ECONOMICS

Graduate Program Head	Barry W. Ickes
Program Code	ECON
Campus(es)	University Park (Ph.D., M.A.)
Degrees Conferred	Doctor of Philosophy (Ph.D.) Master of Arts (M.A.) Dual-Title M.A. and Ph.D. in Economics and Demography Dual-Title M.A. and Ph.D. in Economics and Operations Research Integrated B.A./B.S. in Economics and M.A. in Economics
The Graduate Faculty	View (https://secure.gradsch.psu.edu/gpms/?searchType=fac&prog=ECON)

Admission Requirements

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

The M.A. degree in economics may be earned by satisfactorily completing 30 credits of appropriate course work, presenting a master's essay, and passing a final oral examination. The master's essay includes preparation of a paper which is written under the supervision of a faculty member. A minimum of 30 credits at the 400, 500 or 800 level is required, with at least 18 credits at the 500 level.

Code	Title	Credits
Required Courses		
ECON 501	Econometrics	3
ECON 502	Microeconomic Analysis	3
ECON 503	Macroeconomic Analysis	3
ECON 510	Econometrics I	3
ECON 521	Advanced Microeconomic Theory	3
ECON 533	Applied and Quantitative Economics	3
ECON 596	Individual Studies	3
Electives		**3**
Culminating Experience		
ECON 530	Master's Scholarly Essay I	3
ECON 531	Master's Scholarly Essay II	3
Total Credits		**30**

Doctor of Philosophy (Ph.D.)

Requirements listed here are in addition to Graduate Council policies listed under GCAC-600 Research Degree Policies. (https://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 3 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

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 (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 requirements on time.

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 (https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/gcac-208-dual-titles/).

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/). Doctoral students must be admitted into the dual-title degree program in Demography 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 Demography, listed on the Demography Bulletin page (http://bulletins.psu.edu/graduate/programs/majors/demography/).

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 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 (https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/gcac-208-dual-titles/).

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.

Integrated Undergrad-Grad Programs

Integrated B.A./B.S. in Economics and M.A. in Economics

This Integrated Undergraduate/Graduate (IUG) degree program combines the B.A./B.S. in Economics with the M.A. in Economics offered at the following campuses:

Undergraduate Degree

- University Park
- World Campus

Graduate Degree

- University Park

The graduate portion of this IUG is currently offered as face-to-face residential instruction. While the undergraduate curriculum for this IUG may be completed at multiple campuses, the ease and feasibility of completing the integrated program may be heavily dependent upon the location of the graduate instruction. Please discuss the feasibility of completing the IUG with a representative for the graduate program before beginning the application process.

Requirements listed here are in addition to requirements listed in GCAC-210 Integrated Undergraduate-Graduate (IUG) Degree Programs (https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/gcac-210-integrated-undergraduate-graduate-degree-programs/).

Admissions Requirements

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

The IUG program is a highly selective program and is appropriate only for those who are prepared to undertake a highly rigorous graduate study of economics. Applicants are subject to the same standards that are required of our applicants for the M.A. program. Students must apply to and meet admission requirements of the Graduate School, as well as admission requirements for the M.A. in Economics. Before applying to the Graduate School, students must have completed entrance to their undergraduate major, have completed no less than 60 credits, and be admitted no later than the end of the second week of the semester preceding the semester of expected conferral of the undergraduate degree.

To apply to the program, students must:

- be economics majors by the time they apply for the IUG program and have completed at least 60 credits toward the B.A./B.S. degree. Transfer students must have completed at least 15 credits at Penn State to enroll in an IUG.
- complete the requirements for a B.A./B.S. in economics with the following modifications: Two out of three prescribed courses for the B.A./B.S. must be taken at the honors-level. These prescribed courses, which all count toward the undergraduate degree in economics are: ECON 302H, ECON 304H and ECON 306H. Knowledge of these courses are pre-requisites of the theoretical core of the Masters program. Regular versions of these courses are not adequate preparation for quality graduate programs in Economics. Students who have taken all the regular sections (non-honors) of these courses prior to their decision to pursue the IUG should audit at least two of these honors versions of the courses. Exceptions may be evaluated and approved by the faculty advisor of the IUG program.
- be on track to complete the undergraduate degree requirements within 4 years of initial matriculation.

- complete a Graduate School application for the M.A. program in Economics. Applicants will have to satisfy all the prerequisites that apply for admission to the M.A. program.
- provide two letters of reference and personal statement addressing the reasons for pursuing a graduate degree in Economics.
- prepare a plan of study identifying undergraduate credits to be applied to the M.A. degree elective requirements.
- submit GRE scores. We require that applicants take the 3-part general aptitude GRE. There is no minimum requirement for GRE scores. We 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. GRE scores should not be more than five years old. Specifically, if you are applying for admission for the Ph.D. program beginning in the fall of year X, then you should have taken the GRE no earlier than the fall of year X-5.

Although the program has no fixed minimum grade -point average, an applicant is generally expected to have a minimum overall GPA of 3.5 (on a 4.0 scale) in undergraduate coursework and a minimum GPA of 3.5 in all coursework completed for the major.

Degree Requirements

Students must fulfill all degree requirements for each degree in order to be awarded that degree, subject to the double-counting of credits as outlined below. Degree requirements for the Bachelor of Arts and Bachelor of Science in Economics are listed in the Undergraduate Bulletin (https://bulletins.psu.edu/undergraduate/). Degree requirements for the Master of Arts in Economics are listed on the Degree Requirements tab. Students must sequence their courses so that all undergraduate degree requirements are completed by the end of Year 4. Students are expected to complete the undergraduate degree requirements within the typical time to degree for the undergraduate major. If students accepted into the IUG program are unable to complete the M.A. degree, they are still eligible to receive their undergraduate degree if all the undergraduate degree requirements have been satisfied.

In the semester in which the undergraduate degree requirements will be completed, IUG students must activate their undergraduate intent to graduate, and the undergraduate degree should be conferred at the next appropriate Commencement.

Up to 12 credits may be double-counted towards the degree requirements for both the graduate and undergraduate degrees. The courses that are eligible to double count for both degrees are:

Code	Title	Credits
Courses Eligible to Double Count for Both Degrees		
ECON 501	Econometrics	3
ECON 502	Microeconomic Analysis	3
ECON 503	Macroeconomic Analysis	3
ECON 510	Econometrics I	3
ECON 521	Advanced Microeconomic Theory	3-6
ECON 533	Applied and Quantitative Economics	3

The double-counted credits could fulfill ECON 400-level course requirements for the B.A. or B.S. degrees and/or honors credit requirements. Elective courses must be taken at the ECON 500 or ECON 400 level. Courses below ECON 400 may not be counted towards the graduate degree requirements. Independent study courses and credits associated with the culminating experience for the graduate degree cannot be double-counted.

Academic Advising

The faculty designated to oversee the IUG program will provide general advice and monitor the progress of students in the IUG program to ensure that they achieve satisfactory performance and follow all relevant UFS and Graduate Council policies.

Advising is an important component of the integrated BA/BS/MA degree program. Upon acceptance into the program, each student will be assigned a faculty advisor whose academic specialty and/or area of research are as closely matched with the student's interest as possible. In consultation with the faculty adviser, the student will develop an individualized plan of study.

Minor

A graduate minor is available in any approved graduate major or dual-title program. The default requirements for a graduate minor are stated in Graduate Council policies listed under GCAC-600 Research Degree Policies (https://gradschool.psu.edu/graduate-education-policies/) and GCAC-700 Professional Degree Policies (https://gradschool.psu.edu/graduate-education-policies/), depending on the type of degree the student is pursuing:

- GCAC-611 Minor - Research Doctorate (https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-600/gcac-611-minor-research-doctorate/)
- GCAC-641 Minor - Research Master's (https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-600/gcac-641-minor-research-masters/)
- GCAC-709 Minor - Professional Doctorate (https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-700/gcac-709-professional-doctoral-minor/)
- GCAC-741 Minor - Professional Master's (https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-700/gcac-741-masters-minor-professional/)

Student Aid

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

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