



WESTERN
ILLINOIS
UNIVERSITY

POST-BACCALAUREATE CERTIFICATE IN BUSINESS ANALYTICS

Higher Values in Higher Education
Academic Excellence • Educational Opportunity
Personal Growth • Social Responsibility

“Business Analytics is for those who want a deeper understanding of the theory and practice of data-driven decision-making.”

—Dr. Bhavneet Walia,
Department of Economics and Decision Sciences



Program Location: Macomb

Program Description

The Department of Economics and Decision Sciences offers a post-baccalaureate certificate program to graduate-level students who are interested in the field of business analytics. This program brings together the technical skills of data mining, statistical modeling, and forecasting for data-driven decision-making and for solving the analytical problems of the contemporary business world. The program is designed for graduate-level students in diverse backgrounds. Graduates from undergraduate programs in Quantitative and Biological Sciences, Economics, Sociology, Psychology, Business, Computer Sciences, Physics, Mathematics, Actuarial Science, Engineering, or Education, as well as working professionals desiring to sharpen their data analysis and business analytical skills and/or learn advanced statistical methods, will especially benefit from this high-demand post-baccalaureate certificate program in business analytics.

The Business Analytics post-baccalaureate certificate program is closely related to the master's degree programs in Economics, Applied Statistics and Decision Analytics, Business Administration, or Mathematics. Students interested in pursuing one of these degree programs may apply some semester hours earned in the Business Analytics certificate toward the fulfillment of requirements of these or other graduate programs. See respective graduate advisors for more information about these graduate programs.

Career Opportunities

Due to the shortage of skilled business analysts, the market demand is strong for graduates in this field. Companies hiring include Caterpillar, John Deere, Hewlett-Packard, Honeywell, Northrop Grumman, Boeing, American Medical Association, Chicago Board of Trade, U.S. Treasury, U.S. Comptroller of the Currency, Tennessee Department of Commerce, Principal Financial Group, Bank of America, Merrill Lynch, Exxon, Illinois Power, Newsweek, and Walmart.

Requirements for Enrollment

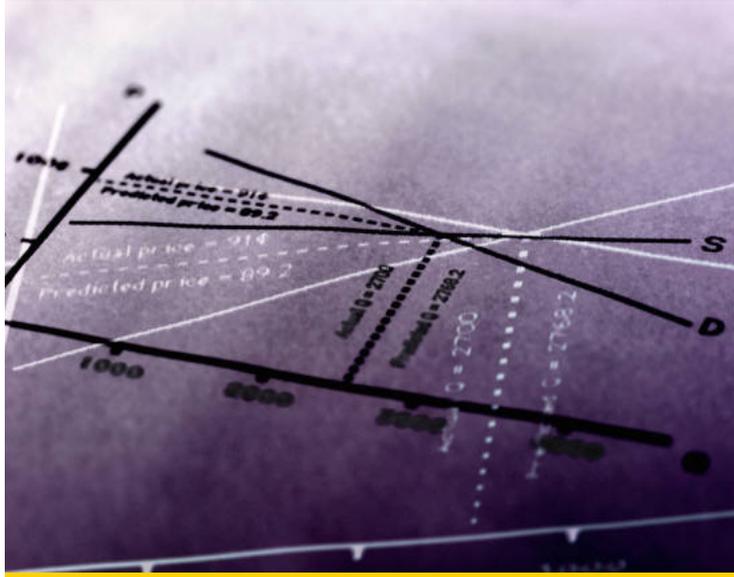
Students who want the post-baccalaureate certificate must meet admission requirements. Non-degree students must meet the admission

requirements for the School of Graduate Studies; degree students must meet the admission requirements for their degree program. The students in this post-baccalaureate certificate program must hold an earned baccalaureate degree from an accredited institution. Applicants are expected to have had at least one course in introductory statistics equivalent to STAT 171 or higher. A course in calculus (equivalent to MATH 137) and/or a course in linear algebra would be desirable but is not required to fulfill the deficiencies. Students deficient in the above minimum requirements may be required to complete deficiencies before starting the post-baccalaureate certificate program. Students whose native language is other than English must demonstrate written and spoken English language proficiency. Evaluation of English language proficiency will be based on the student's scores on the *Test of English as a Foreign Language (TOEFL®)*. Students must meet institutionally mandated minimum *TOEFL®* scores as established by the University's Center for International Studies. All potential students must file an official application to the School of Graduate Studies and/or the Center for International Studies.

Certificate Requirements

The Business Analytics certificate program is an 18 semester hour (SH) program consisting of 12 SH of core courses. These courses are Introduction to Business Analytics (DS 500), Applied Data Mining for Business Decision Making (DS 435G), Statistical Software for Data Management and Decision Making (DS 490G), Applied Stochastic Models for Business Analytics (DS 540), and Business Analytics and Forecasting (DS 580).

Three semester hours will be chosen from the Directed Electives courses which are Analysis and Use of Financial Statements (ACCT 445G), Contemporary Issues in Accounting (ACCT 540), Corporate Financial Reporting and Analysis (ACCT 547), Advanced Auditing (ACCT 580), Artificial Intelligence Methods (CS 460G), Computer Graphics (CS 465G), Database Symptoms (CS 470G), Intensive Programming Review (CS 500), Management Science Techniques & Business Analytics (DS 523), Mathematical Economics (ECON 481G), Applied Price Theory (ECON 503), Econometrics I (ECON 506), Investment Management



(FIN 555), Financial Management: Theory and Practice (FIN 565), Business Intelligence and Decision Support Systems (IS 405G), Scientific Computing (MATH 552), and Applied Statistical Methods (STAT 553).

Transfer work or course substitutions are not allowed in certificate programs.

Capstone

The capstone is an internship in Business Analytics OR any one of the following: Advanced Management Accounting/Systems (ACCT 551), Independent Research (DS 600), Decision Sciences Internship (DS 620), Readings in Economics (ECON 501), Econometrics II (ECON 507), Futures and Options Markets (FIN 496G), Graduate Computer Science Internship (CS 595), Internship (ECON 599), Project in Applied Mathematics (MATH 596), Advanced Project in Applied Mathematics (MATH 601), and Internship in Applied Mathematics (MATH 602).

Faculty Expertise

The faculty members in the Department of Economics and Decision Sciences take an active and sincere interest in student success. Our faculty are also active in research, so students learn state-of-the-art skills and techniques. All faculty teaching graduate courses have PhDs in Economics or Statistics. Their degrees are from major research institutions such as University of Chicago, Northwestern University, University of Iowa, Iowa State University, University of South Carolina, West Virginia University, University of Tennessee, Binghamton University, and Kansas State University.

Campus Visits

The department welcomes visitors. To arrange a visit, call the Department of Economics and Decision Sciences chair at (309) 298-1153 or send an e-mail to economics@wiu.edu. You can learn more about the department by visiting our website at wiu.edu/economics.

In a recent *Chronicle of Higher Education* article (February 3, 2014), “As Data Proliferate, So Do Data-Related Graduate Programs,” the author, Megan O’Neil, writes,

“In June 2012, the Graduate Management Admission Council added a data-analytics section to the GMAT exam, used by most business schools in the admissions process. In 2013, 16 business schools registered new master’s programs in data analytics to receive GMAT scores, bringing the total number of data-analytics and information-management programs at business schools to about 166,” says Tracey Briggs, a spokeswoman for the council.

The need for skilled data professionals is real and growing, say the programs’ administrators and faculty members. They cite a 2011 study published by the McKinsey Global Institute that said the United States could face a shortage of as many as 190,000 workers with “deep analytical skills” by 2018.

The study also predicted a work-force gap of 1.5 million managers and analysts with the skills to decipher and translate data patterns for decision-making. Program administrators point to the swell in data-related job postings on technology-focused websites such as Dice.com, and to conversations with recruiters hunting for suitable candidates.

Established programs are seeing their share of the action. When Kennesaw State University started its master’s program in applied statistics, in 2006, it attracted fewer than 20 students and was an “island of misfit toys,” says Jennifer Lewis Priestley, an associate professor of applied statistics. Today she and her colleagues receive as many as five applications for every slot. The program has a 100-percent job-placement rate, with salaries starting around \$75,000, she says.

Contact Information

For admissions process and general program information, contact the School of Graduate Studies, Western Illinois University, 1 University Circle, Macomb, IL 61455, (309) 298-1806, (877) WIU GRAD toll-free, Grad-Office@wiu.edu, wiu.edu/grad.

For specific program questions, contact Dr. Bhavneet Walia, Graduate Advisor for the Post-Baccalaureate Certification Program in Business Analytics, Department of Economics and Decision Sciences, Western Illinois University, 1 University Circle, Macomb, IL 61455, (309) 298-1153, B-Walia@wiu.edu, or contact Dr. Tej Kaul, Department Chairperson, at T-Kaul@wiu.edu.