Virginia Polytechnic Institute and State University
Graduate Certificate

Name of Certificate
Urban Planning Analytics

Department/College
College of Architecture and Urban Studies, School of Public and International Affairs, Urban
Affairs and Planning

CIP Code
04.0301

Initiation Date
Fall 2021

Date of First Graduates
Fall 2021

Description of Certificate
The Graduate Certificate in Planning Analytics is designed to teach students how to use
computer-based methods to analyze data as part of the urban planning process. Students will
learn about urban data (e.g., data related to air and water quality, water availability, waste
disposal issues, high energy consumption) sources and how to use the most appropriate data
analysis techniques (e.g., spatial analysis, geographic information systems) depending on the
type of data and the situation. Students will also learn to take into account the impacts of public
policies and political, economic, and cultural perspectives on urban planning. Graduates will be
able to support the urban planning process by using quantitative and qualitative tools to analyze
data from an urban environment.

Target Audience
This certificate will have two target audiences, 1) graduate students that are currently enrolled
in a graduate degree program related to urban planning and policy (e.g., Urban Affairs and
Planning, Public Administration and Public Affairs), and 2) current public administration or
urban affairs professionals in organizations that use data from urban environments to support
planning and policy development.

Time to Complete
Full-time and part-time students may enroll in the certificate program. Degree-seeking students
may take courses in conjunction with their regular course load. Students attending full-time can
complete the certificate in a minimum of one academic year (two semesters) and a maximum of
three academic years (six semesters). Degree-seeking students attending part-time can complete
the certificate in approximately two academic years (four semesters) and a maximum of four
academic years (eight semesters).

Non-degree seeking, full-time students can complete the certificate in a minimum of one

academic year (two semesters). Non-degree seeking, part-time students, taking one course per semester, can complete the certificate in two academic years (four semesters).

Admission
All students will be required to apply to the certificate program. The admission requirements will be based on enrollment status at the institution.

Degree-seeking students will:
- Submit a Graduate Certificate Application
- Possess a bachelor's degree from an accredited institution with a GPA of 3.0 or better

Non-degree seeking students will:
- Submit a Graduate School Application for Admission and pay the fee
- Submit a Graduate Certificate Application and pay the fee
- Submit official undergraduate transcripts demonstrating bachelor's degree conferral
- Possess a bachelor's degree from an accredited institution with a GPA of 3.0 or better

Students who have not earned a degree in the United States must submit:
- Test of English as a Foreign Language (TOEFL) minimum score of 90 on the internet-based test (iBT) or the International English Language Testing System (IELTS) with a minimum score of 6.5
- TOEFL scores of 20 or greater in Listening, Writing, Speaking, and Reading subsections.

Curriculum Requirements and Description
The curriculum requires coursework in the quantitative and qualitative techniques needed to analyze data that is commonly used in urban planning. Students will learn how to conduct statistical analyses using urban data and how to create reports that present the data analysis in meaningful ways (e.g., data visualizations). Students will also gain an understanding of urban policy processes.

Course Descriptions

Required courses:
UAP 5114: Computer Applications in Urban Planning and Management (3 credits)
An examination of a wide range of computer-based techniques that are of value in analyzing urban and regional planning and management problems. Techniques include statistical and spatial analysis, Geographic Information Systems, and data visualization.

UAP 5224: Planning Methods and Technologies (3 credits)
Quantitative and qualitative methods pertaining to urban and regional planning and analysis; types of data, data sources and data preparation; survey research; technologies for urban planning and analysis; ethics in planning methods.

UAP 5494: Advanced Quantitative Techniques for Urban Research (3 credits)
Advanced quantitative techniques used in urban analysis. Application of the methods to situations encountered in urban planning, urban policy analysis, and urban management are

stressed.

UAP 5564: Information Technology, Society, and Public Policy (3 credits)
Social impacts of new and emerging information technologies from a public policy perspective. Technical nature of IT and influences of IT on four core dimensions of society: political, economic, cultural, and spatial. Course integrates theoretical and philosophical literature on IT with applied policy and urban planning issues.

Electives:
Or, on a case-by-case basis, approved elective course (limit of 3 credit hours substitution).

Faculty Credentialing
Faculty appointments in the certificate program are established by the Director of the School of Public and International Affairs, housed in the College of Architecture and Urban Studies. Two faculty members from the School of Public and International Affairs will teach in the certificate program.

Minimum requirements for faculty teaching in this certificate include:
- A Master's or terminal degree in public and international affairs, urban and regional planning; or a related field; and
- Two years of teaching or course development experience.

No adjunct faculty will be needed to initiate the certificate program.

Contact Information
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Affiliated Faculty
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Theo Lim, Assistant Professor UAP/SPIA
Tom Sanchez, Professor UAP/SPIA

Course Delivery Format
This certificate program will be conducted in traditional, face-to-face and via distance learning (online) formats. All required courses are offered in face-to-face and fully online formats. Thus, both physical space, hardware, and software to facilitate synchronous and asynchronous online sessions are required. The university has adequate classroom and lab space. The university utilizes Canvas to deliver content and Zoom for face-to-face discussions and presentations. The university provides help desk service 24/7 for all technical issues. The university has advanced

infrastructure and active support for online curricular delivery though Technology-enhanced Learning and Online Strategies (TLOS). All faculty members providing online instruction are fully supported by TLOS. In addition to training on specific hardware and service applications (Zoom, WebEx, and/or Echo360 lecture capture), TLOS ensures that any instructional design, course development, and assessment needs are supported by the appropriate distance education teams. The university has sufficient resources to deliver the certificate program.

Resources

Resources required to initiate and sustain this certificate program include existing resources to support current programs such as student support services (e.g., enrollment, help desk, and library); faculty support services (e.g., copying and contracts); and general administration (e.g., budgeting and forecasting). More specific program administration is required to maintain contacts with associations and involvement in appropriate networking events as well as conduct periodic program reviews to ensure the program is kept current with industry trends and market needs. A faculty member from the School of Public and International Affairs will incorporate the administration duties and responsibilities in their current workload. Faculty time to teach the courses will be included in existing teaching loads. No new positions will be created to initiate the certificate. The university has sufficient resources to initiate and sustain this certificate program.

Gainful Employment

The Urban Planning Analytics certificate is not a gainful employment program and will not come under gainful employment regulations. Students in the certificate program will not be eligible to receive Title IV funding.