

HUMAN-CENTERED TECHNOLOGY, INNOVATION & DESIGN (PHD)

NYSED: 28541 **HEGIS:** 0599.00 **CIP:** 15.1501

Program Description

Innovations in technologies redefine and reshape people's lives, changing social and cultural practices, norms and values, institutional processes, and economies and infrastructures. Working to develop new applications for existing and emerging human-centered technologies informed through rigorous, interdisciplinary research and managing socio-technical transitions is a fast-growing and highly important area of research across a number of fields and disciplines. The mission of the Tandon School of Engineering's Human-Centered Technology, Innovation & Design Ph.D. program is to educate and train scholars who will produce pioneering research and scholarship at the vanguard of technological practice and theory.

This program fosters student research through its focus on high-quality supervision and training by faculty members with significant research strengths in a diverse range of technology-related fields, including: digital media and creative practice, design and human-computer interaction, science and technology studies, urban and environmental studies, sociotechnical complex systems, and technology management and innovation. Students in the program typically follow an individualized path based in one of four main areas of focus:

- Human-Computer Interaction (HCI)
- Design Research & Practice
- Management Science
- Computational Social Science

The Human-Centered Technology, Innovation & Design program is a unique interdisciplinary Ph.D. program, offering a rigorous and flexible course of study that unites the strengths of the Departments of Technology Management and Innovation and Technology Culture & Society at the NYU Tandon School of Engineering. It is ideal for students who are primarily interested in pursuing teaching and/or research-based careers at higher education institutions. Universities with undergraduate and graduate programs that emphasize the integration of design and technology development with the critical study of society and technology or the management sciences are a primary source of career opportunities for our graduates. Similarly, government agencies, not-for-profit research organization, think tanks, corporate research centers, and research-based design and consulting firms also seek our graduates.

Admissions

Admission to graduate programs in the Tandon School of Engineering requires the following minimum components:

- Résumé/CV
- Statement of Purpose
- Letters of Recommendation
- Transcripts
- Proficiency in English

The NYU Tandon Graduate Admissions website (<https://engineering.nyu.edu/admissions/graduate/apply/requirements/>) has additional information on school-wide admission.

Some programs may require additional components for admissions.

See the program's How to Apply (<https://engineering.nyu.edu/admissions/graduate/how-apply/>) for department-specific admission requirements and instructions.

Requirements

Admission to the Doctor of Philosophy in Human-Centered Technology, Innovation & Design program is based on an in-depth evaluation of the applicant's academic record, professional experience, research potential, interest in doctoral study, and overall intellectual and professional qualifications. The GRE is optional, while proof of English language proficiency is required for international students.

Program Requirements

Course	Title	Credits
Major Requirements		
<i>Research Methods</i>		
MG-GY 9413	QUANTITATIVE ANALYSIS I	3
MG-GY 9433	QUALITATIVE RESEARCH METHODS	3
<i>Methodology</i>		
Select one of the following:		3
DM-GY 9963	MS Pre-Thesis in Digital Media: Research Methods	
APSY-GE 2835	Research: Using Mixed Methods	
PSYCH-GA 2067	Applied Research Methods	
Electives		
Select five elective courses by advisement ¹		15
Doctoral Seminar		
Select four 3-credit DM-GY Doctoral Seminar in Technology, Culture and Society courses ²		12
Independent Research		
MG-GY 9913	INDEPENDENT RESEARCH ³	15
PhD Dissertation		
MG-GY 999X	PHD DISSERTATION IN TECHNOLOGY MANAGEMENT ⁴	24
Total Credits		75

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Students will have the opportunity to hone their specialization through selecting courses relevant to their research interests.

- Can be in any subfield(s)
- Courses may be taken at Tandon or any school of NYU, except the School of Professional Studies. Courses taken outside of Tandon must be graded and not taken as pass/fail.

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These courses provide strong research background required for doctoral studies. These four research seminars should be completed before taking the comprehensive exam.

3

Students will build their research experience through independent study courses where they will conduct research under a faculty member. Students must complete at least 15 credits of this course before registering for their dissertation, and enroll with at least two different TCS faculty.

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The dissertation is evaluated in two parts: Proposal Defense and Final Defense. For details, contact the PhD HTID Program academic director.

Comprehensive Examinations

Students must successfully pass two comprehensive examinations before starting the dissertation:

- Part One: This examination includes material covered in the methodology courses. It can be taken after completing 30 graduate credits.
- Part Two: This examination includes material from the thematic elective and associated thematic research courses, doctoral seminars and research methods courses. It can be taken after completing required course work.

Students can take both examinations together. Results are provided within one month of the examination. Students have only two chances to pass each examination, and we recommend they start during the end of their 2nd year.

Research Training and Interaction With Faculty

Students are expected to work actively with one or more faculty each year, and focus on completing research. Students are strongly encouraged to present research in progress once a year and work towards publishable papers, usually with a faculty as co-author.

Every student participates in formal research seminars with departmental faculty and visitors.

Advising and Evaluating

The HTID doctoral program faculty director advises all first-year doctoral students. During their first year students have many opportunities to get to know the research interests of all departmental faculty. By the beginning of the second year, students have selected an intermediary adviser who will guide them through the comprehensive exam process and up to the thesis stage. By the middle of the third year students will have selected a thesis adviser. Each year every student submits a statement of intellectual progress to their adviser.

All faculty meet to review the progress of all students in a day-long meeting each year. At this time, the student's intellectual progress is reviewed and plans for the following year are considered. The results of this review include a formal letter to the student assessing the previous year's work and offering guidance for the following year's work.

Prerequisites

All Ph.D. HTID students need a fundamental knowledge of probability and statistics. Students without such a background must take MG-GY 5050 PROBABILITY AND MANAGERIAL STATISTICS. Students without any background in professional writing and communications must take JW-GY 6003 Introduction to Technical Communication or JW-GY 6313 .

Students who have a master's degree or who are transferring from other institutions (or other departments within Tandon) are admitted based on the same qualification standards that apply to new students. For each required M.S. or Ph.D. level course, if students have taken a similar course, they may transfer credits for the course. However, students still have to take and pass both qualifying exams. A minimum of 30 credits, including all dissertation credit, must be taken at Tandon. No dissertation credits from other institutions can be transferred.

All students must take the required coursework as assigned and follow the stipulated curriculum. The course work must be finished within the first three years and the dissertation thesis within the next three years, so all students complete the doctorate within six years.

Sample Plan of Study

Course	Title	Credits
1st Semester/Term		
DM-GY 9003	Doctoral Seminar in Technology, Culture, and Society	3
MG-GY 9413	QUANTITATIVE ANALYSIS I	3
MG-GY 9433	QUALITATIVE RESEARCH METHODS	3
DM-GY XXXX	TCS/TMI Elective	3
Credits		12
2nd Semester/Term		
DM-GY 9003	Doctoral Seminar in Technology, Culture, and Society	3
Select one of the following Methodology courses:		3
DM-GY 9963	MS Pre-Thesis in Digital Media: Research Methods	
APSY-GE 2835	Research: Using Mixed Methods	
PSYCH-GA 2067	Applied Research Methods	
MG-GY XXXX	TCS/TMI Elective	3
MG-GY XXXX	TCS/TMI Elective	3
Credits		12
3rd Semester/Term		
DM-GY 9003	Doctoral Seminar in Technology, Culture, and Society	3
MG-GY XXXX	TCS/TMI Elective (or Extra-Departmental Elective IV)	3
MG-GY 9913	INDEPENDENT RESEARCH	3
Credits		9
4th Semester/Term		
DM-GY 9003	Doctoral Seminar in Technology, Culture, and Society	3
MG-GY XXXX	TCS/TMI Elective (or Extra-Departmental Elective V)	3
MG-GY 9913	INDEPENDENT RESEARCH	3
Credits		9
5th Semester/Term		
RE-GY 9990	PHD QUALIFYING EXAM ¹	0
Credits		0
6th Semester/Term		
MG-GY 9913	INDEPENDENT RESEARCH	3
MG-GY 999X	PHD DISSERTATION IN TECHNOLOGY MANAGEMENT	3
Credits		6
7th Semester/Term		
MG-GY 9913	INDEPENDENT RESEARCH	3
MG-GY 999X	PHD DISSERTATION IN TECHNOLOGY MANAGEMENT	3
Credits		6
8th Semester/Term		
MG-GY 999X	PHD DISSERTATION IN TECHNOLOGY MANAGEMENT	3
MG-GY 9913	INDEPENDENT RESEARCH	3
Credits		6
9th Semester/Term		
MG-GY 999X	PHD DISSERTATION IN TECHNOLOGY MANAGEMENT	3
Credits		3

10th Semester/Term		
MG-GY 999X	PHD DISSERTATION IN TECHNOLOGY MANAGEMENT	6
	Credits	6
11th Semester/Term		
MG-GY 999X	PHD DISSERTATION IN TECHNOLOGY MANAGEMENT	6
	Credits	6
	Total Credits	75

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RE-GY 9990 PHD QUALIFYING EXAM is the prerequisite for MG-GY 999X PHD DISSERTATION IN TECHNOLOGY MANAGEMENT and is taken in the Summer of the second year.

Learning Outcomes

Upon successful completion of the program, graduates will:

1. Be exposed to advanced design skills modulated by understanding of the ways in which society and technology deeply influence design and development.
2. Develop advanced qualitative and quantitative research skills in the social sciences, as a basis for designing, making, and evaluating new technologies in the service of society.
3. Gain in-depth knowledge in a focused thematic area related to designing and making in domains including Human-Computer Interaction, disability, media, and governance based on grassroots input, as well as a deep intersectional understanding of the interplay between technology, race, class, gender, and ability.

Policies

NYU Policies

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

Tandon Policies

Additional academic policies can be found on the Tandon academic policy page (<https://bulletins.nyu.edu/graduate/engineering/academic-policies/>).