

BUSINESS, PH.D.

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (<http://guide.wisc.edu/graduate/#policiesandrequirements>), in addition to the program requirements listed below.

MAJOR REQUIREMENTS

MODE OF INSTRUCTION

Face to Face	Evening/ Weekend	Online	Hybrid	Accelerated
Yes	No	No	No	No

Mode of Instruction Definitions

Accelerated: Accelerated programs are offered at a fast pace that condenses the time to completion. Students are able to complete a program with minimal disruptions to careers and other commitments.

Evening/Weekend: Courses meet on the UW–Madison campus only in evenings and/or on weekends to accommodate typical business schedules. Students have the advantages of face-to-face courses with the flexibility to keep work and other life commitments.

Face-to-Face: Courses typically meet during weekdays on the UW-Madison Campus.

Hybrid: These programs combine face-to-face and online learning formats. Contact the program for more specific information.

Online: These programs are offered 100% online. Some programs may require an on-campus orientation or residency experience, but the courses will be facilitated in an online format.

CURRICULAR REQUIREMENTS

Requirements Detail

Minimum Credit Requirement 51 credits

Minimum Residence Credit Requirement 32 credits

Minimum Graduate Coursework Requirement Half of degree coursework (26 credits out of 51 total credits) must be completed graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university's Course Guide.

Overall Graduate GPA Requirement 3.00 GPA required.

Other Grade Requirements

The Graduate School requires an average grade of B or better in all coursework (300 or above, not including research credits) taken as a graduate student unless conditions for probationary status require higher grades. Grades of Incomplete are considered to be unsatisfactory if they are not removed during the next enrolled semester.

Assessments and Examinations Doctoral students are required to take a comprehensive preliminary examination after they have cleared their record of all Incomplete and Progress grades (other than research and thesis). Some areas have an additional oral component. Deposit of the doctoral dissertation in the Graduate School is required.

Language Requirements There are no curricular language requirements for Business Ph.D. students.

Doctoral Minor/Breadth Requirements A doctoral minor is not required for Business Ph.D. students. Breadth is achieved in other ways; see below.

REQUIRED COURSES

Business Ph.D. students choose one of seven curricular pathways¹ to complete course requirements. In addition to pathway requirements, all Ph.D. students are required to participate in the Teaching Improvement Program and Graduate Assistant Equity Workshop.

Accounting and Information Systems Pathway¹

Students in our program develop a basic research background in both archival and behavioral empirical research. The program is one of the most balanced programs in the country in terms of support for different research methodologies and topics. Most students ultimately specialize in the research area and methodology that best suits their skills and research interests. Both behavioral (including experimental economics) and archival methods are strongly supported.

Code	Title	Credits
Seminar Requirement		
ACCT I S 971	Seminar in Accounting Research ²	12
Economics Requirement		
ECON 711	Economic Theory-Microeconomics Sequence	6
or A A E 635	Applied Microeconomic Theory	
or A A E 705	Applied Microeconomics	
Approved Economics Elective (see list below for possible course options)*		
Statistics and Research Methods Requirement		
GEN BUS 933	Beginning a Research Career in Business	7-9
<i>Students also select two of the following:</i>		
ECON 709	Economic Statistics and Econometrics I	9
ECON 710	Economic Statistics and Econometrics II	
PSYCH 610	Design and Analysis of Psychological Experiments I	9
PSYCH 710	Design and Analysis of Psychological Experiments II	
A A E 636	Applied Econometric Analysis I	9
A A E 637	Applied Econometric Analysis II	
Breadth Requirement³		
Additional Coursework⁴		
Total Credits		51

¹ These pathways are internal to the program and represent different routes a student can follow to earn this degree. Pathway names do

not appear in the Graduate School admissions application, and they will not appear on the transcript.

² Students will need to take ACCT I S 971 Seminar in Accounting Research four times to meet this requirement.

³ Students also develop specialization in a related field such as economics, psychology, or sociology. Finally, students build a foundation in statistics that supports their research interests. Methodology courses in economics, agricultural economics, or psychology will generally provide a strong foundation.

⁴ This could include the following courses: ACCT I S 990 Accounting Independent Research PhD Thesis, ACCT I S 999 Reading and Research-Accounting PhD, and other non-research coursework decided with their advisor.

Code	Title	Credits
*Approved Economics Electives		
ECON 461	International Macroeconomics	3-4
ECON 464	International Trade	3-4
ECON 467	International Industrial Organizations	3-4
ECON 521	Game Theory and Economic Analysis	3-4
ECON/POP HLTH/ PUB AFFR 548	The Economics of Health Care	3-4
ECON 712	Economic Theory-Macroeconomics Sequence	3
ECON 713	Economic Theory: Microeconomics Sequence	3
ECON 716	Econometric Methods	3
ECON 717	Applied Econometrics	3
ECON 736	Macroeconomic Policy	3
ECON 741	Theory of Public Finance and Fiscal Policy	3
ECON 742	Theory of Public Finance and Fiscal Policy	3
ECON 751	Survey of Institutional Aspects of Labor Economics	3
ECON 761	Industrial Organization Theory	3
ECON 762	Empirical Analysis of Industrial Organization and Public Policy	3
A A E 722	Machine Learning in Applied Economic Analysis	4
A A E 737	Applied Econometric Analysis III	3
A A E 741		3
A A E 777	Survey and Sample Design in Applied Economics	2
A A E 875	Special Topics (Topic: Introduction to Object-Oriented Programming and Data Analytics)	1-4
A A E/ENVIR ST/ POP HLTH/ PUB AFFR 881	Benefit-Cost Analysis	3

Actuarial Science, Risk Management, and Insurance Pathway ¹

The course sequence for Ph.D. students in actuarial science, risk management, and insurance is customized to fit each student's unique research interests and background. During your first two years of study,

you will work with a Ph.D. faculty advisor to set an appropriate course sequence, consisting of a combination of courses within the Wisconsin School of Business and a set of advanced courses that form a coherent package and enhance your research skills from outside of the Wisconsin School of Business.

Code	Title	Credits
Economic Theory Requirement		6
Select one of the following sequences:		
ECON 711 & ECON 713	Economic Theory-Microeconomics Sequence and Economic Theory: Microeconomics Sequence	
ECON 712 & ECON 714	Economic Theory-Macroeconomics Sequence and Economic Theory; Macroeconomics Sequence	
Econometrics Requirement		6-8
Select one of the following sequences:		
ECON 709 & ECON 710	Economic Statistics and Econometrics I and Economic Statistics and Econometrics II	
STAT 849 & STAT 850	Theory and Application of Regression and Analysis of Variance I and Theory and Application of Regression and Analysis of Variance II	
A A E 636 & A A E 637	Applied Econometric Analysis I and Applied Econometric Analysis II	
Other Requirements		
GEN BUS 806	Panel Data Analysis	3
GEN BUS 933	Beginning a Research Career in Business	1
R M I 920	Seminar in Actuarial Science, Risk Management & Insurance I	3
R M I 930	Seminar in Actuarial Science, Risk Management & Insurance II	3
Breadth Requirement ²		6
Additional Coursework ³		21-23
Total Credits		51

¹ These pathways are internal to the program and represent different routes a student can follow to earn this degree. Pathway names do not appear in the Graduate School admissions application, and they will not appear on the transcript.

² During your first two years of study, you will work with a Ph.D. faculty advisor to set an appropriate course sequence, consisting of a combination of courses within the Wisconsin School of Business and a set of advanced courses that form a coherent package and enhance your research skills from outside of the Wisconsin School of Business.

³ This could include the following courses: R M I 990 Risk & Insurance Independent Research PhD Thesis, R M I 999 Reading and Research-Risk Management and Insurance PhD, and other non-research coursework decided with their advisor.

Finance Pathway¹

Code	Title	Credits
Finance Requirements		
FINANCE 920	Theory of Finance ²	3
FINANCE 970	Seminar- Investments (Ph.D.) ²	3
FINANCE 971	Seminar-Corporate Finance (Ph.D.) ²	3
FINANCE 972	Topics Seminar-Finance PhD ²	3
FINANCE 973	Seminar-Workshop in Finance ³	8
Econometrics Requirement		
ECON 709	Economic Statistics and Econometrics I	3-4
ECON 710	Economic Statistics and Econometrics II	3-4
Economics Requirement		
ECON 711	Economic Theory-Microeconomics Sequence	3
ECON 712	Economic Theory-Macroeconomics Sequence	3
ECON 713	Economic Theory: Microeconomics Sequence	3
ECON 714	Economic Theory; Macroeconomics Sequence	3
Breadth Requirement⁴		9
Additional Coursework⁵		2-4
Total Credits		51

¹ These pathways are internal to the program and represent different routes a student can follow to earn this degree. Pathway names do not appear in the Graduate School admissions application, and they will not appear on the transcript.

² These courses are taught in the lecture format.

³ Students are required to take this course 4 times for credit. This course is taught in the seminar format.

⁴ At the beginning of the second year, each student proposes a set of three advanced courses that form a coherent package and enhance the student's research skills. Students are free to choose elective courses offered by the economics, mathematics, or statistics departments. If applicable, students should work with their advisor to determine if courses in other areas are appropriate.

⁵ This could include the following courses: FINANCE 990 Finance Independent Research PhD Thesis, FINANCE 999 Reading and Research-Finance PhD, and other non-research coursework decided with their advisor.

Management and Human Resources Pathway¹

The management and human resources department offers a slate of foundational Ph.D. seminars across the group's core areas of research, including human resource management (HR), organizational behavior (OB), organizational theory (OT), entrepreneurship (ENT), and strategy. The seminar offerings vary from year to year. Doctoral students are expected to take all Ph.D. seminars offered by the department, which consists of 17 credits.

Code	Title	Credits
Ph.D. Seminars		
M H R 871	Seminar-Personnel Management	3
M H R 872	Seminar in Organizational Behavior and Design	3

M H R 973	Doctoral Research Seminar in Business Strategy	3
M H R 975	Doctoral Research Seminar in Management	3
M H R 976	Doctoral Research Seminar in Management	2
M H R 977	Emerging Entrepreneurship Theory and Research	3

Other Requirements

GEN BUS 933	Beginning a Research Career in Business	1
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Advanced Research Methods and Statistics* (see list below for possible course options) **18**

Breadth **15**

Students are required to take an additional 15 credits of coursework, level 700 or higher, from any department. A substantial share of coursework may be undertaken outside of the Wisconsin School of Business. Students take a diverse array of seminars in the economics, sociology, psychology, statistics, and computer science departments, depending on their specific research interests. These may be theory or methods courses.

Total Credits **51**

- Preliminary exams are written at the end of the second year. The exam, which takes place over two days, consists of four questions. Two questions cover the student's primary concentration, one question covers the student's secondary concentration, and there is one methods question. (The concentrations are human resource management, organizational behavior, or strategy/ENT/OT.)
- The subsequent two years of study are allocated to developing and defending a dissertation.

¹ These pathways are internal to the program and represent different routes a student can follow to earn this degree. Pathway names do not appear in the Graduate School admissions application, and they will not appear on the transcript.

Code	Title	Credits
*Advanced Research Methods and Statistics		

Required coursework in advanced research methods and statistics includes a minimum of 18 credits, consisting of two courses in statistics, two in research methodology, and two depth courses. Courses are selected in consultation with the student's advisor. Examples of courses that have fulfilled these requirements in the past include:

A A E/M H R 540	Intellectual Property Rights, Innovation and Technology	3
A A E 636	Applied Econometric Analysis I	3
A A E 637	Applied Econometric Analysis II	3
A A E 737	Applied Econometric Analysis III	3
COMP SCI 838	Topics in Computing	1-3
ECON 522	Law and Economics	3-4
ECON 700	Mathematics for Economists	3
ECON 701	Microeconomics I	3
ECON 702	Macroeconomics I	3
ECON 704	Econometrics I	3

ECON 705	Econometrics II	3	SOC/C&E SOC 360	Statistics for Sociologists I	4
ECON 706	Econometrics III	3	SOC/C&E SOC 361	Statistics for Sociologists II	3
ECON 708	Microeconomics II	3	SOC 362	Statistics for Sociologists III	3
ECON 709	Economic Statistics and Econometrics I	3-4	SOC 375	Introduction to Mathematical Sociology	3
ECON 710	Economic Statistics and Econometrics II	3-4	SOC 632	Sociology of Organizations	3-4
ECON 711	Economic Theory-Microeconomics Sequence	3	SOC/C&E SOC 652	Sociology of Economic Institutions	3
ECON 712	Economic Theory-Macroeconomics Sequence	3	SOC 952	Seminar-Mathematical and Statistical Applications in Sociology	3
ECON 717	Applied Econometrics	3	STAT 849	Theory and Application of Regression and Analysis of Variance I	3
ECON 750	Labor Economics	3	Marketing Pathway ¹		
ECON 751	Survey of Institutional Aspects of Labor Economics	3	Code	Title	Credits
ECON 873	Seminar-International Economics	2-3	Seminar Requirement		
ED PSYCH 711	Current Topics in Educational Psychology	1-3	MARKETNG 971	Seminar-Marketing PhD ²	6
ED PSYCH/ COUN PSY/CURRIC/ ED POL/ELPA/ RP & SE 719	Introduction to Qualitative Research	3	MARKETNG 972	Seminar-Marketing PhD ²	6
ED PSYCH 760	Statistical Methods Applied to Education I	3	GEN BUS 933	Beginning a Research Career in Business	1
ED PSYCH 761	Statistical Methods Applied to Education II	3	Breadth Requirement* (see list below for possible course options)		
ED PSYCH 762	Introduction to the Design of Educational Experiments	3	Additional Coursework		
ED PSYCH 763	Regression Models in Education	3	Students will take additional credits of coursework, decided in consultation with their advisor.		
ED PSYCH/ELPA 827	Surveys and Other Quantitative Data Collection Strategies	3	Total Credits		
ED PSYCH 960	Structural Equation Modeling	3	51		
ED PSYCH 963	Design & Analysis of Quasi-Experiments for Causal Inference	3	¹ These pathways are internal to the program and represent different routes a student can follow to earn this degree. Pathway names do not appear in the Graduate School admissions application, and they will not appear on the transcript.		
ED PSYCH 964	Hierarchical Linear Modeling	3	² Students take each of these seminars twice.		
ELPA/ED PSYCH 827	Surveys and Other Quantitative Data Collection Strategies	3	Code	Title	Credits
MARKETNG 971	Seminar-Marketing PhD	3	*Breadth Requirement		
MATH/STAT 431	Introduction to the Theory of Probability	3	Students complete four courses at the graduate level, either inside or outside the School of Business. These courses will form a coherent topic related to the student's specific research interest and will include at least one course in the methods of data collection and at least one in the methods of data analysis. Students will select these courses in consultation with their advisor. Courses that have fulfilled these requirements in the past include:		
MATH 521	Analysis I	3	<i>Methods of Data Collection</i>		
POLI SCI 812	Introduction to Statistical Methods in Political Science	3	ANTHRO 909	Research Methods and Research Design in Cultural Anthropology	3
POLI SCI 813	Multivariable Statistical Inference for Political Research	3	ART HIST/ AFROAMER 801	Historiography, Theory and Methods in Visual Culture	3
POLI SCI 818	Maximum Likelihood Estimation	3	COM ARTS 762	Communication Research Methods	3
POLI SCI/A A E 835	Game Theory and Political Analysis	3	COMP SCI 760	Machine Learning	3
POLI SCI 919	Seminar-Advanced Methodology	3	COMP SCI 766	Computer Vision	3
PSYCH 610	Design and Analysis of Psychological Experiments I	4	ED PSYCH 762	Introduction to the Design of Educational Experiments	3
PSYCH 710	Design and Analysis of Psychological Experiments II	4	ED PSYCH 861	Statistical Analysis and Design in Educational Research	3
PSYCH 711	Current Topics in Psychology	2-3	PSYCH 610	Design and Analysis of Psychological Experiments I	4
R M I 930	Seminar in Actuarial Science, Risk Management & Insurance II	3			

PSYCH 710	Design and Analysis of Psychological Experiments II	4	SOC 952	Seminar-Mathematical and Statistical Applications in Sociology	3
MARKETNG 710	Marketing Research	3	STAT 609	Mathematical Statistics I	3
MARKETNG 805	Qualitatively-Based Marketing Insights	3	STAT 610	Introduction to Statistical Inference	4
MARKETNG 815	Marketing Analytics	3	STAT/ECON/GEN BUS 775	Introduction to Bayesian Decision and Control I	3
SOC 735	Ethnomethodology & Conversation Analysis	3	STAT 849	Theory and Application of Regression and Analysis of Variance I	3
STAT 771	Statistical Computing	3			
Methods of Data Analysis					
COMP SCI/ I SY E 719	Stochastic Programming	3			
COMP SCI/ I SY E/ MATH/STAT 726	Nonlinear Optimization I	3			
COMP SCI/E C E 761	Mathematical Foundations of Machine Learning	3			
COMP SCI/ ED PSYCH/ PSYCH 770	Human-Computer Interaction	3			
COMP SCI/E C E/ STAT 861	Theoretical Foundations of Machine Learning	3			
ECON 700	Mathematics for Economists	3			
ECON 701	Microeconomics I	3			
ECON 702	Macroeconomics I	3			
ECON 704	Econometrics I	3			
ECON 705	Econometrics II	3			
ECON 706	Econometrics III	3			
ECON 708	Microeconomics II	3			
ECON 709	Economic Statistics and Econometrics I	3-4			
ECON 710	Economic Statistics and Econometrics II	3-4			
ECON 711	Economic Theory-Microeconomics Sequence	3			
ECON 713	Economic Theory: Microeconomics Sequence	3			
ECON 717	Applied Econometrics	3			
ECON 761	Industrial Organization Theory	3			
ECON 762	Empirical Analysis of Industrial Organization and Public Policy	3			
ECON 809	Topics in Microeconomic Theory	1-3			
ECON 899	Recent Advances in Economics	1-3			
ED PSYCH 711	Current Topics in Educational Psychology	1-3			
ED PSYCH 760	Statistical Methods Applied to Education I	3			
ED PSYCH 761	Statistical Methods Applied to Education II	3			
ED PSYCH 763	Regression Models in Education	3			
ED PSYCH 773	Factor Analysis, Multidimensional Scaling and Cluster Analysis	3			
ED PSYCH 960	Structural Equation Modeling	3			
ED PSYCH 964	Hierarchical Linear Modeling	3			
POLI SCI 818	Maximum Likelihood Estimation	3			
POLI SCI 919	Seminar-Advanced Methodology	3			

Operations and Information Management Pathway ¹

The Operations and Information Management Pathway is designed to be customized by each student. Each student will work directly with their advisor to determine the appropriate courses to take to meet all of the requirements listed below. For a student entering the Ph.D. program with a master's degree in the major area, the required coursework is estimated to take two years. Students without a relevant master's degree may take an additional semester to complete the required coursework. Before becoming a dissertator, Ph.D. students must both complete 32 credits of coursework and pass a preliminary exam.

Code	Title	Credits
Mathematical Foundation ²		3
Statistical Foundation ³		3
Economics Foundation ⁴		3
Research Methodology		
GEN BUS 933	Beginning a Research Career in Business	1
Research Electives ⁵		12
Breadth Requirement ⁶		9
Additional Coursework ⁷		20
Total Credits		51

¹ These pathways are internal to the program and represent different routes a student can follow to earn this degree. Pathway names do not appear in the Graduate School admissions application, and they will not appear on the transcript.

² This requirement can be met with MATH 340 Elementary Matrix and Linear Algebra or any MATH course numbered 500 or higher.

³ This requirement can be met with any STAT course numbered 300 or higher.

⁴ This requirement can be met with any ECON course numbered 400 or higher or any A A E course numbered 600 or higher.

⁵ Working with an advisor, each student chooses a minimum of four courses in the area of research methodology. While students are required to develop basic research background in multiple research areas, most students ultimately specialize in the research area and methodology that best suits their skills and research interests. These courses can be drawn from inside or outside the School of Business.

⁶ Students also develop specialization in a related field such as economics, psychology, or sociology. Finally, students build a foundation in statistics that supports their research interests. Methodology courses in economics, agricultural economics, or psychology will generally provide a strong foundation.

⁷ This could include the following courses: OTM 990 Operations and Information Management-Independent Research Ph.D. Thesis, OTM 999 Reading and Research-Operations and Information

Management PhD, and other non-research coursework decided with their advisor.

Real Estate and Urban Land Economics Pathway ¹

The Wisconsin PhD Program in Real Estate and Urban Land Economics prepares individuals for careers in research and teaching at the university level. The program is academically rigorous and highly quantitative, providing a strong foundation in financial and economic theory, as well as in mathematical and statistical techniques. Through a customized program of elective courses and dissertation research, students specialize in a particular area of real estate economics and finance.

Code	Title	Credits
Real Estate Courses		
REAL EST 870	Advanced Real Estate Finance Theory (Advanced Urban Land Economics)	3
REAL EST 875	Advanced Urban Land Economics (Advanced Real Estate Finance Theory)	3
REAL EST 978	Research Seminar in Real Estate and Urban Land Economics (Real Estate Workshop) ²	5
Finance Courses		
FINANCE 920	Theory of Finance	3
FINANCE 970	Seminar- Investments (Ph.D.)	3
or FINANCE 971	Seminar-Corporate Finance (Ph.D.)	
or FINANCE 972	Topics Seminar-Finance PhD	
Economics Courses		
ECON 709	Economic Statistics and Econometrics I	3-4
ECON 710	Economic Statistics and Econometrics II	3-4
ECON 711	Economic Theory-Microeconomics Sequence	3
ECON 712	Economic Theory-Macroeconomics Sequence	3
ECON 713	Economic Theory: Microeconomics Sequence	3
ECON 714	Economic Theory; Macroeconomics Sequence	3
Other Requirement		
GEN BUS 933	Beginning a Research Career in Business	1
Breadth Requirement ³		9
Additional Coursework ⁴		4-6
Total Credits		51

¹ These pathways are internal to the program and represent different routes a student can follow to earn this degree. Pathway names do not appear in the Graduate School admissions application, and they will not appear on the transcript.

² Starting in the second semester, students take the real estate workshop. This workshop is designed to help students make progress toward completion of their second-year paper and their dissertation. Students are required to take this course 5 times for credit. Students are encouraged to audit this workshop during their first semester and while working on their dissertation.

³ At the beginning of the second year, each student proposes a set of three advanced courses that form a coherent package and enhance the student's research skills. Students are free to choose PhD level elective courses offered by the economics, finance, agricultural & applied economics, mathematics, or statistics departments. It may also be appropriate to choose courses in computer science, law, psychology, accounting, marketing, or other areas taught at UW-Madison.

⁴ This could include the following courses: ECON 715 Econometric Methods, ECON 899 Recent Advances in Economics, REAL EST 990 Real Estate Independent Research PhD Thesis, REAL EST 999 Reading and Research-Real Estate PhD, and other non-research coursework decided with their advisor.