

PREDICTIVE ANALYTICS AND RISK MANAGEMENT, MS

for the Master of Science in Predictive Analytics and Risk Management

Concentrations for this program include:

- Enterprise Risk Management (<http://catalog.illinois.edu/graduate/las/predictive-analytics-risk-management-ms/enterprise-risk-management/>)
- Financial and Insurance Analytics (<http://catalog.illinois.edu/graduate/las/predictive-analytics-risk-management-ms/financial-insurance-analytics/>)

Designed to respond to a large and growing demand for professionals with expertise in modern statistical techniques combined with an understanding of risk management in a wide range of industries including insurance, consulting, investment, pension, healthcare, banking and financial services. This program combines training in modern statistical methods with actuarial science principles and financial risk management. The coursework is intended for students who have the prerequisite quantitative background to train for careers in predictive analytics for insurance and other financial settings by providing a multidisciplinary and integrated program.

Core requirements include courses from three disciplines, a course in financial risk management, courses in risk management and predictive analytics from an actuarial science perspective, and training in statistical machine learning, big data techniques, and Bayesian statistical methods. Related courses from the three disciplines may then be chosen as electives for students to reach their individualized educational goals.

Courses will be scheduled so that students may complete the 32-hour program in one academic year. Each concentration requires 12 hours of common core courses, organized around three broad areas of expertise, including a case study course. Each concentration also requires 12 hours of related area coursework specific to the concentration, plus an additional 8 hours of electives from a prescribed list included in this proposal. At least 12 hours must be taken at the 500 level.

Graduate Degree Programs in Mathematics

- Actuarial Science, MS (<http://catalog.illinois.edu/graduate/las/actuarial-science-ms/>)
- Applied Mathematics, MS (<http://catalog.illinois.edu/graduate/las/applied-mathematics-ms/>)
- Mathematics, MS (<http://catalog.illinois.edu/graduate/las/mathematics-ms/>)
- Predictive Analytics and Risk Management, MS (p. 1)
 - Enterprise Risk Management (<http://catalog.illinois.edu/graduate/las/predictive-analytics-risk-management-ms/enterprise-risk-management/>) | Financial and Insurance Analytics (<http://catalog.illinois.edu/graduate/las/predictive-analytics-risk-management-ms/financial-insurance-analytics/>)
- Mathematics, PhD (<http://catalog.illinois.edu/graduate/las/mathematics-phd/>)
 - optional concentrations:**
 - Actuarial Science & Risk Analytics (<http://catalog.illinois.edu/graduate/las/mathematics-phd/actuarial-science-risk-analytics/>)
 - Computational Science and Engineering (<http://catalog.illinois.edu/graduate/engineering/concentration/computational-science-engineering/>)
- Teaching of Mathematics, MS (<http://catalog.illinois.edu/graduate/las/teaching-mathematics-ms/>)

for the Master of Science in Predictive Analytics and Risk Management

department chair: Vera Hur

director of graduate studies: Yuliy Baryshnikov

overview of admissions & requirements:

overview of grad college admissions & requirements: <https://grad.illinois.edu/admissions/apply> (<https://grad.illinois.edu/admissions/apply/>)

department website: <http://www.math.illinois.edu>

program website: <https://math.illinois.edu/admissions/graduate-program-mathematics-admissions#MS-ActSci> (<https://math.illinois.edu/admissions/graduate-program-mathematics-admissions/#MS-ActSci>)

department faculty: <https://math.illinois.edu/research/faculty-research/actuarial-science> (<https://math.illinois.edu/research/faculty-research/actuarial-science/>)

college website: <https://las.illinois.edu/>

department office: 273 Altgeld Hall, 1409 West Green Street, Urbana, IL 61801

phone: (217) 333-5749

email: math-grad@illinois.edu