Admission Requirements

Applicants apply for admission to the program via the Graduate School application for admission (http://gradschool.psu.edu/prospective-students/how-to-apply/). Requirements listed here are in addition to Graduate Council policies listed under GCAC-300 Admissions Policies (http://gradschool.psu.edu/graduate-education-policies/).

Graduate study in Economics relies heavily on abstract mathematics. It is recommended that, at a minimum, applicants should have taken mathematics up through multivariate calculus.

We require that applicants take the 3-part general aptitude GRE. In judging applicants, we try to take into account that different applicants expend different amounts of effort in preparing for the GRE and that there are systematic differences among applicants from different countries. We require that the GRE be taken within 5 years prior to applying to our Ph.D. program.

The language of instruction at Penn State is English. English proficiency test scores (TOEFL/IELTS) may be required for international applicants. See GCAC-305 Admission Requirements for International Students (http://gradschool.psu.edu/graduate-education-policies/gcac/gcc-305-admission-requirements-international-students/) for more information.

We place considerable weight on, and require three (3) letters of recommendation. Letters should be from people who know you well and who are familiar with graduate programs in Economics at leading universities. The most valuable letters are from people who can credibly compare you to others who have succeeded in such programs.

Highly successful Ph.D. students in Economics display a wide variety of research skills, including creativity. The questions we ask on the application are intended to elicit information about those skills. Also, if you have completed a paper that displays such skills, upload it via the GRADS online application system.

Degree Requirements

Master of Arts (M.A.)

Requirements listed here are in addition to Graduate Council policies listed under GCAC-600 Research Degree Policies. (http://gradschool.psu.edu/graduate-education-policies/)

Doctor of Philosophy (Ph.D.)

Requirements listed here are in addition to Graduate Council policies listed under GCAC-600 Research Degree Policies. (http://gradschool.psu.edu/graduate-education-policies/)

The Ph.D. program has 3 main parts taken in sequence: the core, subfields (of specialization), and the dissertation. Most students take 5 years to complete the program. Occasionally, but rarely, a student finishes in 4 years.

The Core

The core consists of 2 semesters of course work: a 2-semester sequence in microeconomic theory (ECON 502 Microeconomic Analysis and ECON 521 Advanced Microeconomic Theory), a 2-semester sequence in macroeconomic theory (ECON 503 Macroeconomic Analysis and ECON 522 Advanced Macroeconomic Theory), a 2-semester sequence in econometrics (ECON 501 Econometrics and ECON 510 Econometrics I), and a course in mathematics for economists (ECON 500 Introduction to Mathematical Economics).

At the beginning of the third semester, students are required to take 3-hour qualifying exams: one in microeconomics, one in macroeconomics, and one in econometrics. Students with prior graduate training may, however, obtain permission to skip some of the course work in the core and take the qualifying exams earlier than the 3rd semester. Students in good academic standing may be allowed to substitute a qualifying research project for the 3 qualifying exams conditional on the approval of the DGS.

In their second year, all students must enroll in ECON 512A (1 credit offered in the fall.) This course introduces students to computational methods used to numerically solve and simulate economic models and program econometric estimators. Also, all students in their second year must enroll in ECON 512B (2 credits offered in the spring semester.) This course is a continuation of ECON 512A covering the modern computational methods used in both theoretical and empirical research in economics. Students will be required to work on a small project involving data analysis.
Subfields
Students must demonstrate competence in 2 subfields. Competence in a subfield is usually demonstrated by completing 6 credits in the subfield with no grade lower than a B. The department offers the following subfields:

- development economics
- econometrics
- game theory
- industrial organization
- international economics
- macroeconomics

With the permission of the student's adviser and the Director of Graduate Studies, a student may take a course that will count towards the subfield in another department. For instance, students have taken courses in Demography, Political Science, and Statistics.

- 3rd-year paper requirement must be completed before spring semester of 3rd year
- Comprehensive exam (dissertation proposal defense) must be completed before fall semester of 4th year

3rd-Year Paper
Students must complete a paper by the end of their 5th semester, the fall semester of their 3rd year. The paper must be approved by a 3-person faculty committee. The paper must contain original research and must be written in a form suitable for submission to a journal. Students must attend the Knowledge Transfer course in the fall semester of their third year.

Dissertation Research
Most dissertations consist of several essays, each of which has the substance and quality of a journal article. However, a dissertation which has the substance and quality of a single major article in a leading journal is also acceptable. The comprehensive exam (dissertation proposal defense) must be completed before fall semester of 4th year. The student's Ph.D. committee will be nominated to the Graduate School prior to the comprehensive exam (This may typically this will occur more than 12 months after the qualifying exam).

The student will spend the 4th year and the beginning of the 5th year completing the dissertation and will use the summer after the 4th year and the beginning of the 5th year in preparation for the job market. The dissertation must be accepted by the Ph.D. committee, the Head of the Graduate Program, and the Graduate School, and the student must pass a final oral examination (the dissertation defense).

Good Standing
A student must remain in 'good standing' while in the program. This means following the course sequence outlined above, maintaining a GPA of at least 3.0 and completing the qualifying, third-year paper, and comprehensive exam.

Dual-Titles
Dual-title M.A. and Ph.D. in Economics and Demography
Requirements listed here are in addition to requirements listed in GCAC-208 Dual-Title Graduate Degree Programs (http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/gcac-208-dual-title-graduate-degree-programs/).

Admissions Requirements
Students must apply and be admitted to the graduate program in Economics and The Graduate School before they can apply for admission to the dual-title degree program. After admission to their primary program, students must apply for admission to and meet the admissions requirements of the Demography dual-title program. Refer to the Admission Requirements section of the Demography Bulletin page (http://bulletins.psu.edu/graduate/programs/majors/demography/).

The qualifying examination committee for the dual-title degree must include at least one Graduate Faculty member from the Demography program. Faculty members who hold appointments in both programs' Graduate Faculty may serve in a combined role. There will be a single qualifying examination, containing elements of both Economics and Demography. Dual-title graduate degree students may require an additional semester to fulfill requirements for both areas of study and, therefore, the qualifying examination may be delayed one semester beyond the normal period allowable.

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 an Economics and Demography dual-title Ph.D. student must include at least one member of the Demography 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 Demography, the member of the committee representing Demography must be appointed as co-chair. The Demography representative on the student's Ph.D. committee will develop questions for and participate in the evaluation of the comprehensive examination.

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

Dual-title M.A. and Ph.D. in Economics and Operations Research
Requirements listed here are in addition to requirements listed in GCAC-208 Dual-Title Graduate Degree Programs (http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/gcac-208-dual-title-graduate-degree-programs/).

Admissions Requirements
Students must apply and be admitted to the graduate program in Economics and The Graduate School before they can apply for admission
to the dual-title degree program. After admission to their primary program, students must apply for admission to and meet the admissions requirements of the Operations Research dual-title program. Refer to the Admission Requirements section of the Operations Research Bulletin page (http://bulletins.psu.edu/graduate/programs/majors/operations-research/). Doctoral students must be admitted into the dual-title degree program in Operations Research prior to taking the qualifying examination in their primary graduate program.

**Degree Requirements**

To qualify for the dual-title degree, students must satisfy the degree requirements for the degree they are enrolled in Economics, listed in the Degree Requirements section. In addition, students must complete the degree requirements for the dual-title in Operations Research, listed on the Operations Research Bulletin page (http://bulletins.psu.edu/graduate/programs/majors/operations-research/).

The qualifying examination committee for the dual-title Ph.D. degree will be composed of Graduate Faculty from Economics and must include at least one Graduate Faculty member from the Operations Research program. Faculty members who hold appointments in both programs’ Graduate Faculty may serve in a combined role. There will be a single qualifying examination, containing elements of both Economics and Operations Research. Dual-title graduate degree students may require an additional semester to fulfill requirements for both areas of study and, therefore, the qualifying examination may be delayed one semester beyond the normal period allowable.

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 Economics and Operations Research dual-title Ph.D. student must include at least one member of the Operations Research 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 Operations Research, the member of the committee representing Operations Research must be appointed as co-chair. The Operations Research representative on the student’s Ph.D. committee will develop questions for and participate in the evaluation of the comprehensive examination.

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

**Student Aid**

Graduate assistantships available to students in this program and other forms of student aid are described in the Tuition & Funding (http://gradschool.psu.edu/graduate-funding/) section of The Graduate School’s website. Students on graduate assistantships must adhere to the course load limits (http://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.

Economics (ECON) Course List (https://bulletins.psu.edu/university-course-descriptions/graduate/econ/)

**Learning Outcomes**

1. **CORE:** Graduates will demonstrate broad knowledge and comprehension of the major macroeconomic and microeconomic models and econometric methodology.
2. **FIELD:** Graduates will acquire in-depth knowledge and comprehension of the major models, study designs and results of their specialty area.
3. **RESEARCH:** Graduates will be proficient in advancing knowledge in their specialty area through new approaches, models, methods, or the creative application of existing approaches, models and methods to produce new results.
4. **TRANSFER:** Graduates will learn to convey the major issues in their specialty area and their specific projects through research collaborations, discussions, presentations and publications.

**Contact**

**Graduate Program Head:** Barry W. Ickes  
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