

# Psychological & Brain Sciences

Phone: 314-935-6520  
Website: <https://psych.wustl.edu/graduate-program>

## Degree Requirements

### PhD in Psychological & Brain Sciences

The following is a brief listing of the requirements for the PhD in Psychological & Brain Sciences. A more detailed description of these requirements may be found in our Graduate Student Handbook (PDF) ([http://bulletin.wustl.edu/grad/artsci/psychology/graduate\\_student\\_handbook\\_october\\_2017.pdf](http://bulletin.wustl.edu/grad/artsci/psychology/graduate_student_handbook_october_2017.pdf)). Students in the clinical science training program have somewhat different requirements; please refer to the Clinical Program Handbook (PDF) ([http://bulletin.wustl.edu/grad/artsci/psychology/Clinical\\_Handbook\\_Current\\_Jan\\_2020.pdf](http://bulletin.wustl.edu/grad/artsci/psychology/Clinical_Handbook_Current_Jan_2020.pdf)) as well.

All students must do the following:

- Complete required graduate-level courses (courses must be completed for a student to be considered "all but dissertation"). A typical semester course load for the first two years is 12 to 13 credit units unless teaching responsibilities suggest a load of 9 to 10 credit units.
- Obtain teaching experience commensurate with preparation for an academic career. There is a teaching requirement that all students must meet, the details of which are outlined in our Graduate Student Handbook.
- Attend a 1-credit (one hour per week) seminar on research ethics. This seminar typically happens during the fall semester of a student's first or second year in the program.
- Attend at least five professional development workshops over the course of the program.
- Complete a qualifying research project during the first two years of graduate study. This project is often referred to as the master's thesis.
- Pass a subject matter examination. This examination must be passed before work on the dissertation can begin.
- Complete a dissertation project and defend it in an oral examination. The research requirements for the PhD are described in more detail in our Graduate Student Handbook.

## Graduate Certificate in Quantitative Data Analysis

The goal of the certificate is to ensure that students have a solid basis in probability and statistics, inference, and quantitative research design as well as some depth of experience in a more advanced topic area. As such, students completing the certificate are required to take at least five courses, the categories of which are shown below. Some courses appear in more than one area, but a course can only be used to fill one of the requirements. In consultation with the certificate advisor, students may substitute equivalent courses or more demanding mathematical treatments of the same course material. For programming prerequisites, visit our Quantitative Data Analysis website (<https://psych.wustl.edu/graduate-certificate/>).

### Core Area Courses (at least one from each area)

#### Probability and Statistics

Code	Title	Units
Anthro 5365	Problems in Applied Data Analysis	3
Econ 508	Mathematics for Economics	3
Pol Sci 572	Quantitative Methods in Pol Analysis II: Linear Models (Generalized Linear Models)	3
Pol Sci 581	Quantitative Political Methodology I	3
Pol Sci 582	Quantitative Political Methodology II	3
Psych 5066	Quantitative Methods I	3
Psych 5067	Quantitative Methods II	3
SWSA 5230	Applied Linear Modeling	3

#### Inference and Quantitative Research Design

Code	Title	Units
Educ 503	Foundations of Educational Research	3
Math 5110	Experimental Design	3
Pol Sci 5024	Causal Inference	3
Psych 5011	Research Designs and Methods	3

### Focus Area Courses (at least two from one of these three areas)

#### Longitudinal and Time-Series Data Analysis

Code	Title	Units
MEC 661	Analysis of Time Series Data	3
MSB 618	Survival Analysis	3
Pol Sci 584	Multilevel Models in Quantitative Research	3
Psych 5068	Hierarchical Linear Models	3
Psych 5165	Applied Longitudinal Data Analysis	3

Psych 5167	Applied Bayesian Statistics for Psychologists	3
SWDT 6600	Multilevel and Longitudinal Modeling	3
SWDT 6905	Propensity Score Analysis	3

**Multivariate and Machine Learning Analysis**

Code	Title	Units
CSE 514A	Data Mining	3
CSE 517A	Machine Learning	3
Math 5430	Multivariate Statistical Analysis	3
Math 535	Topics in Combinatorics	3
Psych 5012	Selected Topics in Design and Statistics	3
Psych 516	Applied Multivariate Analysis	3
SWDT 6901	Structural Equation Modeling	3

**Data Mining and Specialized Research Tools**

Code	Title	Units
CSE 514A	Data Mining	3
CSE 517A	Machine Learning	3
Econ 5161	Applied Econometrics	3
Math 5310	Bayesian Statistics	3
MSB 550	Introduction to Bioinformatics	3
Psych 5167	Applied Bayesian Statistics for Psychologists	3
SWCD 5082	Foundations of Geographic Information Systems (GIS) for the Applied Social Sciences	3

The fifth course can be from any of the three focus areas, or it can be a second course from the Probability and Statistics group.