QUANTITATIVE METHODS, PHD

The Ph.D. program in Quantitative Methods is designed to prepare students for faculty positions at universities and important responsibilities at research and assessment organizations. Graduates will be prepared to design first rate empirical research and data analyses and to contribute to development of new research methodologies.

Doctoral degree studies include advanced graduate coursework, a research apprenticeship, a Ph.D. Candidacy Examination, and the completion of a doctoral dissertation that represents an independent and significant contribution to knowledge. The research apprenticeship provides students with an opportunity to collaborate with a faculty sponsor on an ongoing basis and to participate in field research leading to a dissertation.

Students who apply directly to the doctoral-level study program following a baccalaureate degree will enroll in the core courses described for M.S.Ed. degree in SMART and the more advanced courses for the Ph.D. degree. This will include the development of independent empirical research projects.

For more information: https://www.gse.upenn.edu/academics/programs/quantitative-methods-phd (https://www.gse.upenn.edu/academics/programs/quantitative-methods-phd/)

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2026 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.

Curriculum

The Ph.D. degree program in Quantitative Methods requires a minimum of 23 course units or relevant courses and advanced degree accomplishments. A maximum of eight (8) credits from other institutions may be taken into account in reducing this basic requirement where appropriate.

Code	Title	Course Units
Required Courses [1]		
EDUC 6625	Data Processing and Analysis (Fall)	1
EDUC 6680	Evaluation of Policies, Programs and Projects	1
EDUC 6683	Survey Methods & Design (Spring)	1
EDUC 6684	Measurement & Assessment (Fall)	1
EDUC 7667	Regression and Analysis of Variance (Fall or Spring)	1
EDUC 7668	Measurement Theory and Test Construction (Spring)	1
EDUC 7671	Factor Analysis and Scale Development (Fall)	1
EDUC 7677	Structural Equations Modeling (Spring)	1
EDUC 8629	Policy Research (Spring)	1
EDUC 8671	Randomized Trials and Experiments (Spring)	1
EDUC 8680	Complex, Multilevel, and Longitudinal Research Models (Fall)	1
EDUC 8681	Classifications, Profiles, and Latent Growth Mixture Models (Spring)	1
Electives [1]		
Select eight electives at the 5000 level or above		8
Additional Requirements [2]		
Students must complete all University Milestones for Doctoral Candidates in addition to specific milestones for GSE. These include:		
EDUC 9950	Dissertation [3]	3
A Qualifications Evaluation (also known as Program Candidacy)		
A Preliminary Examination (also known as Doctoral Candidacy)		
An Oral Defense of the Dissertation Proposal		
Final Defense of the Dissertation		
Total Course Units		**23**

University PhD Benchmarks

In addition to Program requirements, the following milestones must be completed:

Code	Title	Course Units
Qualifying Evaluation		
Candidacy Examination		
Dissertation Defense/Oral Exam		
Dissertation Deposit		

For more information view the University's Academic Rules for PhD Programs (https://catalog.upenn.edu/pennbook/academic-rules-phd/).

1 The student must earn a grade of "B" or better.

2 Required GSE Milestones
Qualifications Evaluation (Also known as Program Candidacy): A Qualifications Evaluation of each student is conducted after the completion of 6 but not more than 8 course units. The evaluation is designed by the specialization faculty and may be based on an examination or on a review of a student's overall academic progress.
Preliminary Examination (Also known as Doctoral Candidacy): A Candidacy Examination on the major subject area is required. The candidacy examination is a test of knowledge in the student's area of specialization, requiring students to demonstrate knowledge and reasoning in the key content areas in their specialization as defined by their academic division. This examination is normally held after the candidate has completed all required courses.
Oral Proposal: All doctoral candidates must present their dissertation proposals orally and in person to the dissertation committee.
Final Defense of the Dissertation: The final dissertation defense is approximately two hours in length and is based upon the candidate's dissertation.

3 Attempted each term after completing coursework to finish PhD milestones. Students will earn 3 CU's in the term they upload their

dissertation and complete all requirements for the degree. Graded Satisfactory/Unsatisfactory.

Required Milestones

Qualifications Evaluation (Also known as Program Candidacy)

A Qualifications Evaluation of each student is conducted after the completion of 6 but not more than 8 course units. The evaluation is designed by the specialization faculty and may be based on an examination or on a review of a student's overall academic progress.

Preliminary Examination (Also known as Doctoral Candidacy)

A Candidacy Examination on the major subject area is required. The candidacy examination is a test of knowledge in the student's area of specialization, requiring students to demonstrate knowledge and reasoning in the key content areas in their specialization as defined by their academic division. This examination is normally held after the candidate has completed all required courses.

Oral Proposal

All doctoral candidates must present their dissertation proposals orally and in person to the dissertation committee.

Final Defense of the Dissertation

The final dissertation defense is approximately two hours in length and is based upon the candidate's dissertation.

First Year		
Fall		**Course Units**
EDUC 6625	Data Processing and Analysis	1
EDUC 6680	Evaluation of Policies, Programs and Projects	1
EDUC 6684	Measurement & Assessment	1
EDUC 7667	Regression and Analysis of Variance	1
	Course Units	**4.00**
Spring		
EDUC 6683	Survey Methods & Design	1
EDUC 7668	Measurement Theory and Test Construction	1
EDUC 8629	Policy Research	1
Elective		1
	Course Units	**4.00**
Second Year		
Fall		
EDUC 7671	Factor Analysis and Scale Development	1
Elective		3
	Course Units	**4.00**
Spring		
EDUC 7677	Structural Equations Modeling	1
EDUC 8671	Randomized Trials and Experiments	1
EDUC 8680	Complex, Multilevel, and Longitudinal Research Models	1
EDUC 8681	Classifications, Profiles, and Latent Growth Mixture Models	1
	Course Units	**4.00**
Third Year		
Fall		
Electives		4
	Course Units	**4.00**
Spring		
EDUC 9950	Dissertation	Attempting 3
	Course Units	**0.00**
Fourth Year		
Fall		
EDUC 9950	Dissertation	Attempting 3
	Course Units	**0.00**
Spring		
EDUC 9950	Dissertation	3
	Course Units	**3.00**
	Total Course Units	**23.00**