- ENV5 655 Environmental Geographic Information Systems (3)
- ENV5 685 Remote Sensing: Environmental Measurement from Satellites and Drones (3)
- GOVT 618 Bayesian Statistics (3)
- ITEC 600 Programming Tools for Analytics: Python (3)
- ITEC 610 Applied Managerial Statistics (3)
- ITEC 620 Business Insights through Analytics (3)
- ITEC 621 Predictive Analytics (3)
- ITEC 660 Business Intelligence (3)
- ITEC 670 Database and Big Data (3)
- ITEC 724 Advanced Text Analytics with AI and Machine Learning (3)
- JLC 683 Cyber Threats and Security (3)
- JLC 696 Cybercrime and Public Policy (3)

Approved SAMI Courses

STEM-MPP students have the option to use 3 one-credit STEM related SAMIs toward their 6-credit elective requirement.

Below is a list of prior STEM related SAMIs that have been offered. New SAMIs are offered to keep up with the times, so if students find one that is not on this list, they must email their advisor for approval.

Students must register for the SPA-685-00X section to earn 1 credit.

- A Gentle Introduction to R
- A Gentle Introduction to Stata
- A Quick Introduction to Stata and R Statistical Software Packages
- Blockchain & Cryptocurrency 101: A Beginner's Guide
- Causal Inference 1: A Short Course (Friends Don't Let Friends Lie with Statistics)
- Cyber Policy 101: Key Issues, Primary Players, and Critical Management Issues
- How to Conduct Rigorous Qualitative Research
- Implementing & Evaluating Randomized Controlled Trials (RCT)
- Introduction to Stata and R Statistical Software Packages
- Principles of Geographic Information Science
- Skills for Success in the Cyber Interagency Process
- Telling Stories with IPUMS Data (How to Answer Questions and Inform Policy Debates with Publicly Available Survey Data)

Sample Full-Time Degree Plan

Below is an example of the schedule of courses one might take during their degree. Courses in red are required to be taken in the semester they are shown; all other courses are scheduled as recommendations and may be taken in a different order. Please speak to your academic advisor about your course plan and what options are available to you.

Please note that if you take PUAD 691 (Internship Seminar), this will replace one of the restricted electives.

1st Fall	1st Spring	Summer	2nd Fall	2nd Spring
PUAD 601: Quantitative Methods for Policy Analysis I	PUAD 602: Quantitative Methods for Policy Analysis II	PUAD 617: Project Management	**PUAD 604: Public Program Evaluation	PUAD 688: Policy Practicum
PUAD 606: Foundations of Policy Analysis	*PUAD 603: Policy Process		**PUAD 672: Advanced Quantitative Methods	***PUAD 671: Cost Benefit Analysis
PUAD 670: Economics for Policy Analysis	Restricted Elective		PUAD 631: Financing Government Services	Restricted Elective

*Can be taken any semester

**Can be taken any semester after completing PUAD 602

***Can be taken any semester after completing PUAD 670

Data Science Certificate

Students in our STEM MPP program may choose to pursue a graduate certificate in addition to their degree program. This is entirely optional, and students do not have to obtain any certificate to complete their master's degree program. If a student is interested in completing a certificate during their master's program, they should inform their academic advisor as soon as possible. Interested students must apply to the Data Science certificate by the final semester of their MPP degree. Both the certificate and the MPP must be completed concurrently. Interested students should discuss application details, timelines, and credit-sharing regulations with their advisor as early as possible in the process.

Credits from a student's MPP degree can also be applied to the certificate, and it is recommended that students interested in this certificate keep that in mind when planning their selected electives.

The Data Science certificate offered by the College of Arts and Sciences is designed to provide students with the core technical proficiencies to visualize and analyze data and build on your current knowledge to help you become a data scientist.²

Students entering the program without the appropriate background will be expected to complete the prerequisite coursework either before or during their program:

- STAT 614 Statistical Methods (3)

Core Requirements (12 credits):

- DATA 612 Statistical Programming in R (3)
- DATA 613 Data Science (3)
- STAT 615 Regression (3)
- STAT 627 Statistical Machine Learning (3)

² The program website can be found here: <https://www.american.edu/programs/shared/data-science/certificate.cfm>

Graduate Analytics Certificate

Students in our STEM MPP program may choose to pursue a graduate certificate in addition to their degree program. This is entirely optional, and students do not have to obtain any certificate to complete their master's degree program. If a student is interested in completing a certificate during their master's program, they should inform their academic advisor as soon as possible. Interested students should apply for the Graduate Analytics certificate by the final semester of their MPP degree. Both the certificate and the MPP must be completed concurrently. Interested students should discuss application details, timelines, and credit-sharing regulations with their advisor as early as possible in the process.

Credits from a student's MPP degree can also be applied to the certificate, and it is recommended that students interested in this certificate keep that in mind when planning their selected electives.

The Graduate Analytics certificate offered by the Kogod School of Business is designed to provide students with a suite of in-demand skills needed to solve organizational challenges, be an asset to your team, and stand out in the job market.³

Students without a proficiency in R must take a workshop offered by the Department of Information Technology and Analytics, either before or concurrently with ITEC 610.

Core Requirements (9 credits):

- ITEC 610 Applied Managerial Statistics (3)
- ITEC 620 Business Insights through Analytics (3)
- ITEC 621 Predictive Analysis (3)

Elective Options (3 credits):

- ITEC 600 Programming Tools for Analytics: Python (3)
- ITEC 623/MGMT 623 Organizational and Social Network Analytics (3)
- ITEC 660 Business Intelligence (3)
- ITEC 668 Cybersecurity Analytics (3)
- ITEC 670 Database and Big Data (3)
- ITEC 724/SIS 724 Advanced Text Analytics with AI and Machine Learning (3)

³ The program website can be found here: <https://kogod.american.edu/programs-admissions/certificates/graduate-analytics>