UNIVERSITY OF GEORGIA

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University Council

March 19, 2021

UNIVERSITY CURRICULUM COMMITTEE – 2020-2021
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Undergraduate Student Representative – Jeremiah de Sesto
Graduate Student Representative – Gerena Walker

Dear Colleagues:

The attached proposal from the School of Public and International Affairs to offer a new Undergraduate Certificate in Data Analytics in Public Policy will be an agenda item for the March 26, 2021, Full University Curriculum Committee meeting.

Sincerely,

John Maerz, Chair
University Curriculum Committee

cc: Provost S. Jack Hu
        Dr. Rahul Shrivastav

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UNIVERSITY OF GEORGIA

February 2, 2021

Office of Instruction
University of Georgia
New College
Athens, GA 30602

To UGA Curriculum Systems:

In the 2018-19 academic year, President Morehead announced a new commitment to data literacy and intensive writing across UGA's undergraduate curricula. At that time, SPIA pledged to promote data-intensive learning in the school's undergraduate coursework, and in particular, in Political Science. An outgrowth was the Bachelor of Science in Political Science degree program which became available to students in AY 2019-20. The Department of Political Science also pledged to develop a certificate program for undergraduates focusing on data analytics in public affairs. Specifically, the certificate would develop knowledge and skills in the collection, management, visualization, and analysis of data pertinent to politics and public policy. The proposed Certificate in Data Analytics in Public Policy is the realization of these aims, and SPIA is pleased that it draws on contributions from all three of the school's academic departments: International Affairs, Political Science, and Public Administration and Policy.

Data literacy is increasingly important in countless areas of study and in myriad professions. In public and international affairs, understanding how to collect, analyze, critique, and present data is essential across all of the fields and concentrations we teach at SPIA. The proposed Certificate in Data Analytics in Public Policy is designed to improve the data literacy skills of students who are interested in politics and public policy – whether to study voting preferences and patterns, assess the scale and scope of policy gaps and inequities, examine behaviors of government officials, or evaluate programs and their impacts. SPIA expects that its own students will be primary consumers of the new certificate. The school also expects that students in other colleges and schools, who have an interest in data-intensive dimensions of politics, international affairs, and public policy, will enroll in this 18-credit hour certificate (or up to 27-credit hours if students opt for the capstone experience).

We are excited to begin offering this certificate program which advances the President's and Office of Instruction's efforts to promote data literacy across the University's undergraduate curricula.

Please contact us for questions about this proposal, and thank you for considering it.

Sincerely,

_____   _____
Scott H. Ainsworth   Matthew Auer
Department Head   Dean and Arch Professor
Political Science   School of Public and International Affairs

<p style="text-align: center;">**PROPOSAL FOR A CERTIFICATE PROGRAM**</p>

Date: February 2, 2021

School/College/Unit: School of Public and International Affairs

Department/Division: Political Science

Certificate Title: Undergraduate Certificate in Data Analytics in Public Policy

Effective Term: Fall 2021

Which campus(es) will offer this certificate? Athens

Level: Undergraduate

Program Abstract: This proposed certificate program will provide undergraduate students with the knowledge and skills needed to pursue 21st century careers in data analytics in public policy by providing enhanced training in data collection, data management, data visualization, and data analysis and interpretation with respect to public policy, in particular, and the social sciences, more generally. Such a program of study would open many doors in the private, public, and nonprofit sectors to students graduating from the School of Public and International Affairs' (SPIA) baccalaureate programs. The proposed certificate program would require students to complete coursework focused on specialized quantitative methods commonly used by analysts in all sectors of the economy, as well as placing these students on an advanced track to post-secondary education. Professional standards have changed considerably over the past few decades and the department sees this certificate program as an opportunity to supply students with the skills and training in demand for modern analyst jobs, academia, and similar positions in which applied data analytic skills are necessary across all industries and sectors.

1. Purpose and Educational Objectives
   State the purpose and educational objectives of the program. How does this program complement the mission of the institution?

   This proposed certificate program will provide undergraduate students with knowledge, applied analytic training, and experiential learning opportunities in quantitative social science and public policy research. For all intents and purposes, the faculty of the School of Public and International Affairs (SPIA) engage in the use of sophisticated analytic techniques and methods in pursuit of their research agendas. In addition to offering the traditional substantive political science coursework to students, this proposed certificate would integrate an enhanced methodological training by practitioners for students to pursue careers in public policy and government relations, as well as pursuing advanced degrees in

the social sciences. The certificate is targeted to students in SPIA but would be open for all university students to apply, as this area is of great interest to students from a variety of academic units on campus. Indeed, data analytics is one of the fastest growing areas of workforce demand in the modern economy, and new methodology courses are regularly created to keep students up to date with ever-increasing standards.

Moreover, this certificate program will provide greater opportunities for collaboration between undergraduate students and faculty. One of the greatest limitations in recruiting undergraduate students into research assistantships is their limited background and training in data collection, management, and analysis. The coursework covered in this certificate program will not only contribute to student success in their own research efforts, but will further qualify students to complete many of the common tasks social science researchers carry out on a day-to-day basis as they pursue their own research agendas. The research assistantship option will further serve as an experiential learning opportunity in which students will be able apply their training in service to the university.

As the flagship university, and a university with a tremendous reputation, the students and graduates of SPIA are disproportionately overrepresented throughout the state of Georgia's policy making apparatus. From the state bureaucracy to the state legislature, the governor's office, county and municipal governments, political parties and interest groups, and even Congress, SPIA students are already actively recruited by candidates, public officials, and interests around the state and nation. This proposed certificate program will augment students' skillset in a very modern, data-oriented direction that will create further opportunities for students and graduates, as well as contribute a more data-oriented approach for the state's public officials and policy making bodies. Finally, this program strongly complements the University's initiative to create extraordinary learning opportunities for students by "increase(ing) student success and readiness for careers or graduate school" (UGA Office of Senior VP of Academic Affairs and Provost, press release, April 16, 2014).

2. Need for the Program

This certificate program will set the students and graduates apart from their contemporaries graduating from other institutions. Political science, international affairs, and public administration are popular majors at most universities, but very few provide training in applied data analysis beyond a single introductory course. As such, graduates of these programs largely enter the workforce and academia unable to collect, manage, visualize, analyze, and interpret data in a meaningful way or with the level of competency necessary to answer the policy questions made by public officials, private actors, and the public itself. The department intends for this proposed certificate program to bridge this gap between what the 21st century economy and policy world demand and the supply of college graduates produced in SPIA.

Additional Information:
   a. **Semester/Year of Program Initiation:** Fall 2021
   b. **Semester/Year of Full Implementation of Program:** Fall 2021

c. **Semester/Year First Certificates will be awarded:** Fall 2023
d. **Annual Number of Graduates expected:** approximately 20 to 30
e. **Projected Future Trends for number of students enrolled in the program:**
    Currently, the department plans to cap enrollment at 25 students per year. This
    number and use of a cohort model may be amended in the future should demand
    outpace expectations.

3. Student Demand
   a. **Provide documentation of evidence of student demand for this program, which may include a student survey.**
   b. **Provide evidence that demand will be sufficient to sustain reasonable enrollment.**

   Each year, the Department of Political Science conducts an end-of-year student survey. Faculty originally began planning this certificate program in 2017, and included an item on the end- of-year surveys for both the 2016-2017 and the 2017-2018 academic years asking students about their level of interest in having more coursework opportunities in data analytics and a bachelor of science in political science degree option. In the 2017 survey (n=215), 26.18% (n=72) of undergraduate students indicated that they had "quite a bit" of interest in such courses and the degree option, while 45.82% (n=126) indicated they had "some" interest . The 2018 survey (n=122) saw a majority of students interested in more course offerings focused on data analytics: 22.95% (n=28) had "quite a bit" of interest and 31.15% (n=38) had "some" interest.

   Beyond these surveys, there has clearly been interest in taking courses focused on quantitative methodology. The department has been offering more courses in methodology, these classes fill to capacity very quickly, and the waitlists each semester are getting longer. Social science students are not afraid of math and statistics the way they were 20 years ago. Current students envision themselves working for Google, Facebook, and Amazon, for Gallup, Pew Research, and RAND, for the Congressional Research Service, the State Department, and international NGOs. These students know the traditional pre-law path does not provide the training they need to land analyst jobs in the government relations departments of our planet's biggest, most successful companies, or in the policy-making bodies of governments around the world.

   c. **To what extent will minority student enrollments be greater than, less than, or equivalent to the proportion of minority students in the total student body?**

   The department expects to represent the diversity of the student body at the University, and hopefully exceed it. SPIA is modestly more representative of racial and ethnic minorities compared to the University as whole, and significantly more female. The department does not expect any particular racial/ethnic/gender bias against pursuing a certificate program focused on data analytics in public policy and, as such, expects the program to be at least as representative of these demographic groups on campus.

4. Program of Study

Entrance Requirements: To be admitted, a student must have completed 30 credit hours, including POLS 1101 and one upper division studies course in POLS, INTL, or PADP, and have a GPA must be 3.2 or higher. As part of the application, a student must submit an essay (of not more than 500 words) to explain their interest in the certificate program.

Courses and Curriculum: Historically, SPIA has offered a handful of methodology classes that the department intends to incorporate as components of this certificate program. Over the past two years, several new courses have been developed with this certificate program in mind, and with the goal of providing more specialized and, in some cases, more advanced methodological training for undergraduate students. This program of study offers students a well- rounded data science and policy curriculum, flexibility, and the opportunity to tailor their experience to fit their academic interests and goals.

Certificate of Data Analytics in Public Policy (18 hours):

Introductory Studies (choose one of the following for 3 hours):
POLS 2000, Introduction to Political Science (3 hours)
PADP 3100, Introduction to Policy Analysis (3 hours)

Policy Studies (choose one of the following courses for 3 hours):
INTL 4250, American Foreign Policy (3 hours)
INTL 4260, Foreign Policy Decision Making (3 hours)
INTL 4415, Practicum - Methods and Training in Security Studies (3 hours)
INTL 4430, United States National Security Policy (3 hours)
INTL 4450, Global Security Policy (3 hours)
PADP 4650, Policy Process (3 hours)
POLS 4705, Law and Politics of Public Land (3 hours)

Core Quantitative Studies (choose one of the following for 3 hours):
INTL 4000, Research Design and Quantitative Analysis in International Affairs (3 hours)
POLS 4150, Research Methods in Political Science (3 hours)
PADP 4660, Program Evaluation (3 hours)

Methodology Electives - Students pursuing the Capstone Experience should complete two of the following courses (for 6 hours,) whereas students not pursuing the Capstone Experience option should complete three of the following courses (for 9 hours):
POLS 3220, Introduction to Modeling in Political Science (3 hours)
POLS 3230, Political Analysis in R (3 hours)
POLS 4156E, Online Political Research and Analysis (3 hours)
POLS 4155, Analyzing Political Behavior (3 hours)
POLS 4641, The Science of Cities (3 hours)

INTL 2002, Networks in International Affairs (3 hours)
INTL 4004E, Data Analytics for International Policy (3 hours)
INTL 4005, Social Experimentation Around the World (3 hours)
INTL 4006, Qualitative Methods for International Affairs and Policy (3 hours)

Capstone Experience Option - Students pursuing the capstone option must complete one of the following opportunities (for 3 - 12 hours). To be admitted to the Capstone Experience, students must have completed at least three (3) courses in the certificate program, one of those being their Core Quantitative Studies course. Students will be expected to coordinate the parameters of their Capstone Experience with a faculty supervisor:

INTL 4960R, Faculty-Mentored Undergraduate Research I (1-6 hours)
INTL 4990R, Undergraduate Research Thesis (or Final Project) (1-6 hours)
POLS 4960R, Faculty-Mentored Undergraduate Research I (1-6 hours)
POLS 4990R, Undergraduate Research Thesis (or Final Project) (1-6 hours)

5. Model Program and Accreditation

a. **Identify any model programs, accepted disciplinary standards, and accepted curricular practices against which the proposed program could be judged. Evaluate the extent to which the proposed curriculum is consistent with these external points of reference and provide a rationale for significant inconsistencies and differences that may exist.**

As stated above, very few social science programs offer undergraduates this kind of education and training. The department has primarily focused on Dartmouth's Quantitative Social Science program, the University of Michigan's Quantitative Methods in the Social Sciences program, and the University of Iowa's Social Science Analytics certificate program as general outlines of what kinds of coursework students will pursue in this program. This certificate does deviate from some of these programs in a noticeable way: Iowa and Michigan's programs, for example, are heavy on traditional training in statistics and econometrics, but SPIA would like to focus more on newer/cutting edge methodological approaches. While statistical training is a component to each of the classes offered in this proposed certificate program, this program intends to train students in more specialized approaches to collecting and analyzing data best suited to the variety of tasks demanded in the workplace and in academia. For example, this certificate offers a behavioral analysis course designed to focus on the unique data challenges and analytic methods used for studying and understanding human behavior. As another example, the department will be offering a course in network analysis that will train students how to model and analyze data produced by interconnected social, political, and economic actors which take on a different set of assumptions than many of the traditional methods.

b. **If program accreditation is available, provide an analysis of the ability of the program to satisfy the curricular standards of such specialized accreditation.**

No accreditation is available or required for this proposed certificate program.

All classes included in this proposed certificate program have been created and proposed by faculty who wish to teach these courses to undergraduate students. As a certificate program, faculty will be able to coordinate student learning to produce a well-rounded, comprehensive program of study and further incentivize student participation by not extending their time to graduation.

6. Student Learning Outcomes

The general objective of this certificate program is to provide enhanced education and training in data analytics. Because there are many combinations of classes that students will be able to complete to fulfill the requirements of the proposed certificate program, the educational outcomes students experience will vary. Regardless of which courses students take to fulfill these requirements, however, all students successfully completing this program will have been trained in: the collection of original observational and experimental data; the proper measurement of institutional and individual behavior and activity; the development of statistical models of these phenomena; the management and operationalization of data that has been archived/collected in a raw form; the proper statistical techniques for analyzing data in various forms; the interpretation of statistical results from a variety of data and analytic techniques; data visualization; and the presentation of complex analysis in a way that audience members from diverse backgrounds are able to understand.

7. Assessment

The above listed learning outcomes are common across the many classes offered in this proposed certificate program. As such, the assessment of these learning outcomes is inherently embedded in the successful completion of each class through the completion of course assignments, research papers, and exams.

Beyond in-class assessment, the program of study also includes an optional capstone experience designed to simultaneously assess what the students have learned over the course of their studies and to offer the students an experiential learning opportunity.

University Curriculum Committee Proposal Feedback Form

Proposal Information

Proposal: Undergraduate Certificate in Data Analytics and Public Policy

School/College: School of Public and International Affairs

Department: Political Science

Respondent Information

School/College: College of Family and Consumer Sciences

Department:

Date Submitted: 3/15/21

Submitted by: Sheri Worthy, Associate Dean for Academic Programs
                              (name)   *(title)*

Feedback:

(Please provide your response below or attach to this sheet and return)

There are numerous "analytics" programs across UGA campus (MS in business analytics in Terry, concentration in business analytics, master's and bachelor's emphasis in Applied Consumer Analytics in FACS, graduate certificate in media analytics in Grady, maybe others…) and nearly 60 courses with "analytics" as the keyword. It appears that a student could complete this Certificate in Data Analytics and Public Policy without taking any "analytics" courses, depending on what methodology electives they choose. For example, if they chose POLS 2000, PADP 4650, PADP 4660, INTL 4006, POLS 4641, and INTL 4960R, I'm not sure the student would get an adequate analytics background.

If this is the case, I recommend renaming the certificate to something like "Certificate in Public Policy Analysis" or revising the requirements to include analytics courses, perhaps considering adding analytics courses from across campus to make the certificate more interdisciplinary. For example, FHCE 5150/7150 Consumer Analytics: Evidence-Based Policy would be a good course to consider adding.

University Curriculum Committee Proposal Feedback Form

Proposal Information

Proposal: <u>Undergraduate Certificate in Data Analytics and Public Policy</u>

School/College: <u>School of Public and International Affairs</u>

Department: <u>Political Science</u>

Respondent Information

School/College: <u>College of Engineering</u>

Department: <u>College of Engineering</u>

Date Submitted: <u>March 16, 2021</u>

Submitted by: <u>Ramaraja Ramasamy</u>   <u>Associate Dean of Academic Affairs</u>
             (name)   *(title)*

Feedback:

There are some concerns about the overlap/portability of courses in this certificate program with the existing Informatics Certificate program. Following are the comments from School Chair Dr. Fred Beyette: *"I completely understand the suggested need for this certificate program. My only concern is that it might cause some confusion over the difference between the proposed certificate program and the undergraduate certificate in Informatics as applied to the application of Public Policy. As you may be aware, the Informatics Certificate is designed to provide any student at UGA with a foundation in data analytics that is then tailored for application into the application space of the student's major discipline. While the Informatics Certificate does not currently have a detailed path for the application of Data Analytics to Public Policy it is unclear why one couldn't be created to work seamlessly with Informatics certificate rather than specifically outside of the Informatics certificate. If the department of Political Science is not amenable to working with the GII to creating something that works seamlessly with the Informatics Certificate, then I would suggest that they rename their proposed certificate to "Undergraduate Certificate in Data Analytics for Public Policy". I think this would more effectively tie the data analytics techniques covered in the certificate to the application area of Public Policy while distancing it from the perception that they are cobbling together data analytics content that is currently taught in the Informatics Certificate and public policy content that is taught in the department of Political Science."*

Respondent Information

School/College: <u>College of Engineering</u>

Department: <u>College of Engineering</u>

Date Submitted: <u>March 16, 2021</u>

Submitted by: <u>Kyle Johnsen</u>   <u>Director of the Georgia Informatics Institutes</u>
                    (name)   *(title)*

Feedback:

<u>Recommendation to rename the certificate "Data Analytics in Public Policy", if appropriate.</u>

Respondent Information

School/College: <u>Engineering</u>

Department: <u>ECAM</u>

Date Submitted: <u>15 March 2021</u>

Submitted by: <u>Ernest W Tollner</u>   <u>Prof and Chair of ENGR Curriculum Committee</u>
                    (name)   *(title)*

Feedback:

(Please provide your response below or attach to this sheet and return)

<u>Data analytics has grown beyond the statistics, computer science, and engineering disciplines. The citing of programs in Dartmouth, the University of Michigan and the University of Iowa suggests that Georgia is probably limited by not highlighting the data analytics capability that we evidently currently have. On that basis I am tentatively supportive. A caveat to this support is a seeming lack of coursework in rigorous data analytics in the plan of study.</u>

Documentation of Approval and Notification

Proposal: Undergraduate Certificate in Data Analytics in Public Policy

College: School of Public and International Affairs

Department: Political Science

Proposed Effective Term: Fall 2021

Department:
- Political Science Department Head, Dr. Scott Ainsworth, 2/2/21

School/College:
- School of Public and International Affairs Dean, Dr. Matthew Auer, 2/2/21

Proposal Notification:
- College of Agricultural and Environmental Sciences Dean, Dr. Nick Place, 3/15/21
- College of Agricultural and Environmental Sciences Associate Dean, Dr. Josef Broder, 3/15/21
- College of Agricultural and Environmental Sciences Assistant Dean, Dr. Douglas Bailey, 3/15/21
- Franklin College of Arts and Sciences Dean, Dr. Alan Dorsey, 3/15/21
- Franklin College of Arts and Sciences Associate Dean, Dr. Jean Martin-Williams, 3/15/21
- Terry College of Business Dean, Dr. Benjamin Ayers, 3/15/21
- Terry College of Business Associate Dean, Dr. Henry Munneke, 3/15/21
- Odum School of Ecology Dean, Dr. John Gittleman, 3/15/21
- Odum School of Ecology Associate Dean, Dr. John Drake, 3/15/21
- Mary Frances Early College of Education Dean, Dr. Denise Spangler, 3/15/21
- Mary Frances Early College of Education Associate Dean, Dr. Stacey Neuharth-Pritchett, 3/15/21
    - *No concerns with proposal*
- College of Engineering Dean, Dr. Donald Leo, 3/15/21
- College of Engineering Associate Dean, Dr. Ramaraja Ramasamy, 3/15/21
    - *Provided feedback*
- College of Engineering Curriculum Committee Chair, Dr. Ernest Tollner, 3/15/21
    - *Provided feedback*
- College of Environment and Design Dean, Dr. Sonia Hirt, 3/15/21
- College of Environment and Design Associate Dean, Ms. Ashley Steffens, 3/15/21
- College of Family and Consumer Sciences Dean, Dr. Linda Kirk Fox, 3/15/21
- College of Family and Consumer Sciences Associate Dean, Dr. Sheri Worthy, 3/15/21
    - *Provided feedback*
- Warnell School of Forestry and Natural Resources Dean, Dr. Dale Greene, 3/15/21
- Warnell School of Forestry and Natural Resources Associate Dean, Dr. Robert Bringolf, 3/15/21
- Grady College of Journalism and Mass Communication Dean, Dr. Charles Davis, 3/15/21
- Grady College of Journalism and Mass Communication Associate Dean, Dr. Maria Len-Rios, 3/15/21

- School of Law Dean, Mr. Peter "Bo" Rutledge, 3/15/21
- School of Law Associate Dean, Mr. Randy Beck, 3/15/21
- College of Pharmacy Dean, Dr. Kelly Smith , 3/15/21
- College of Pharmacy Assistant Dean for Student Affairs, Dr. Duc Do, 3/15/21
- College of Public Health Dean, Dr. Marsha Davis, 3/15/21
- College of Public Health Associate Dean, Dr. Erin Lipp, 3/15/21
- School of Public and International Affairs Dean, Dr. Matthew Auer, 3/15/21
- School of Public and International Affairs Associate Dean, Dr. John Maltese, 3/15/21
- School of Social Work Dean, Dr. Anna Scheyett, 3/15/21
- School of Social Work Associate Dean, Dr. Shari Miller, 3/15/21
- College of Veterinary Medicine Dean, Dr. Lisa Nolan, 3/15/21
- College of Veterinary Medicine Associate Dean, Dr. Andrew Parks, 3/15/21