

SOCIAL DATA ANALYTICS

Graduate Program Head	Bruce Desmarais
Program Code	SODA
Campus(es)	University Park
Degrees Conferred	Dual-Title
The Graduate Faculty	View (https://secure.gradsch.psu.edu/gpms/?searchType=fac&prog=SODA)

Students electing this degree program through participating programs earn a degree with a dual-title at the Ph.D. level, i.e., in (graduate program name) and Social Data Analytics.

The following graduate programs offer a dual-title degree in Social Data Analytics:

- Ph.D in **Criminology** and Social Data Analytics
- Ph.D in **Human Development and Family Studies** and Social Data Analytics
- Ph.D. in **Informatics** and Social Data Analytics
- Ph.D. in **Political Science** and Social Data Analytics
- Ph.D. in **Psychology** and Social Data Analytics
- Ph.D in **Recreation, Park, and Tourism Management** and Social Data Analytics
- Ph.D. in **Sociology** and Social Data Analytics
- Ph.D. in **Statistics** and Social Data Analytics

The Social Data Analytics dual-title degree program is administered by the Social Data Analytics Committee, which is responsible for the management of the program. The committee maintains program definition, identifies faculty and courses appropriate to the program, and recommends policy and procedures for its operation to the Dean of the Graduate School. The program enables students from diverse graduate programs to attain and be identified with an interdisciplinary array of tools, techniques, and methodologies for social data analytics, while maintaining a close association with a home discipline. Social data analytics is the integration of social scientific, computational, informational, statistical, and visual analytic approaches to the analysis of large or complex data that arise from human interaction. To pursue a dual-title degree under this program the student must apply to the Graduate School and register through one of the approved graduate programs.

Admission Requirements

Requirements listed here are in addition to requirements listed in GCAC-208 Dual-Title Graduate Degree Programs (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/gcac-208-dual-titles/>).

Students must apply and be admitted to the graduate program in their primary graduate program and The Graduate School before they can apply for admission to the dual-title degree program. Applicants interested in the dual-title degree program may make their interest in the program known on their applications to the primary graduate program and include remarks in their statement of purpose that address the ways in which their research and professional goals in their chosen primary field reflect an expanded interest in Social Data Analytics.

To be enrolled in the dual-title doctoral degree program in Social Data Analytics, a student must submit a letter of application and transcript, which will be reviewed by the Social Data Analytics Admissions Committee. An applicant must have a minimum grade point average of 3.0 (on a 4-point scale) to be considered for enrollment in the dual-title degree program. Students must be admitted into the dual-title degree program in Social Data Analytics no later than the end of the fourth semester (not counting summer semesters) of entry into the primary Ph.D. program and before taking the comprehensive exam.

Degree Requirements

Requirements listed here are in addition to requirements listed in GCAC-208 Dual-Title Graduate Degree Programs (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/gcac-208-dual-titles/>).

To qualify for the dual-title degree, students must satisfy the requirements of the primary graduate program in which they are enrolled. In addition, they must satisfy the requirements described below, as established by the Social Data Analytics Committee.

The minimum course work requirements for the dual-title Ph.D. degree in Social Data Analytics are as follows:

- Course work and other requirements of the primary program.
- SODA 501 (3 credits)
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- 12 or more elective credits in Social Data Analytics from a list of courses maintained by the Social Data Analytics Committee. Collectively the elective credits must satisfy the following requirements:
 - (A) Core analytics distribution. 3 or more credits in courses focused on statistical learning, machine learning, data mining, or visual analytics. Courses approved as meeting this requirement are designated (A) on the list of approved electives.
 - (Q) Quantification distribution. 6 or more credits in courses focused on statistical inference or quantitative social science methodology. Courses approved as meeting this requirement are designated (Q) on the list of approved electives.
 - (C) Computational / informational distribution. 6 or more credits in courses focused on computation, collection, management, processing, or interaction with electronic data, especially at scale. Courses approved as meeting this requirement are designated (C) on the list of approved electives.
 - (S) Social distribution. 6 or more credits in courses with substantial content on the nature of human interaction and/or the analysis of data derived from human interaction and/or the social context or ethics or social consequences of social data analytics. Courses approved as meeting this requirement are designated (S) on the list of approved electives.
- Cross-departmental distribution.
 - 3 or more credits in approved courses with the prefix STAT or that of a primarily social science department.
 - 3 or more credits in approved courses with the prefix IST, GEOG, or that of a primarily computer science or engineering department.
 - 6 or more credits in approved courses outside the primary program.
 - 3 or fewer credits in approved courses at the 400-level.

Students or faculty may request that the Social Data Analytics Committee consider approval of elective designations for any course, including temporary approvals for experimental or variable-title courses. Students are encouraged to take interdisciplinary courses that carry multiple (A), (Q), (C), (S) designations, as well as to select SODA electives that also meet requirements of the primary program. Within this framework, final course selection is determined by the student in consultation with academic advisers from their home department and Social Data Analytics.

The Social Data Analytics Program maintains a list of background and skills that it recommends students have in place by the time they begin the interdisciplinary coursework required to complete the Social Data Analytics degree.

Qualifying Examination

The qualifying examination in the primary graduate degree program satisfies the qualifying exam requirement for the dual-title degree program in Social Data Analytics.

Ph.D. committee Composition

The Ph.D. committee must conform to all requirements of the primary graduate program and the Graduate Council. In addition to the general Graduate Council requirements for Ph.D. committees (<http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-600/phd-dissertation-committee-formation/>), the Ph.D. committee of a Social Data Analytics dual-title doctoral degree student must include at least one member of the Social Data Analytics Graduate Faculty. Faculty members who hold appointments in both programs' Graduate Faculty may serve in a combined role. If the chair of the Ph.D. committee is not also a member of the Graduate Faculty in Social Data Analytics, the member of the committee representing Social Data Analytics must be appointed as co-chair.

Comprehensive Exam

The dual-title degree will be guided by the comprehensive exam procedure of the primary graduate program. After completion of required course work, doctoral students in the dual-title doctoral degree program must pass a comprehensive examination. In programs where this includes evaluation of a written exam, the Social Data Analytics representative on the student's Ph.D. committee will participate in the writing and evaluation of the exam, in accordance with procedures maintained by the primary graduate program. In programs where the comprehensive exam involves defense of a dissertation prospectus, the Social Data Analytics representative on the student's Ph.D. committee will participate in the evaluation of the prospectus, including ensuring the proposed dissertation has substantial Social Data Analytics content.

Dissertation and Dissertation Defense

Upon completion of the doctoral dissertation, the candidate must pass a final oral examination (the dissertation defense) to earn the Ph.D. degree. Students enrolled in the dual-title program are required to write and orally defend a dissertation on a topic that reflects their original research and education in their home discipline and Social Data Analytics. The dissertation must be accepted by the Ph.D. committee, the head of the graduate program, and the Graduate School.

Social Data Analytics Doctoral Minor

Requirements listed here are in addition to requirements for minors in Graduate Council policies listed under GCAC-600 Research Degree Policies (<https://gradschool.psu.edu/graduate-education-policies/>) and

GCAC-700 Professional Degree Policies (<https://gradschool.psu.edu/graduate-education-policies/>).

Doctoral students may take a doctoral minor in Social Data Analytics. This is the appropriate option for doctoral students in programs that have not adopted the dual-title Ph.D. degree in Social Data Analytics, and for students otherwise pursuing an incompatible degree program, such as another dual-title.

As with all graduate minors, a student seeking a minor must have the approval of the student's major program of study, the Social Data Analytics program, and the Graduate School, and official requests to add a minor to a doctoral student's academic record must be submitted to Graduate Enrollment Services prior to establishing the Ph.D. committee and prior to scheduling the comprehensive examination. At least one Graduate Faculty member from Social Data Analytics must serve on the student's Ph.D. committee.

The doctoral minor in Social Data Analytics requires at least 15 credits in approved courses, with at least 6 at the 500 level, and a minimum of 9 elective credits from a list of approved electives maintained by the Social Data Analytics program. Additional deviations from distribution minimums and maximums may be allowed, but must be approved by the Social Data Analytics program.

Student Aid

Graduate assistantships available to students in this program and other forms of student aid are described in the Tuition & Funding (<https://gradschool.psu.edu/graduate-funding/>) section of The Graduate School's website. Students on graduate assistantships must adhere to the course load limits (<https://gradschool.psu.edu/graduate-education-policies/gsad/gsad-900/gsad-901-graduate-assistants/>) set by The Graduate School.

Courses

Graduate courses carry numbers from 500 to 699 and 800 to 899. Advanced undergraduate courses numbered between 400 and 499 may be used to meet some graduate degree requirements when taken by graduate students. Courses below the 400 level may not. A graduate student may register for or audit these courses in order to make up deficiencies or to fill in gaps in previous education but not to meet requirements for an advanced degree.

Social Data Analytics (SODA) Course List (<https://bulletins.psu.edu/university-course-descriptions/graduate/soda/>)

Learning Outcomes

The curriculum of the Dual-title degree program in Social Data Analytics is designed to develop PhDs with the skills, experience and instincts to lead science and broader society in engaging and addressing the challenges and opportunities arising from big social data. The learning objectives for each student who completes the program are:

1. Combining Social Science and Computational Science: With training in social science disciplines and statistical, computational, visual analytics, students cultivate an understanding of how social research is conducted with advanced analytical approaches.
2. Contributing to the field of Social Data Analytics: Students in the program learn how to, through their own research programs, expand the capabilities of the multidisciplinary field of social data analytics,

and use those capabilities creatively to answer important social scientific questions and to address grand social challenges.

3. Understand basic and applied use of social data analytics: Students in the program will understand how to use and apply their research skills in both academic and private sector employment settings.
4. Diverse and ethical perspectives on Social Data Analytics: The training in the SoDA program leads students to instinctively consider diverse and multinational perspectives on social data issues, to instinctively and effectively prioritize ethics, scientific responsibility, and social consequences in the creation and use of social data, and to communicate effectively with both scientific and nonscientific audiences.

Contact

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Program Website	View (https://soda.la.psu.edu/ programs/graduate-program/)