Twin Cities Campus

Business Administration Ph.D.

Curtis L. Carlson School of Management - Adm

Curtis L. Carlson School of Management

Link to a list of faculty for this program.

Contact Information:
Carlson School of Management, Business Administration PhD Program, Suite 4-205, 321 19th Avenue South, Minneapolis, MN 55455
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Website: http://carlsonschool.umn.edu/degrees/phd

- Program Type: Doctorate
- Requirements for this program are current for Fall 2020
- Length of program in credits: 64 to 68
- This program does not require summer semesters for timely completion.
- Degree: Doctor of Philosophy

Along with the program-specific requirements listed below, please read the General Information section of the catalog website for requirements that apply to all major fields.

This program offers full-time advanced graduate education for students seeking academic placement at leading universities or research-oriented positions in business or government. The program is for individuals who have the intellectual capacity for advanced study, enjoy independent research and analytical thinking, and who wish to master a discipline within business administration.

Students choose to concentrate in one of seven areas of specialization: accounting; finance; information and decision sciences; marketing; supply chain and operations; strategic management and entrepreneurship; and work and organizations.

Accreditation

This program is accredited by Association to Advance Collegiate Schools of Business (AACSB)

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

Applicants must have completed a four-year undergraduate degree in any relevant field of study.

Other requirements to be completed before admission:
Admission depends on the applicant's grades, test scores (GMAT or GRE), and strength of both the letters of recommendation and the statement of purpose.

Preferred minimum test scores are 650 total on the GMAT or 320 total on the GRE general test.

Special Application Requirements:
Applicants should submit the following items to the Carlson School of Management PhD program office: (1) an official copy of the GMAT or GRE scores taken within the last five years; and (2) official TOEFL or IELTS scores (international applicants only) from a test taken within the last two years. All other application materials (official application, application fee, statement of purpose, resume/vita, three letters of recommendation and transcripts) should be entered directly or uploaded into the online application system. The application deadline for all areas of concentration is December 15 each year for fall admission consideration. Applications are evaluated on a rolling basis beginning in mid-January. Admission decisions continue until available positions are filled.

Applicants must submit their test score(s) from the following:

- GRE
- GMAT
  - Total score: 650

International applicants must submit score(s) from one of the following tests:

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- TOEFL
  - Internet Based - Total Score: 100
  - Internet Based - Speaking Score: 25
- IELTS
  - Total Score: 7

The preferred English language test is Test of English as Foreign Language

Key to test abbreviations(GRE, GMAT, TOEFL, IELTS).

For an online application or for more information about graduate education admissions, see the General Information section of the catalog website.

Program Requirements

24 to 28 credits are required in the major.
16 credits are required outside the major.
24 thesis credits are required.

This program may be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 3.30 is required for students to remain in good standing.

At least 4 semesters must be completed before filing a Degree Program Form.

Degree requirements vary by area of concentration. Each student's coursework is determined in consultation with an advisor. Some areas may require a first-year examination or presentation.

Areas of Concentration

Accounting

Students pursuing the accounting concentration work under one of two accounting research paradigms: analytic or empirical.

Required Accounting Coursework

Take all of the following for 24 credits:

ACCT 8801 - Topics in Empirical Research I (2.0 cr)
ACCT 8802 - Topics in Empirical Research II (2.0 cr)
ACCT 8803 - Topics in Empirical Research III (2.0 cr)
ACCT 8811 - Topics in Information Economics I (2.0 cr)
ACCT 8812 - Topics in Information Economics II (2.0 cr)
ACCT 8813 - Topics in Information Economics III (2.0 cr)
ACCT 8821 - Topics in Capital Markets I (2.0 cr)
ACCT 8822 - Topics in Capital Markets II (2.0 cr)
ACCT 8823 - Topics in Capital Markets III (2.0 cr)
ACCT 8831 - Topics in Analytical Research I (2.0 cr)
ACCT 8832 - Analytical Research Topics II (2.0 cr)
ACCT 8833 - Topics in Analytical Research III (2.0 cr)

Supporting/Methodology Coursework

Courses must be chosen in consultation with the advisor or PhD coordinator. Suggested coursework is listed below.
Take 16 or more credit(s) from the following:

- APEC 8001 - Applied Microeconomic Analysis of Consumer Choice and Consumer Demand (2.0 cr)
- APEC 8002 - Applied Microeconomic Analysis of Production and Choice Under Uncertainty (2.0 cr)
- APEC 8003 - Applied Microeconomic Analysis of Game Theory and Information (2.0 cr)
- APEC 8004 - Applied Microeconomic Analysis of Social Choice and Welfare (2.0 cr)
- APEC 8211 - Econometric Analysis I (2.0 cr)
- APEC 8212 - Econometric Analysis II (2.0 cr)
- CSOM 8101 - Methods and Topics in Applied Economics (2.0 - 4.0 cr)
- ECON 8003 - Microeconomic Analysis (2.0 cr)
- ECON 8004 - Microeconomic Analysis (2.0 cr)
- ECON 8205 - Applied Econometrics (2.0 cr)
- FINA 8802 - Theory of Capital Markets I: Discrete Time (2.0 cr)
- FINA 8812 - Corporate Finance I (2.0 cr)
- FINA 8813 - Corporate Finance II (2.0 cr)

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•FINA 8822 - Empirical Methods in Finance (2.0 cr)
•FINA 8823 - Empirical Corporate Finance (2.0 cr)
•MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
•PUBH 6325 - Data Processing with PC-SAS (1.0 cr)
•STAT 5102 - Theory of Statistics II (4.0 cr)
•STAT 8101 - Theory of Statistics 1 (3.0 cr)
•ACCT 8892 - Readings in Accounting (1.0 - 8.0 cr)
•ACCT 8894 - Research in Accounting (1.0 - 8.0 cr)

Thesis Credits

Take at least 24 doctoral thesis credits.
BA 8888 - Thesis Credit: Doctoral (1.0 - 24.0 cr)

-OR-

Finance

Finance is viewed as a subfield of economics. Students achieve a strong foundation in economic theory and empirical methods.

Required Finance Coursework

Take at least 20 credits from the following list. FINA 8810, 8820, and 8890 may be taken more than once.
FINA 8802 - Theory of Capital Markets I: Discrete Time (2.0 cr)
FINA 8803 - Theory of Capital Markets II: Continuous Time (2.0 cr)
FINA 8804 - Advanced Continuous Time Finance (2.0 cr)
FINA 8810 - Topics in Asset Pricing (2.0 cr)
FINA 8812 - Corporate Finance I (2.0 cr)
FINA 8813 - Corporate Finance II (2.0 cr)
FINA 8820 - Topics in Corporate Finance (2.0 cr)
FINA 8822 - Empirical Methods in Finance (2.0 cr)
FINA 8823 - Empirical Corporate Finance (2.0 cr)
FINA 8890 - Seminar: Finance Topics (2.0 - 4.0 cr)

Additional Required Finance Coursework (8 credits)

Take the following sequence of economics courses for at least 8 credits.

8101-04 Sequence

ECON 8101 - Microeconomic Theory (2.0 cr)
ECON 8102 - Microeconomic Theory (2.0 cr)
ECON 8103 - Microeconomic Theory (2.0 cr)
ECON 8104 - Microeconomic Theory (2.0 cr)

Supporting/Methdology Coursework (16 credits)

Courses must be chosen in consultation with the advisor or PhD coordinator. Suggested coursework is listed below.
Take 16 or more credit(s) from the following:
•ACCT 8812 - Topics in Information Economics II (2.0 cr)
•ACCT 8831 - Topics in Analytical Research I (2.0 cr)
•ACCT 8832 - Analytical Research Topics II (2.0 cr)
•APEC 8211 - Econometric Analysis I (2.0 cr)
•APEC 8212 - Econometric Analysis II (2.0 cr)
•ECON 8003 - Microeconomic Analysis (2.0 cr)
•ECON 8004 - Microeconomic Analysis (2.0 cr)
•ECON 8101 - Microeconomic Theory (2.0 cr)
•ECON 8102 - Microeconomic Theory (2.0 cr)
•ECON 8103 - Microeconomic Theory (2.0 cr)
•ECON 8104 - Microeconomic Theory (2.0 cr)
•ECON 8105 - Macroeconomic Theory (2.0 cr)
•ECON 8106 - Macroeconomic Theory (2.0 cr)
•ECON 8107 - Macroeconomic Theory (2.0 cr)
•ECON 8108 - Macroeconomic Theory (2.0 cr)
•ECON 8181 - Advanced Topics in Microeconomics (2.0 cr)
•ECON 8182 - Advanced Topics in Microeconomics (2.0 cr)
•ECON 8185 - Advanced Topics in Macroeconomics (2.0 cr)
•ECON 8191 - Workshop in Mathematical Economics (1.0 cr)
•ECON 8201 - Econometric Analysis (2.0 cr)
•ECON 8205 - Applied Econometrics (2.0 cr)
•ECON 8206 - Applied Econometrics (2.0 cr)
•ECON 8207 - Applied Econometrics (2.0 cr)
•ECON 8208 - Applied Econometrics (2.0 cr)
•ECON 8211 - Econometrics (2.0 cr)
•ECON 8212 - Econometrics (2.0 cr)
•ECON 8501 - Wages and Employment (2.0 cr)
•ECON 8601 - Industrial Organization and Government Regulation (2.0 cr)
•ECON 8602 - Industrial Organization and Government Regulation (2.0 cr)

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•ECON 8701 - Monetary Economics (2.0 cr)
•ECON 8702 - Monetary Economics (2.0 cr)
•ECON 8704 - Financial Economics (2.0 cr)
•ECON 8705 - Financial Economics (2.0 cr)
•MATH 8601 - Real Analysis (3.0 cr)
•FINA 8892 - Independent Study in Finance (1.0 - 8.0 cr)
•FINA 8894 - Directed Research in Finance (1.0 - 8.0 cr)

Thesis Credits (24 credits minimum)

Take at least 24 doctoral thesis credits.
BA 8888 - Thesis Credit: Doctoral (1.0 - 24.0 cr)

-OR-

Information and Decision Sciences

Required IDSc PhD Coursework (15 credits)

Take the following courses:
IDSC 8511 - Conceptual Topics and Research Methods in Information and Decision Sciences (3.0 cr)
IDSC 8521 - System Development (3.0 cr)
IDSC 8531 - Organizational Theory and Research in Information Systems (3.0 cr)
IDSC 8541 - Introduction to Economics of Information Systems (3.0 cr)
IDSC 8721 - Behavioral Decision Theory (3.0 cr)

Additional IDSc Required Coursework (2 credits)

Take a minimum of 2 credits from the following. 8801 may be repeated.
Take 2 or more credit(s) from the following:
•IDSC 8620 - Data Mining and Personalization (3.0 cr)
•IDSC 8801 - Research Seminar in Information and Decision Sciences (2.0 cr)

Additional Required Coursework (8 credits minimum)

Take the following courses for a total of 8 credits:
APEC 8211 - Econometric Analysis I (2.0 cr)
APEC 8212 - Econometric Analysis II (2.0 cr)

Supporting/Methodology Coursework (16 credits minimum)

Courses must be chosen in consultation with the advisor or PhD coordinator. Suggested coursework is listed below.
Take 16 or more credit(s) from the following:
•APEC 8001 - Applied Microeconomic Analysis of Consumer Choice and Consumer Demand (2.0 cr)
•APEC 8002 - Applied Microeconomic Analysis of Production and Choice Under Uncertainty (2.0 cr)
•APEC 8003 - Applied Microeconomic Analysis of Game Theory and Information (2.0 cr)
•APEC 8206 - Dynamic Optimization: Applications in Economics and Management (3.0 cr)
•CSCI 5980 - Special Topics in Computer Science (1.0 - 3.0 cr)
•CSCI 8551 - Intelligent Agents (3.0 cr)
•CSCI 8980 - Special Advanced Topics in Computer Science (1.0 - 3.0 cr)
•CSOM 8101 - Methods and Topics in Applied Economics (2.0 - 4.0 cr)
•ECON 8581 - Advanced Topics in Labor Economics (2.0 cr)
•ECON 8601 - Industrial Organization and Government Regulation (2.0 cr)
•ECON 8602 - Industrial Organization and Government Regulation (2.0 cr)
•EPSY 8252 - Statistical Methods in Education II (3.0 cr)
•EPSY 8264 - Advanced Multiple Regression Analysis (3.0 cr)
•EPSY 8267 - Applied Multivariate Analysis (3.0 cr)
•EPSY 8268 - Hierarchical Linear Modeling in Educational Research (3.0 cr)
•MGMT 8101 - PhD Seminar: Theory Building (2.0 cr)
•MGMT 8301 *{Inactive}*(4.0 cr)
•MGMT 8302 - Seminar in Organizational Theory (4.0 cr)
•PSY 5018H - Mathematical Models of Human Behavior (3.0 cr)
•PSY 5862 - Psychological Measurement: Theory and Methods (3.0 cr)
•PSY 5993 - Research Laboratory in Psychology (3.0 cr)
•PSY 8201 - Social Cognition (3.0 cr)
•PSY 8960 - Graduate Seminar in Psychology (1.0 - 4.0 cr)
•PUBH 6470 *{Inactive}*(3.0 cr)
•PUBH 7430 - Statistical Methods for Correlated Data (3.0 cr)
•PUBH 8442 - Bayesian Decision Theory and Data Analysis (3.0 cr)
•SCO 8652 *{Inactive}*(3.0 cr)
•SCO 8721 *{Inactive}*(3.0 cr)
•IDSC 8892 - Readings in Information and Decision Sciences (1.0 - 8.0 cr)
•IDSC 8894 - Graduate Research in Information and Decision Sciences (1.0 - 8.0 cr)

Thesis Credits (24 credits minimum)

Take at least 24 doctoral thesis credits.
BA 8888 - Thesis Credit: Doctoral (1.0 - 24.0 cr)

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-OR-

Marketing

Students pursuing the marketing concentration focus on one of two tracks: consumer behavior or marketing quantitative/marketing strategy.

Consumer Behavior Concentration (24 credits minimum)

Take all of the following courses, including at least 8 credits of MKTG 8810, for a total of 18 credits. In addition, take at least 6 credits from the quantitative/marketing strategy concentration course list.

Take 18 or more credit(s) from the following:

- MKTG 8809 - Consumer Behavior Research Methods (2.0 cr)
- MKTG 8810 - Consumer Behavior Special Topics (2.0 cr)
- MKTG 8811 - Consumer Attitudes and Persuasion I (2.0 cr)
- MKTG 8812 - Consumer Attitudes and Persuasion II (2.0 cr)
- MKTG 8813 - Consumer Judgment and Decision Making I (2.0 cr)
- MKTG 8814 - Decisions Making, Emotions and Unconscious Processes (2.0 cr)

or **Quantitative/Marketing Strategy Concentration (24 credits minimum)**

Take 12 credits, which can include up to 4 credits of MKTG 8890, from the following list. In addition, take at least 12 credits from the consumer behavior concentration course list.

Take 12 or more credit(s) from the following:

- MKTG 8831 - Seminar: Inter-Organizational Relations (4.0 cr)
- MKTG 8842 - Quantitative Modeling I (2.0 cr)
- MKTG 8843 - Empirical Quantitative Models (4.0 cr)
- MKTG 8851 - Seminar: Marketing Management and Strategy I (2.0 cr)
- MKTG 8852 - Marketing Management & Strategy II (2.0 cr)
- MKTG 8890 - Seminar: Marketing Topics (1.0 - 4.0 cr)

Supporting/Methodology Coursework (16 credits minimum)

Courses must be chosen in consultation with the advisor or PhD coordinator. Suggested courses are listed below.

ACCT 8811 - Topics in Information Economics I (2.0 cr)
ACCT 8831 - Topics in Analytical Research I (2.0 cr)
APEC 8211 - Econometric Analysis I (2.0 cr)
APEC 8212 - Econometric Analysis II (2.0 cr)
CSOM 8101 - Methods and Topics in Applied Economics (2.0 - 4.0 cr)
ECON 8003 - Microeconomic Analysis (2.0 cr)
ECON 8004 - Microeconomic Analysis (2.0 cr)
ECON 8101 - Microeconomic Theory (2.0 cr)
ECON 8103 - Microeconomic Theory (2.0 cr)
ECON 8104 - Microeconomic Theory (2.0 cr)
ECON 8118 - Noncooperative Game Theory (2.0 cr)
ECON 8119 - Cooperative Game Theory (2.0 cr)
ECON 8191 - Workshop in Mathematical Economics (1.0 cr)
ECON 8205 - Applied Econometrics (2.0 cr)
ECON 8206 - Applied Econometrics (2.0 cr)
ECON 8207 - Applied Econometrics (2.0 cr)
ECON 8208 - Applied Econometrics (2.0 cr)
ECON 8211 - Econometrics (2.0 cr)
ECON 8212 - Econometrics (2.0 cr)
ECON 8601 - Industrial Organization and Government Regulation (2.0 cr)
ECON 8602 - Industrial Organization and Government Regulation (2.0 cr)
ECON 8603 - Industrial Organization and Government Regulation (2.0 cr)
EPSY 5221 - Principles of Educational and Psychological Measurement (3.0 cr)
EPSY 5245 - Advanced Survey Data Analysis for Categorical and Rating Scale Data (1.0 cr)
EPSY 5261 - Introductory Statistical Methods (3.0 cr)
EPSY 5262 - Intermediate Statistical Methods (3.0 cr)
EPSY 8251 - Statistical Methods in Education I (3.0 cr)
EPSY 8252 - Statistical Methods in Education II (3.0 cr)
EPSY 8264 - Advanced Multiple Regression Analysis (3.0 cr)
EPSY 8267 - Applied Multivariate Analysis (3.0 cr)
IDSC 8721 - Behavioral Decision Theory (3.0 cr)
MSBA 6441 - Causal Inference via Econometrics and Experimentation (3.0 cr)
PSY 5202 - Attitudes and Social Behavior (3.0 cr)
PSY 5204 - Psychology of Interpersonal Relationships (3.0 cr)
PSY 5207 - Personality and Social Behavior (3.0 cr)
PSY 5862 - Psychological Measurement: Theory and Methods (3.0 cr)
PSY 8203 - Impression Management (3.0 cr)
PSY 8208 - Social Psychology: The Self (3.0 cr)
PSY 8209 - Research Methods in Social Psychology (3.0 cr)
PSY 8935 - Readings in Behavioral Genetics and Individual Differences Psychology (1.0 cr)

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PSY 8960 - Graduate Seminar in Psychology (1.0 - 4.0 cr)
STAT 5021 - Statistical Analysis (4.0 cr)
STAT 5303 - Designing Experiments (4.0 cr)
MKTG 8892 - Readings in Marketing (1.0 - 8.0 cr)
MKTG 8894 - Graduate Research in Marketing (1.0 - 8.0 cr)

Thesis Credits

Take at least 24 doctoral thesis credits.
BA 8888 - Thesis Credit: Doctoral (1.0 - 24.0 cr)

-OR-

Supply Chain and Operations

Students complete coursework in the areas of operations and supply chain management.

Required SCO Coursework (25 credits minimum)

Take the following courses for a total of 25 credits:
SCO 8651 *{Inactive}*(3.0 cr)
SCO 8652 *{Inactive}*(3.0 cr)
SCO 8711 *{Inactive}*(3.0 cr)
SCO 8721 *{Inactive}*(3.0 cr)
SCO 8735 *{Inactive}*(3.0 cr)
SCO 8745 *{Inactive}*(3.0 cr)
SCO 8755 *{Inactive}*(3.0 cr)
MGMT 8101 - PhD Seminar: Theory Building (2.0 cr)

Supporting/Methodology Coursework (16 credits minimum)

Courses must be chosen in consultation with the advisor or PhD coordinator. Suggested coursework is listed below.
Take 16 or more credit(s) from the following:
•APEC 8206 - Dynamic Optimization: Applications in Economics and Management (3.0 cr)
•APEC 8211 - Econometric Analysis I (2.0 cr)
•APEC 8212 - Econometric Analysis II (2.0 cr)
•APEC 8602 - Economics of the Environment (3.0 cr)
•EPSY 8252 - Statistical Methods in Education II (3.0 cr)
•EPSY 8266 - Statistical Analysis Using Structural Equation Methods (3.0 cr)
•EPSY 8268 - Hierarchical Linear Modeling in Educational Research (3.0 cr)
•GRAD 8101 - Teaching in Higher Education (3.0 cr)
•HRIR 8802 - Core Seminar: Organizational Behavior (4.0 cr)
•MGMT 8302 - Seminar in Organizational Theory (4.0 cr)
•MKTG 8842 - Quantitative Modeling I (2.0 cr)
•MKTG 8843 - Empirical Quantitative Models (4.0 cr)
•PA 5032 - Applied Regression (2.0 cr)
•PA 5033 - Multivariate Techniques (2.0 cr)
•PUBH 7405 - Biostatistical Inference I (4.0 cr)
•PUBH 7406 - Biostatistical Inference II (3.0 cr)
•PUBH 7440 - Introduction to Bayesian Analysis (3.0 cr)
•PUBH 7475 - Statistical Learning and Data Mining (3.0 cr)
•PUBH 8475 - Statistical Learning and Data Mining (3.0 cr)
•PUBH 8804 - Advanced Quantitative Methods Seminar (3.0 cr)
•SOC 5811 - Social Statistics for Graduate Students (4.0 cr)
•STAT 5021 - Statistical Analysis (4.0 cr)
•STAT 5101 - Theory of Statistics I (4.0 cr)
•STAT 5102 - Theory of Statistics II (4.0 cr)
•STAT 5302 - Applied Regression Analysis (4.0 cr)
•STAT 5421 - Analysis of Categorical Data (3.0 cr)
•STAT 5701 - Statistical Computing (3.0 cr)
•STAT 8051 - Advanced Regression Techniques: linear, nonlinear and nonparametric methods (3.0 cr)
•STAT 8311 - Linear Models (3.0 cr)
•SCO 8892 - Readings in Supply Chain and Operations (1.0 - 8.0 cr)
•SCO 8894 - Research in Supply Chain and Operations (1.0 - 8.0 cr)

Thesis Credits (24 credits minimum)

Take at least 24 doctoral thesis credits.
BA 8888 - Thesis Credit: Doctoral (1.0 - 24.0 cr)

-OR-

Strategic Management and Entrepreneurship

Students focus on leadership, strategy, and entrepreneurship connecting the external worlds of competition and collaboration.

Required SME Coursework (12 credits minimum)

Take all of the following courses, including 4 credits of MGMT 8401.
MGMT 8302 - Seminar in Organizational Theory (4.0 cr)

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MGMT 8401 - Strategy I (2.0 cr)
MGMT 8402 - Seminar in Behavioral Strategy (2.0 cr)

Additional Required Coursework (11 credits)

Take 11 or more credit(s) from the following:

- APEC 8211 - Econometric Analysis I (2.0 cr)
- GRAD 8101 - Teaching in Higher Education (3.0 cr)
- MGMT 8101 - PhD Seminar: Theory Building (2.0 cr)

SME Electives (4 credits)

Take one of the following courses:

MGMT 8202 - Seminar in International Management (2.0 cr)
or MGMT 8501 - Seminar in Entrepreneurship (4.0 cr)

Supporting/Methodology Coursework (16 credits minimum)

Courses must be chosen in consultation with the advisor or PhD coordinator. Suggested coursework is listed below.

Take 16 or more credit(s) from the following:

- APEC 8001 - Applied Microeconomic Analysis of Consumer Choice and Consumer Demand (2.0 cr)
- APEC 8003 - Applied Microeconomic Analysis of Game Theory and Information (2.0 cr)
- APEC 8004 - Applied Microeconomic Analysis of Social Choice and Welfare (2.0 cr)
- APEC 8211 - Econometric Analysis I (2.0 cr)
- APEC 8212 - Econometric Analysis II (2.0 cr)
- CSCI 5980 - Special Topics in Computer Science (1.0 - 3.0 cr)
- CSOM 8101 - Methods and Topics in Applied Economics (2.0 - 4.0 cr)
- EPSY 8251 - Statistical Methods in Education I (3.0 cr)
- EPSY 8252 - Statistical Methods in Education II (3.0 cr)
- EPSY 8264 - Advanced Multiple Regression Analysis (3.0 cr)
- EPSY 8268 - Hierarchical Linear Modeling in Educational Research (3.0 cr)
- EPSY 8282 - Statistical Analysis of Longitudinal Data (3.0 cr)
- FINA 8823 - Empirical Corporate Finance (2.0 cr)
- GRAD 8101 - Teaching in Higher Education (3.0 cr)
- HINF 5502 - Python Programming Essentials for the Health Sciences (1.0 cr)
- MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
- MGMT 8892 - Readings in Management Theory and Administration (1.0 - 8.0 cr)
- MGMT 8894 - Graduate Research in Management Theory and Administration (1.0 - 8.0 cr)
- MKTG 8831 - Seminar: Inter-Organizational Relations (4.0 cr)
- PA 8302 - Applied Policy Analysis (4.0 cr)
- POL 8106 - Quantitative Political Science I (3.0 cr)
- PUBH 8804 - Advanced Quantitative Methods Seminar (3.0 cr)
- PUBH 8811 - Research Methods in Health Care (3.0 cr)
- SOC 8412 - Social Network Analysis: Theory and Methods (3.0 cr)
- SOC 8701 - Sociological Theory (4.0 cr)
- SOC 8721 - Social Psychology: Micro-Sociological Approaches to Inequalities and Identities (3.0 cr)
- SOC 8735 - Sociology of Culture (3.0 cr)
- SOC 8801 - Sociological Research Methods (4.0 cr)
- SOC 8811 - Advanced Social Statistics (4.0 cr)
- SOC 8890 - Advanced Topics in Research Methods (2.0 - 3.0 cr)
- STAT 8051 - Advanced Regression Techniques: linear, nonlinear and nonparametric methods (3.0 cr)

Thesis Credits (24 credits minimum)

Take at least 24 doctoral thesis credits.

BA 8888 - Thesis Credit: Doctoral (1.0 - 24.0 cr)

-OR-

Work and Organizations

Students complete multidisciplinary coursework covering organizational behavior, human resource management, organizational economics, personnel economics, labor relations, and related areas.

Required WOrg Coursework (24-28 credits)

Take 24-28 credits from the following list. Take HRIR 8820 2-4 times for a total of 4-8 credits. Take HRIR 8825 4 times for a total of 4 credits.

Take 24 - 28 credit(s) from the following:

- HRIR 8801 - Core Seminar: Fundamentals of Economic Analysis for Work and Organizations (4.0 cr)
- HRIR 8802 - Core Seminar: Organizational Behavior (4.0 cr)
- HRIR 8803 - Core Seminar: Fundamentals of HR Research (4.0 cr)
- HRIR 8812 - Core Seminar: Research Methods in Work and Organizations (4.0 cr)
- HRIR 8820 - Seminar: Special Topics in Work and Organizations Research (2.0 cr)
- HRIR 8825 - Research Practicum/Workshop (1.0 cr)
- PSY 5862 - Psychological Measurement: Theory and Methods (3.0 cr)
- **Supporting/Methodology Coursework (16 credits minimum)**

  Courses must be chosen in consultation with the advisor or PhD coordinator. Suggested coursework is listed below.

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Take 16 or more credit(s) from the following:
- APEC 8003 - Applied Microeconomic Analysis of Game Theory and Information (2.0 cr)
- APEC 8211 - Econometric Analysis I (2.0 cr)
- APEC 8212 - Econometric Analysis II (2.0 cr)
- APEC 8501 - Labor Economics I (2.0 cr)
- APEC 8502 - Labor Economics II (2.0 cr)
- CSOM 8101 - Methods and Topics in Applied Economics (2.0 - 4.0 cr)
- ECON 8205 - Applied Econometrics (2.0 cr)
- ECON 8206 - Applied Econometrics (2.0 cr)
- EPSY 5247 - Qualitative Methods in Educational Psychology (3.0 cr)
- EPSY 5261 - Introductory Statistical Methods (3.0 cr)
- EPSY 8264 - Advanced Multiple Regression Analysis (3.0 cr)
- EPSY 8266 - Statistical Analysis Using Structural Equation Methods (3.0 cr)
- EPSY 8268 - Hierarchical Linear Modeling in Educational Research (3.0 cr)
- EPSY 8282 - Statistical Analysis of Longitudinal Data (3.0 cr)
- MGMT 8101 - PhD Seminar: Theory Building (2.0 cr)
- MGMT 8301 *{Inactive}*(4.0 cr)
- PSY 8208 - Social Psychology: The Self (3.0 cr)
- PSY 8664 - Personality Assessment (3.0 cr)
- PSY 8701 - Seminar in Industrial and Organizational Psychology I (3.0 cr)
- PSY 8702 - Seminar in Industrial and Organizational Psychology II (3.0 cr)
- PSY 8960 - Graduate Seminar in Psychology (1.0 - 4.0 cr)
- PUBH 6724 - The Health Care System and Public Health (3.0 cr)
- PUBH 6832 - Economics of the Health Care System (3.0 cr)
- PUBH 6861 *{Inactive}*(2.0 cr)
- SOC 8590 - Topics in Life Course Sociology (3.0 cr)
- HRIR 8991 - Independent Study in Human Resources and Industrial Relations (1.0 - 8.0 cr)

- **Thesis Credits (24 credits minimum)**

Take at least 24 doctoral thesis credits.
- BA 8888 - Thesis Credit: Doctoral (1.0 - 24.0 cr)

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Information current as of March 29, 2024