INFORMATION SYSTEMS (PHD)

Department Website (https://www.stern.nyu.edu/experience-stern/about/departments-centers-initiatives/academic-departments/ioms-dept/)

NYSED: 41112 **HEGIS:** 1701.00 **CIP:** 11.0101

Program Description

Information Systems (IS) is a multidisciplinary field that is growing in importance as the information technology revolution transforms the scale of data, the nature of products, the organization of work, and the way people interact. The Stern IS department has played an active leadership role in defining the fields of data science and business analytics, engaging in cross-disciplinary scholarship in computer science, economics, machine learning, marketing, management science and urban science. PhD students at Stern have the advantage of working with IS faculty who also maintain close research ties with the digital, banking, advertising and media industries, which gives our students access to unique "big data" for research as well as opportunities for experiential learning.

Admissions

All applicants to the NYU Stern School of Business PhD Program are required to submit a complete application for admission. A complete application includes the online application (https://apply.stern.nyu.edu/apply/?sr=6bdbb033-1d1f-4adb-9cb4-102d7e899dc2), statement of purpose (https://www.stern.nyu.edu/programs-admissions/phd/admissions/how-to-apply/#statement), optional essay (https://www.stern.nyu.edu/programs-admissions/phd/admissions/how-to-apply/#optional), educational history and resume or CV (https://www.stern.nyu.edu/programs-admissions/phd/admissions/how-to-apply/#resume), letters of recommendation (https://www.stern.nyu.edu/programs-admissions/phd/admissions/how-to-apply/#recommendationletters), test scores (https://www.stern.nyu.edu/programs-admissions/phd/admissions/how-to-apply/#testscores), academic transcripts (https://www.stern.nyu.edu/programs-admissions/phd/admissions/how-to-apply/#transcripts), and an application fee (https://www.stern.nyu.edu/programs-admissions/phd/admissions/how-to-apply/#fee).

See How to Apply (https://www.stern.nyu.edu/programs-admissions/phd/admissions/how-to-apply/) for admission requirements and instructions specific to this program.

Program Requirements

The program requires the completion of at least 36-54 credits, and students may choose from one of three specializations as noted below.

Course	Title	Credits
Major Requirements		
ECON-GB 3351	Econometrics I	3
INTA-GB 4388	Behavioral Research Methods	3
ECON-GB 3335	Microeconomics: Theory and Applications	3
TECH-GB 3345	Doctoral Seminar in Digital Economics	3
TECH-GB 3382	Research Seminar on IT and Organizations: Social Perspectives	3
TECH-GB 3391	Research Seminar: Data Science	3
TECH-GB 3386	Technical Foundations of Information Systems	3
Required Practica		
TECH-GB 4101	Research Practicum-Inf Sy	1
TECH-GB 4102	Research Practicum II	1
TECH-GB 4103	Research Practicum-IS 3	1
TECH-GB 4104	Research Practicum IV	1
TECH-GB 4105	Research Practicum-IS 5	1
TECH-GB 4150	Teaching Practicum-IS	1
Specialization Requirements		
Students will select one of the following specializations:		9-13
Economics		
Technical		
Behavioral		
Electives		
Other Elective Credits		0-14
Total Credits		**36-54**

Curriculum Details

Although every doctoral student must satisfy general requirements, each student designs and completes an individual program of study.

Each new doctoral student begins a program of study, which requires approval from the Area Coordinator and the Doctoral Office. Any unusual features or revisions of an approved program of study requires permission from both the department Area Coordinator and the Doctoral Office. Unless specifically approved in advance by the Area Coordinator and the Doctoral Office, MBA courses will not be eligible for tuition remission.

The general PhD degree requirement for students entering the program with a Master's degree or equivalent is to successfully complete a minimum of 36 credits. The requirement for students entering the program with only a Bachelor's degree is to successfully complete a minimum of 54 credits. If the Doctoral Office and the department Area Coordinator approve, a program of study may include previous graduate work at NYU or other universities. In all cases, students must complete at least 33 credits of coursework at NYU.

An approved program of study becomes part of the student's permanent academic file and represents a formal commitment by both the student and the school. Any approved program can be modified as appropriate.

A complete program of study must include:

- **Prerequisites:** Every student must satisfy the prerequisites in calculus, linear algebra, basic probability and statistics, and economics before starting doctoral study. This can be accomplished by taking courses in these subjects for a grade.
- **Basic Research Skills Methodology Courses:** Every student must complete four research methodology courses, including three courses in probability and statistics, and one course in microeconomics.
- **Major Specialization & Elective Courses:** Every student must complete the prescribed program of courses in their major specialization, as well as elective courses.

Specialization Requirements

Economics

Course	Title	Credits
Required Courses		
APSTA-GE 2012	Causal Inference	3
DS-GA 1011	Fundamentals of Natural Language Processing	3
ECON-GB 3360	Topics in Economics: Industrial Organization	3
PHDC-GB 8683		3
Recommended Courses		
MKTG-GB 4392	Quantitative Applications in Marketing II	3
MKTG-GB 4394	Advanced Empirical Methods	3

Technical

Course	Title	Credits
Required Courses		
APSTA-GE 2012	Causal Inference	3
CSCI-GA 3520	Honors Analysis of Algorithms	4
DS-GA 1005	Inference and Representation	3
DS-GA 1011	Fundamentals of Natural Language Processing	3
Recommended Courses		
CSCI-GA 3850	PhD Research Seminar	1
DS-GA 1002	Probability and Statistics for Data Science	3
DS-GA 1008	Deep Learning	3
DS-GA 3001	Special Topics in Data Science	3
INTA-GB 9912	Panel Data Analysis (Econometrics II)	3
MATH-GA 2830	Adv Tpcs in Applied Math	3
OPMG-GB 4333	Advanced Topics in Data-Driven Decision Making	3
STAT-GB 1304		3
STAT-GB 3302	Statistical Inference and Regression Analysis	3

Behavioral

Course	Title	Credits
Required Courses		
MGMT-GB 3191	Profession Seminar	1.5
MGMT-GB 3381	Adv Resrch in Orgnz Behav	3
MGMT-GB 3387	Organization Theory	3
MGMT-GB 3191	Profession Seminar	1.5
Recommended Courses		
MGMT-GB 4301	Strategy	3
PHDC-GP 5905		3
PHDC-GR 8405		3
SOC-GA 2414	Sociology of Culture	4

Additional Program Requirements

Program of Study

Successfully complete a program of study, including completion of prerequisite coursework, basic research skills methodology courses, and major field of study and elective courses.

Comprehensive Examination

Successfully pass the comprehensive examination(s) required in the student's area of study.

Teaching Workshop

Attend the Teaching Workshop and receive certification to teach an undergraduate course.

Teaching Preparations

Successful completion of the teaching practica as described in the PhD Handbook.

Teach an Undergraduate Course

Teach one undergraduate course or the equivalent during the 4th year of study.

Dissertation Proposal

Initiate a major piece of original research and present it for faculty approval.

Dissertation Defense

Complete a satisfactory dissertation and defend it successfully at the defense presentation. The research is the extension and completion of the research presented at the dissertation proposal.

Sample Plan of Study

Course	Title	Credits
1st Semester/Term		
APSTA-GE 2012	Causal Inference	3
ECON-GB 3351	Econometrics I	3
INTA-GB 4388	Behavioral Research Methods	3
TECH-GB 4101	Research Practicum-Inf Sy	1
	Credits	**10**
2nd Semester/Term		
DS-GA 3001	Special Topics in Data Science	3
INTA-GB 9912	Panel Data Analysis (Econometrics II)	3
TECH-GB 3382	Research Seminar on IT and Organizations: Social Perspectives	3
TECH-GB 3391	Research Seminar: Data Science	3
TECH-GB 4101	Research Practicum-Inf Sy (continued from Fall)	1
	Credits	**12**
3rd Semester/Term		
DS-GA 1005	Inference and Representation	3
ECON-GB 3360	Topics in Economics: Industrial Organization	3
MKTG-GB 4391	Quantitative Applications in Marketing I	3
TECH-GB 3386	Technical Foundations of Information Systems	3
TECH-GB 4102	Research Practicum II	1
TECH-GB 4103	Research Practicum-IS 3	1
	Credits	**14**
4th Semester/Term		
TECH-GB 4102	Research Practicum II (continued from Fall)	1
TECH-GB 4103	Research Practicum-IS 3 (continued from Fall)	1
Electives		9
	Credits	**9**
5th Semester/Term		
TECH-GB 4104	Research Practicum IV	1
TECH-GB 4150	Teaching Practicum-IS	1
	Credits	**2**
6th Semester/Term		
TECH-GB 4104	Research Practicum IV	1
TECH-GB 4150	Teaching Practicum-IS	1
	Credits	**2**
7th Semester/Term		
TECH-GB 4105	Research Practicum-IS 5	1

Electives	4
Credits	**5**
Total Credits	**54**

Learning Outcomes

Upon successful completion of the program, graduates will:

1. Acquire a broad working knowledge of their field of study.
2. Acquire advanced knowledge in a specific field of research.
3. Conduct independent research.
4. Be skilled presenters of academic research.
5. Be skilled teachers.

Policies

NYU Policies

University-wide policies can be found on the New York University Policy pages (https://bulletins.nyu.edu/nyu/policies/).

Stern Policies

Additional academic policies can be found on the Stern Graduate Academic Policies page (https://bulletins.nyu.edu/graduate/business/academic-policies/).