

## BUSINESS, PH.D.

The School of Business Ph.D. program has a rich tradition of training scholars who can both enhance the intellectual understanding of business theory and practice and effectively transmit this knowledge to other scholars, business professionals, and students.

The high scholarly productivity and leadership of the school's 80 faculty members are regularly noted in national rankings. Recent studies of U.S. and worldwide scholarly research productivity rated School of Business faculty among the top graduate business schools in the country. In addition to world-renowned recognition for research, the School of Business faculty bring a variety of real-world experience to the program.

The Ph.D. degree provides advanced instruction that actively involves the student in research. School of Business doctoral candidates share with their professors the experience of exploring the frontiers of knowledge while acquiring the spirit as well as the methods of productive scholarship. At the time of enrollment, each student is assigned a major advisor to provide program counsel and to channel communication within and between School of Business departments. The mentoring relationship between the major professor and student is one of mutual agreement.

### DEGREE PROGRAM SPECIALIZATIONS

The School of Business Ph.D. program (<https://wsb.wisc.edu/programs-degrees/doctoral-phd/>) allows students to select from seven specialization tracks available along with a variety of minors. Each specialization permits the student, with the assistance and direction of a major advisor, to tailor a program based on research interests and career goals. The average time needed to complete the degree program is five years.

## ADMISSIONS

Admission consideration requires a four-year undergraduate degree or the equivalent, in any discipline, from an accredited institution. Work experience is not required. Applicants should have an undergraduate minimum grade point average (GPA) of 3.0 or higher on a 4.0 scale. In addition to academic credentials, test scores, personal achievements, motivation, communication skills (written and oral) and recommendation letters are considered in the admission process at both the master's and doctoral levels.

*Please note:* The Graduate Management Admission Test (GMAT) or the Graduate Record Exam (GRE), taken within five years of the starting term, is required of all applicants to the School of Business Ph.D. and M.S. programs. Also, all domestic (including Puerto Rico) and international applicants whose native language is not English must submit scores from the Test of English as a Foreign Language (TOEFL). A recommended minimum TOEFL score of 106 (New iBT) and 27 Speaking, obtained within two years of the intended starting term, is needed for admission consideration. International applicants who have completed a four-year bachelor's degree in a country where the official language is English may request a waiver of the TOEFL requirement. A master's degree from an English-speaking institution does not qualify for a waiver of the TOEFL, unless you have completed a minimum of 4 years of education (undergrad and graduate) in a country where English is the native

language. The school accepts IELTS and Pearson Test of English as substitutes for TOEFL.

To learn more about the application and admissions process, visit Ph.D. Admission Requirements (<https://wsb.wisc.edu/programs-degrees/doctoral-phd/admissions/admissions-requirements/>).

## HOW TO APPLY

Students interested in business degrees do not apply through the Graduate School application system and should instead refer to the School of Business Admissions page. ([https://admissions.bus.wisc.edu/?\\_ga=2.47171374.802634615.1518557744-1236773262.1518557744](https://admissions.bus.wisc.edu/?_ga=2.47171374.802634615.1518557744-1236773262.1518557744))

## FUNDING

### GRADUATE SCHOOL RESOURCES

Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information (<https://grad.wisc.edu/funding/>) is available from the Graduate School. Be sure to check with your program for individual policies and restrictions related to funding.

### PROGRAM RESOURCES

Prospective students should see the program website for funding information (<https://wsb.wisc.edu/programs-degrees/doctoral-phd/admissions/phd-financing/>).

## 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/<br>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 pathways<sup>1</sup> 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 Pathway<sup>1</sup>

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  |
|------------------------------|---|----------|
| <b>Seminar Requirement</b>   |   |          |
| ACCT I S 971                 | Seminar in Accounting Research <sup>2</sup> | 12       |
| <b>Economics Requirement</b> |   | <b>6</b> |

|   |   |              |
|---|---|--------------|
| ECON 711  | Economic Theory-Microeconomics Sequence             |              |
| 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)* |   |              |
| <b>Statistics and Research Methods Requirement</b>                        |   | <b>7-9</b>   |
| GEN BUS 933   | Beginning a Research Career in Business             |              |
| <i>Students also select two of the following:</i>                         |   |              |
| ECON 709  | Economic Statistics and Econometrics I              |              |
| ECON 710  | Economic Statistics and Econometrics II             |              |
| PSYCH 610   | Design and Analysis of Psychological Experiments I  |              |
| PSYCH 710   | Design and Analysis of Psychological Experiments II |              |
| A A E 636   | Applied Econometric Analysis I                      |              |
| A A E 637   | Applied Econometric Analysis II                     |              |
| <b>Breadth Requirement<sup>3</sup></b>                                    |   | <b>9</b>     |
| <b>Additional Coursework<sup>4</sup></b>                                  |   | <b>15-17</b> |
| <b>Total Credits</b>  |   | <b>51</b>    |

- 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.
- Students will need to take ACCT I S 971 Seminar in Accounting Research four times to meet this requirement.
- 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.
- 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 |
|--------------------------------------|--|---------|
| <b>*Approved Economics Electives</b> |  |         |
| 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/<br>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/<br>POP HLTH/<br>PUB AFFR 881 | Benefit-Cost Analysis  | 3   |

### Actuarial Science, Risk Management, and Insurance Pathway <sup>1</sup>

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    |
|--|--|------------|
| <b>Economic Theory Requirement</b>     |  | <b>6</b>   |
| Select one of the following sequences: |  |            |
| ECON 711<br>& ECON 713                 | Economic Theory-Microeconomics Sequence and Economic Theory: Microeconomics Sequence   |            |
| ECON 712<br>& ECON 714                 | Economic Theory-Macroeconomics Sequence and Economic Theory; Macroeconomics Sequence   |            |
| <b>Econometrics Requirement</b>        |  | <b>6-8</b> |
| Select one of the following sequences: |  |            |
| ECON 709<br>& ECON 710                 | Economic Statistics and Econometrics I and Economic Statistics and Econometrics II   |            |
| STAT 849<br>& 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<br>& A A E 637               | Applied Econometric Analysis I and Applied Econometric Analysis II   |            |

| <b>Other Requirements</b>                 |  |              |
|---|--|--------------|
| 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            |
| <b>Breadth Requirement <sup>2</sup></b>   |  | <b>6</b>     |
| <b>Additional Coursework <sup>3</sup></b> |  | <b>21-23</b> |
| <b>Total Credits</b>                      |  | <b>51</b>    |

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> 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 Pathway <sup>1</sup>

| Code                                      | Title  | Credits    |
|---|--|------------|
| <b>Finance Requirements</b>               |  |            |
| FINANCE 920                               | Theory of Finance <sup>2</sup>                 | 3          |
| FINANCE 970                               | Seminar- Investments (Ph.D.) <sup>2</sup>      | 3          |
| FINANCE 971                               | Seminar-Corporate Finance (Ph.D.) <sup>2</sup> | 3          |
| FINANCE 972                               | Topics Seminar-Finance PhD <sup>2</sup>        | 3          |
| FINANCE 973                               | Seminar-Workshop in Finance <sup>3</sup>       | 8          |
| <b>Econometrics Requirement</b>           |  |            |
| ECON 709                                  | Economic Statistics and Econometrics I         | 3-4        |
| ECON 710                                  | Economic Statistics and Econometrics II        | 3-4        |
| <b>Economics Requirement</b>              |  |            |
| 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          |
| <b>Breadth Requirement <sup>4</sup></b>   |  | <b>9</b>   |
| <b>Additional Coursework <sup>5</sup></b> |  | <b>2-4</b> |
| <b>Total Credits</b>                      |  | <b>51</b>  |

<sup>1</sup> 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.

- <sup>2</sup> These courses are taught in the lecture format.
- <sup>3</sup> Students are required to take this course 4 times for credit. This course is taught in the seminar format.
- <sup>4</sup> 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.
- <sup>5</sup> 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 Pathway <sup>1</sup>**

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   |
|---|--|-----------|
| <b>Ph.D. Seminars</b>   |  |           |
| 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         |
| <i>Other Requirements</i>   |  |           |
| GEN BUS 933   | Beginning a Research Career in Business        | 1         |
| <b>Advanced Research Methods and Statistics* (see list below for possible course options)</b>   |  | <b>18</b> |
| <b>Breadth</b>  |  | <b>15</b> |
| 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. |  |           |
| <b>Total Credits</b>  |  | <b>51</b> |

- 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.

<sup>1</sup> 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 |
|---|---|---------|
| <b>*Advanced Research Methods and Statistics</b>  |   |         |
| 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       |
| 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 712  | Economic Theory-Macroeconomics Sequence                 | 3       |
| ECON 717  | Applied Econometrics                                    | 3       |
| ECON 750  | Labor Economics   | 3       |
| ECON 751  | Survey of Institutional Aspects of Labor Economics      | 3       |
| ECON 873  | Seminar-International Economics                         | 2-3     |
| ED PSYCH 711  | Current Topics in Educational Psychology                | 1-3     |
| ED PSYCH/ COUN PSY/CURRIC/ ED POL/ELPA/ RP & SE 719   | Introduction to Qualitative Research                    | 3       |
| ED PSYCH 760  | Statistical Methods Applied to Education I              | 3       |
| ED PSYCH 761  | Statistical Methods Applied to Education II             | 3       |
| ED PSYCH 762  | Introduction to the Design of Educational Experiments   | 3       |
| ED PSYCH 763  | Regression Models in Education                          | 3       |

|                    |   |     |
|--------------------|---|-----|
| ED PSYCH/ELPA 827  | Surveys and Other Quantitative Data Collection Strategies       | 3   |
| ED PSYCH 960       | Structural Equation Modeling                                    | 3   |
| ED PSYCH 963       | Design & Analysis of Quasi-Experiments for Causal Inference     | 3   |
| ED PSYCH 964       | Hierarchical Linear Modeling                                    | 3   |
| ELPA/ED PSYCH 827  | Surveys and Other Quantitative Data Collection Strategies       | 3   |
| MARKETNG 971       | Seminar-Marketing PhD   | 3   |
| MATH/STAT 431      | Introduction to the Theory of Probability                       | 3   |
| MATH 521           | Analysis I  | 3   |
| POLI SCI 812       | Introduction to Statistical Methods in Political Science        | 3   |
| POLI SCI 813       | Multivariable Statistical Inference for Political Research      | 3   |
| POLI SCI 818       | Maximum Likelihood Estimation                                   | 3   |
| POLI SCI/A A E 835 | Game Theory and Political Analysis                              | 3   |
| POLI SCI 919       | Seminar-Advanced Methodology                                    | 3   |
| PSYCH 610          | Design and Analysis of Psychological Experiments I              | 4   |
| PSYCH 710          | Design and Analysis of Psychological Experiments II             | 4   |
| PSYCH 711          | Current Topics in Psychology                                    | 2-3 |
| R M I 930          | Seminar in Actuarial Science, Risk Management & Insurance II    | 3   |
| SOC/C&E SOC 360    | Statistics for Sociologists I                                   | 4   |
| SOC/C&E SOC 361    | Statistics for Sociologists II                                  | 3   |
| SOC 362            | Statistics for Sociologists III                                 | 3   |
| SOC 375            | Introduction to Mathematical Sociology                          | 3   |
| SOC 632            | Sociology of Organizations                                      | 3-4 |
| SOC/C&E SOC 652    | Sociology of Economic Institutions                              | 3   |
| SOC 952            | Seminar-Mathematical and Statistical Applications in Sociology  | 3   |
| STAT 849           | Theory and Application of Regression and Analysis of Variance I | 3   |

### Marketing Pathway <sup>1</sup>

| Code   | Title                                   | Credits      |
|--|---|--------------|
| <b>Seminar Requirement</b>   |   |              |
| MARKETNG 971   | Seminar-Marketing PhD <sup>2</sup>      | 6            |
| MARKETNG 972   | Seminar-Marketing PhD <sup>2</sup>      | 6            |
| GEN BUS 933  | Beginning a Research Career in Business | 1            |
| <b>Breadth Requirement* (see list below for possible course options)</b>                         |   | <b>12-16</b> |
| <b>Additional Coursework</b>   |   | <b>22-26</b> |
| Students will take additional credits of coursework, decided in consultation with their advisor. |   |              |
| <b>Total Credits</b>   |   | <b>51</b>    |

<sup>1</sup> 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.

<sup>2</sup> Students take each of these seminars twice.

| Code  | Title   | Credits |
|---|---|---------|
| <b>*Breadth Requirement</b>   |   |         |
| 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: |   |         |
| <i>Methods of Data Collection</i>   |   |         |
| ANTHRO 909  | Research Methods and Research Design in Cultural Anthropology | 3       |
| ART HIST/ AFROAMER 801  | Historiography, Theory and Methods in Visual Culture          | 3       |
| COM ARTS 762  | Communication Research Methods                                | 3       |
| COMP SCI 760  | Machine Learning  | 3       |
| COMP SCI 766  | Computer Vision   | 3       |
| ED PSYCH 762  | Introduction to the Design of Educational Experiments         | 3       |
| ED PSYCH 861  | Statistical Analysis and Design in Educational Research       | 3       |
| PSYCH 610   | Design and Analysis of Psychological Experiments I            | 4       |
| PSYCH 710   | Design and Analysis of Psychological Experiments II           | 4       |
| MARKETNG 710  | Marketing Research  | 3       |
| MARKETNG 805  | Qualitatively-Based Marketing Insights                        | 3       |
| MARKETNG 815  | Marketing Analytics   | 3       |
| SOC 735   | Ethnomethodology & Conversation Analysis                      | 3       |
| STAT 771  | Statistical Computing   | 3       |
| <i>Methods of Data Analysis</i>   |   |         |
| 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   |
| SOC 952                   | Seminar-Mathematical and Statistical Applications in Sociology  | 3   |
| STAT 609                  | Mathematical Statistics I                                       | 3   |
| STAT 610                  | Introduction to Statistical Inference                           | 4   |
| STAT/ECON/<br>GEN BUS 775 | Introduction to Bayesian Decision and Control I                 | 3   |
| STAT 849                  | Theory and Application of Regression and Analysis of Variance I | 3   |

### Operations and Information Management Pathway <sup>1</sup>

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 |
|---|---|---------|
| <b>Mathematical Foundation <sup>2</sup></b> |   |         |
|   |   | 3       |
| <b>Statistical Foundation <sup>3</sup></b>  |   |         |
|   |   | 3       |
| <b>Economics Foundation <sup>4</sup></b>    |   |         |
|   |   | 3       |
| <b>Research Methodology</b>                 |   |         |
| GEN BUS 933                                 | Beginning a Research Career in Business | 1       |
| <b>Research Electives <sup>5</sup></b>      |   |         |
|   |   | 12      |
| <b>Breadth Requirement <sup>6</sup></b>     |   |         |
|   |   | 9       |

|   |           |
|---|-----------|
| <b>Additional Coursework <sup>7</sup></b> | <b>20</b> |
| <b>Total Credits</b>                      | <b>51</b> |

- 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.
- This requirement can be met with MATH 340 Elementary Matrix and Linear Algebra or any MATH course numbered 500 or higher.
- This requirement can be met with any STAT course numbered 300 or higher.
- This requirement can be met with any ECON course numbered 400 or higher or any A A E course numbered 600 or higher.
- 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.
- 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.
- 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 <sup>1</sup>

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 |
|----------------------------|--|---------|
| <b>Real Estate Courses</b> |  |         |
| 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) <sup>2</sup> | 5       |
| <b>Finance Courses</b>     |  |         |
| 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  |         |
| <b>Economics Courses</b>   |  |         |
| 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          |
| <b>Other Requirement</b>                  |  |            |
| GEN BUS 933                               | Beginning a Research Career in Business  | 1          |
| <b>Breadth Requirement</b> <sup>3</sup>   |  | <b>9</b>   |
| <b>Additional Coursework</b> <sup>4</sup> |  | <b>4-6</b> |
| <b>Total Credits</b>                      |  | <b>51</b>  |

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> 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.

<sup>4</sup> 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.

earned ten years or more prior to admission to a doctoral degree is not allowed to satisfy requirements.

### **UW–Madison Undergraduate**

No credits from a UW–Madison undergraduate degree are allowed to count toward the degree.

### **UW–Madison University Special**

With program approval and payment of the difference in tuition (between special and graduate tuition), students are allowed to count no more than 9 credits of coursework numbered 300 or above taken as a UW–Madison special student. Coursework earned ten or more years prior to admission to a doctoral degree is not allowed to satisfy requirements.

### **PROBATION**

The Graduate School regularly reviews the record of any student who earned grades of BC, C, D, F, or Incomplete in a graduate course (300 or above), or grade of U in research credits. This review could result in academic probation with a hold on future enrollment or in being suspended from the Graduate School.

### **ADVISOR / COMMITTEE**

Every graduate student is required to have an advisor. An advisor is a faculty member, or sometimes a committee, responsible for providing advice regarding graduate studies. Ph.D. students must find a research advisor and form their committee. If a committee cannot be formed, the student will be counseled out of the Ph.D. program.

### **CREDITS PER TERM ALLOWED**

15 credits

### **TIME CONSTRAINTS**

Doctoral degree students who have been absent for ten or more consecutive years lose all credits that they have earned before their absence. Individual programs may count the coursework students completed prior to their absence for meeting program requirements; that coursework may not count toward Graduate School credit requirements.

A candidate for a doctoral degree who fails to take the final oral examination and deposit the dissertation within five years after passing the preliminary examination may be required to take another preliminary examination and to be admitted to candidacy a second time.

### **GRIEVANCES AND APPEALS**

These resources may be helpful in addressing your concerns:

- Bias or Hate Reporting (<https://doso.students.wisc.edu/bias-or-hate-reporting/>)
- Graduate Assistantship Policies and Procedures (<https://hr.wisc.edu/policies/gapp/#grievance-procedure>)
- Hostile and Intimidating Behavior Policies and Procedures (<https://hr.wisc.edu/hib/>)
  - Office of the Provost for Faculty and Staff Affairs (<https://facstaff.provost.wisc.edu/>)
- Dean of Students Office (<https://doso.students.wisc.edu/>) (for all students to seek grievance assistance and support)
- Employee Assistance (<http://www.eao.wisc.edu/>) (for personal counseling and workplace consultation around communication and conflict involving graduate assistants and other employees, post-doctoral students, faculty and staff)

## **POLICIES**

### **GRADUATE SCHOOL POLICIES**

The Graduate School's Academic Policies and Procedures (<https://grad.wisc.edu/acadpolicy/>) provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

### **MAJOR-SPECIFIC POLICIES**

#### **PRIOR COURSEWORK**

##### **Graduate Work from Other Institutions**

With program approval, students are allowed to count no more than 9 credits of graduate coursework from other institutions. Coursework

- Employee Disability Resource Office (<https://employee disabilities.wisc.edu/>) (for qualified employees or applicants with disabilities to have equal employment opportunities)
- Graduate School (<https://grad.wisc.edu/>) (for informal advice at any level of review and for official appeals of program/departmental or school/college grievance decisions)
- Office of Compliance (<https://compliance.wisc.edu/>) (for class harassment and discrimination, including sexual harassment and sexual violence)
- Office of Student Conduct and Community Standards (<https://conduct.students.wisc.edu/>) (for conflicts involving students)
- Ombuds Office for Faculty and Staff (<http://www.ombuds.wisc.edu/>) (for employed graduate students and post-docs, as well as faculty and staff)
- Title IX (<https://compliance.wisc.edu/titleix/>) (for concerns about discrimination)

**Any student who feels that they have been mistreated by a faculty or staff member has the right to lodge a complaint. Complaints may concern course grades, classroom treatment, program admission, or other issues. To ensure a prompt and fair hearing of any complaint and to protect both the student's rights and the person at whom the complaint is addressed, the grievance procedures below are used in the Wisconsin School of Business.**

The person whom the complaint is directed against must be an employee of the School of Business. Any student or potential student may use these procedures unless other campus rules or contracts cover the complaint:

1. If the student feels comfortable/safe doing so, the student should first talk with the person against whom the grievance is directed. Most issues can be settled at this level. If the complaint is directed against a teaching assistant (TA) and the student is not satisfied after discussion of the grievance with the TA, the next step would be to talk to the TA's supervisor, who is usually the course professor. If the complaint is still not resolved satisfactorily, the student may continue to step 2.
2. If the complaint involves an academic department, the student should contact the chair of the department. The chair will attempt to resolve the problem informally. If this cannot be done to the student's satisfaction, the student may submit the grievance to the chair in writing. This must be done within 60 calendar days of the alleged unfair treatment.
  - a. If the complaint does not involve an academic department, the procedure outlined in Step 4 below should be followed.
3. On receipt of a written complaint, the chair will refer the matter to a departmental committee, which will obtain a written response from the person at whom the complaint is directed. This response shall be shared with the person filing the grievance. The chair will provide a written decision within 30 days to the student on the action taken by the committee.
4. If either party is not satisfied with the decision, they have five working days from receipt of the decision to contact the dean's office (at the number below), indicating the intention to appeal. If the complaint does not involve an academic department in the school, the student must contact the dean's office within 60 calendar days of the alleged unfair treatment.
5. In either case, there will be an attempt to resolve the issue informally by the appropriate associate dean. If this cannot be done, the complaint can be filed in writing with the Office of the Dean. This must be done within 10 working days of the time

the appealing party was notified that informal resolution was unsuccessful.

6. On receipt of such a written complaint, the Chief Diversity and Inclusion Officer will convene a subcommittee of relevant stakeholders pending the nature of the issue. This subcommittee may ask for additional information from the parties involved and may hold a hearing at which both parties will be asked to speak separately. The subcommittee will then make a written recommendation to the dean of the School of Business who will render a decision. Unless a longer time is negotiated, this written decision shall be made within 20 working days from when the grievance was filed with the Office of the Dean.

*Questions about these procedures can be directed to the School of Business, Office of the Dean, 4339 Grainger, 975 University Avenue, 608-262-7867.*

*State law contains additional provisions regarding discrimination and harassment. Wisconsin Statutes 36.12 reads, in part: "No student may be denied admission to, participation in or the benefits of, or be discriminated against in any service, program, course or facility of the system or its institutions or center because of the student's race, color, creed, religion, sex, national origin, disability, ancestry, age, sexual orientation, pregnancy, marital status or parental status." In addition, UW-System prohibits discrimination based on gender identity or gender expression. Students have the right to file discrimination and harassment complaints with the Office of Compliance, 361 Bascom Hall, 608-265-6018, [uwcomplianceoffice@wisc.edu](mailto:uwcomplianceoffice@wisc.edu).*

The Graduate School has procedures for students wishing to appeal a grievance decision at the school/college level. These policies are described in the Graduate School's Academic Policies and Procedures: <https://grad.wisc.edu/documents/grievances-and-appeals/>

## OTHER

Virtually all Ph.D. students in business are funded at a level that guarantees a minimum of five years of the following: Full tuition remission; scholarship funding; a monthly stipend; comprehensive family health insurance plan, travel funding for students presenting at academic conferences.

## PROFESSIONAL DEVELOPMENT

### GRADUATE SCHOOL RESOURCES

Take advantage of the Graduate School's professional development resources (<https://grad.wisc.edu/pd/>) to build skills, thrive academically, and launch your career.

## LEARNING OUTCOMES

1. Articulate frontiers, limits and challenges with respect to theory, knowledge and practice within the field of study.
2. Create research and scholarship that makes a substantive contribution within the field of study or to the practice of the field.
3. Develop a proficiency in methodology relevant to the field of study.
4. Articulate complex or ambiguous ideas in a clear and understandable manner to students, colleagues, and society.
5. Understand and adhere to ethical and professional conduct in a diverse scholarly environment.



## PEOPLE

To find more information about the faculty of the Wisconsin School of Business and their research interests please visit:

Accounting and Information Systems (<https://wsb.wisc.edu/faculty-research/academic-departments/accounting-information-systems/#faculty-and-research>)

Finance, Investment, and Banking (<https://wsb.wisc.edu/faculty-research/academic-departments/finance-investment-banking/>)

Management and Human Resources (<https://wsb.wisc.edu/faculty-research/academic-departments/management-human-resources/>)

Marketing (<https://wsb.wisc.edu/faculty-research/academic-departments/marketing/>)

Operations and Information Management (<https://wsb.wisc.edu/faculty-research/academic-departments/operations-information-management/>)

Real Estate and Urban Land Economics (<https://wsb.wisc.edu/faculty-research/academic-departments/real-estate/>)

Risk and Insurance (<https://wsb.wisc.edu/faculty-research/academic-departments/risk-insurance/>)

## ACCREDITATION

### ACCREDITATION

AACSB International—The Association to Advance Collegiate Schools of Business (<http://www.aacsb.edu/>)

Accreditation status: Accredited. Next accreditation review: 2021–2022.