



AMERICAN UNIVERSITY
WASHINGTON, D C

Department of
Public Administration and Policy

**STEM-Designated
Master of
Public Administration**



Mission Statement

The mission of the **AU STEM-Designated Master of Public Administration** program is to instill the knowledge, skills, especially advanced quantitative skills, and values necessary to manage and lead with distinction in government and related organizations that serve the public good in the U.S. democratic context and abroad.

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

1. **Apply acquired knowledge** about administration, management, and leadership in contemporary public and related organizations and systems.
2. **Allocate administrative and programmatic resources** based on analytic decision making and advanced quantitative methods.
3. **Analyze administrative problems, craft solutions**, and communicate them effectively to relevant stakeholders.
4. **Incorporate a range of values** into administrative actions, including democratic/constitutional values, respect for the diversity of people and perspectives in the policy process, and administrative values such as responsiveness, accountability, effectiveness, and equity.

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.

DISCLAIMER: Students should check the current American University catalog for any changes to degree requirements or course offerings, as well as consult their academic advisors, before finalizing any plan of study.

STEM MPA Program Core

STEM MPA students take a total of 11 required courses (including a gateway course (Introduction to Public Administration and Democracy, PUAD 612) at the beginning of the program and a capstone course (Public Administration Capstone, PUAD 610) 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 or Quantitative Methods for Public Managers, PUAD 605) 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 601/605 course, and students with a B+ or better in Intermediate Microeconomics or equivalent from their undergraduate institution may waive out of the Public Economics course (Public Managerial Economics, PUAD 630 / Economics for Policy Analysis, PUAD 670). In both cases, this can only be done with consultation from their academic advisor and program director, and students must substitute other MPA course offerings in place of those required courses.

Required Courses:

1. PUAD 612 Introduction to Public Administration and Democracy (3 credits)
2. PUAD 605 Quantitative Methods for Public Managers (3 credits) **OR**
PUAD 601 Quantitative Methods for Policy Analysis I (3 credits)
3. PUAD 602 Quantitative Methods for Policy Analysis II (3 credits) *(PUAD 601 or 605)
4. Advanced Quantitative Elective (3 credits) - Choose one:
PUAD 604 Public Program Evaluation (3 credits) *(PUAD 602) **OR**
PUAD 672 Advanced Quantitative Methods for Policy Analysis (3 credits) *(PUAD 602)
5. PUAD 617 Project Management (3 credits)
6. PUAD 630 Public Managerial Economics (3 credits) **OR**
PUAD 670 Economics for Policy Analysis (3 credits)
7. PUAD 633 Budgeting and Financial Management (3 credits) **OR**
PUAD 631 Financing Government Services (3 credits) *(PUAD 630 or 670)
8. PUAD 640 Program Performance Evaluation and Management (3 credits) *(PUAD 601 or 605)
9. PUAD 641 Public Policy Implementation and Management (3 credits)
10. PUAD 671 Cost Benefit Analysis (3 credits) *(PUAD 630 or 670)
11. PUAD 610 Public Administration Capstone (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 (Public Administration Capstone, PUAD 610) 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 MPA elective (including, but not limited to, the STEM MPA 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)
- ENSC 655 Environmental Geographic Information Systems (3)
- ENV5 654 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 639 Cybercrime and Public Policy (3)
- JLC 683 Cyber Threats and Security (3)

Approved SAMI Courses

STEM MPA 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 (or PUAD 605)	PUAD 602: Quantitative Methods for Policy Analysis II	*PUAD 617: Project Management	*PUAD 641: Public Policy Implementation and Management	PUAD 610: Public Administration Capstone
PUAD 612: Introduction to Public Administration and Democracy	**PUAD 640: Program Performance Evaluation and Management		***PUAD 672: Advanced Quantitative Methods (or PUAD 604)	+PUAD 671: Cost Benefit Analysis
PUAD 670: Economics for Policy Analysis (or PUAD 630)	Restricted Elective*		*PUAD 633: Budgeting and Financial Management	Restricted Elective*

*Can be taken any semester

**Can be take any semester after completing PUAD 601/605

***Can be taken any semester after completing PUAD 602

+Can be taken any semester after completing PUAD 630/670

Data Science Certificate

Students in our STEM MPA 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 STEM MPA degree. Both the certificate and the STEM MPA degree 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 STEM MPA 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.

In order to pursue a graduate certificate in addition to the STEM MPA degree program, students need to complete one additional course (3 credits) beyond the 39 credits required for the master's degree, for a total of 42 credits.

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 Business Analytics and AI Certificate

Students in our STEM MPA 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 Graduate Business Analytics and AI certificate by the final semester of their STEM MPA degree. Both the certificate and the STEM MPA degree 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 STEM MPA 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.

In order to pursue a graduate certificate in addition to the STEM MPA degree program, students need to complete one additional course (3 credits) beyond the 39 credits required for the master's degree, for a total of 42 credits.

The Graduate Business Analytics and AI 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>