

Proposal for Government Concentration Programs

The Strategic Plan Committee proposes piloting two undergraduate "programs," which allow students to take courses organized by a theme, and offer co-curricular programming for students participating in these programs.

Many Government concentrators already take clusters of courses connected by a common theme. We think the department can help students in identifying themes that cut across our traditional subfields and courses outside our department that complement our own courses. These programs would cut across a number of fields and concentrations and would, therefore, provide a focus that cannot be provided by secondary concentrations. Additionally, these programs could strategically align with additional funding, leadership, and employment opportunities for our students and department. Such programs would be examples of a "Responsive Curriculum."

For an example of a themed program, consider the Safra Center for Ethics Undergraduate Program. Students select from a curated list of courses, and attend public lectures, small seminars, and dinners with faculty affiliates of the Center. It is this mix of carefully chosen courses (both within our department, but just as importantly, beyond) and supplemental events that we hope will build smaller communities of students, who hail from diverse methodological backgrounds but share a common commitment to normative inquiry.

We therefore propose introducing themed programs to give students the option of taking a collection of courses that tie together their coursework experience, offer co-curricular programming that supplements their coursework and connects them to other students who share their interests, and attract students who want to connect Gov with other concentrations, such as Computer Science. These programs will not only guide students in their curricular choices, but will also provide a valuable signal that they have acquired a certain set of skills or training with their Government degree.

This proposal requires little administrative oversight. We are not proposing a certificate program or an official track that would appear on a student's transcript. FAS now encourages departments to offer non-certificate programs that are relevant to a broader set of undergraduates, but avoid the need for approval at the highest levels of the University.

What it is not:

1. This proposal makes no changes to the course requirements of the Government Concentration.
2. Our proposal is distinct from traditional departmental tracks, which are required for concentrators and correspond to the usual departmental subfields.
3. It is also distinct from secondary concentrations, which require 5 or 6 courses in another department, usually chosen randomly by the student.

The space for programs:

1. Includes courses that ideally cross sub-fields.
2. Includes courses outside our department that work in concert with our in-house courses.

Rationales

1. These programs are entirely optional, preserving our flexible curriculum while allowing students to specialize.
2. Integrates the curricular and “co-curricular” experience, with selected programming for members of a program, including alumni panels, invited talks, “field trips.”
3. These programs highlight strengths that may not be apparent to undergraduates. We anticipate that some students who are interested in politics and policy, and who might otherwise concentrate in statistics or computer science (now the second largest concentration at the college) would choose Government if we provided a clear curricular focus and informal networking and research connections.

Potential Programs

Below we discuss two programs that have been put together.

Other Programs can be added in the future. An obvious first additional program would be Public Policy, which would fit with student interests and faculty strengths. In addition to existing Gov courses that include policy themes, the program could fold in courses offered at HKS, which many of our students already take. Gov faculty currently teaching in the joint FAS/HKS Social Policy Program would be a natural fit to lead this program. Additional examples include race, ethnicity, and politics.

Two Pilots

Below we discuss two pilots that capitalize on opportunities from the strategic plan that suggest potential future programs. Both have been discussed with the chairs of Statistics and Computer Science who were both enthusiastic.

Data Science.

Data science is a rapidly growing field that can mean many things to many people, but in its most common form, it is essentially applied quantitative social science. Political science generally and political methodology specifically have a long track record of innovating and applying to politics the core techniques of data science. The department’s strategic vision report highlighted our commitment to expand our department in the field of “computational social

science,” which can be thought of as the social science corner of data science. In that report, the department recognized that our curriculum could also benefit from the introduction of more of these ideas and a Data Science Program in our department would go a long way toward implementing that vision.

A Data Science Program within the undergraduate curriculum would provide an opportunity for students to gain advanced quantitative methods skills while learning how to apply them to the most interesting and immediate social science questions. The core of this program will be a “Foundations of Data Science” requirement that will be, in essence, a more advanced methods requirement that will prepare students for the types of quantitative analyses involved in data science. This requirement can be fulfilled by taking our own Gov 2000, or with a handful of advanced classes around the University (Stat 139 or CS 109). In addition to this course, students will direct their Gov electives toward advanced methods courses such as Gov 2001, 2002, and 2003. All other requirements would remain the same as the core Government concentration. This structure has the opportunity to capture students who have a strong interest in the social sciences but also want to gain the increasingly necessary skills of data analysis.

Finally, we envision this Data Science Program as having a career-building aspect outside the classroom. We have a growing number of alumni from the department at the undergraduate and especially graduate levels that are going into the data science industry. These alumni are working at top tech companies (Facebook, Google, Netflix), data journalism, data-driven political consultancies, and impact evaluation non-profits. All of these fields rely heavily on the tools that we hope to bring to students, and we hope to connect the students in this program to our alumni in these fields through regular seminars for students in the program. Students would get a chance to see how these skills are being applied in real career settings and hopefully build out their networks for post-graduation.

Data Science Program Details

The course requirements of the Data Science Program will largely mirror those in the regular Government curriculum, but without the (explicit) methods requirement:

- Gov 97 (Sophomore tutorial, 1 course)
- 1 Gov 94 seminar
- 4 subfield courses (1 per subfield)
- 1 Foundations of Data Science course (replaces methods requirement)
- 3 Advanced Methods courses (see list below, replaces electives)
- (if FoDS course is outside of Gov department) 1 Government department elective
- (if Honors) 1 more Gov elective, Gov 61, Gov 99, and a thesis

Foundations of Data Science course list:¹

- Gov 2000 (Quantitative Research Methodology)
- Stat 139 (Linear Models)
- CS 109 (Data Science 1: Intro to Data Science)

Advanced Methods course list:

- Gov 2001 (Advanced Quantitative Research Methodology)
- Gov 2002 (Causal Inference)
- Gov 2003 (Topics in Quantitative Methodology)

Each of the Foundations of Data Science courses gives students an introduction to the type of applied data analysis that is crucial for data science contexts. Stat 139 is the core Linear Models class in the Statistics department and covers roughly similar ground as our Gov 2000. CS 109, also known as Data Science 1, takes a more computational approach to data science, but still gives students the course tools necessary to learn additional methods classes. As we build this program out and get faculty buy-in, we would like to add more Gov courses to the list of possible “Advanced Methods” courses for this second requirement.

Technology Science.

Our proposal for a new Technology Science program is a natural extension of curricular initiatives already present in the Gov Department and offers further funding, leadership, and educational opportunities for our students..

Technology Science is emerging as the study of unforeseen consequences of technology and ways to resolve technology and society conflicts. IQSS hosts the Journal of Technology Science (<http://techscience.org>). Recent work in technology science by Gov faculty and students has already had an impact on government regulations, technology company practices, and laws around the world. Research in technology science is tackling some of society’s most difficult and urgent challenges worldwide, but frankly, these efforts have only begun to explore the many ways the use and study of technology can serve public interest. Further technology science motivates and seeks to train a new generation of “technologists” to apply their newly acquired knowledge and skills to public service in civil society and government and to product development and management in technology companies.

Technology science was featured in the Gov Department’s Strategic Planning report, in large part due to its demonstrated ability to provide a fresh, innovative avenue for exploring core substantive issues identified in the report involving dysfunctional democracy, international

¹ If the Foundations of Data Science course is fulfilled by a course outside the Government department, students must take an additional Government department elective.

insecurity, the politics of uneven development, and creeping collective action problems. Furthermore, technology science requires engagement with crucial ethical issues.

A Technology Science program within the Gov undergraduate curriculum provides an opportunity for students to gain skills at issue spotting, risk assessment, and scientific analysis and formal modeling of conflicts between technology and society in order to scientifically describe and address some of the most pressing social science questions. The core of this program is a “Technology Science Foundations” requirement that will develop in students the research insight needed to identify, quantify and scientifically describe techno-society conflicts. This requirement would include taking 3 classes inside the department.

Technology Science Program Details.

The Tech Science program requirements will mirror the existing Government curriculum, requirements, but will be more directive in the choice of electives and require some courses outside the department.

Political and Social Context Requirement

Government concentration courses provide an understanding of the contexts in which technology conflicts occur, even though the courses may not themselves include technology. This context will be supplied by Government 97 (Sophomore tutorial: “Political Science of Great Issues”), a Gov 94 seminar, and the political science breadth (i.e., subfield) requirement.

- Gov 97 (Sophomore tutorial, 1 course)
- 1 Gov 94 seminar
- 4 subfield courses (1 per subfield)

Foundations of Technology Science: (this requirement replaces 3 of 4 required Gov electives)

- Gov1433 Technology Science
- Gov1430 Data Science to Save the World
- Gov 93b Integrated Practicum for Technology Science: Capstone project

Allied Skill Requirement (replaces methods requirement)

Two of the following computer science, statistics, economics, or data science courses:

- CS 50, CS109, Stat 104, Stat 110, Gov 2001, or Econ1123 / Econ2

Technology and Governance Requirement (this requirement replaces the 4th Gov elective)

One of the following courses that integrate technology and governance:

- CS105, CS90, Gov1093, Data Science and Ethics (a new course taught by Jim Waldo)²

Administration

Currently we require all students who declare Government to submit a one-page “plan of study” that we make accessible to advisers within the concentration. We would add a simple check-off box on this form that indicates that the student is interested in being involved either in the Data Science or Tech Science “program.” When students have completed the relevant coursework, they would send an email to Karen Kaletka, the Undergraduate Coordinator, who would verify this completion by checking their records.

We don’t anticipate that advising would be a problem. The programs will likely be very small at first and the advising could be handled by a mix of our existing concentration advisers.

We are also currently in the process of hiring an 8-year math/stat preceptor with responsibilities for teaching and advising in the undergraduate program, who could help in this regard. We may additionally get a visiting post doc fellow in the SEAS program to help supervise each year.

² As the track builds out and with Gov faculty support, we foresee additional ethics courses that would cover topics like artificial intelligence and autonomous machines; privacy and civil rights; and platforms like Facebook. This would be similar to the Stanford course offered by political science professors Rob Reich and Jeremy Weinstein.