

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

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.

- optional concentrations: (<http://catalog.illinois.edu/graduate/las/mathematics-phd/>)
 - 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/>)

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Code	Title	Hours
Core Requirements (12 hours):		
FIN 530	Foundations in Risk Management	2
ASRM 410	Investments and Financial Markets	4
ASRM 539	Risk Analytics and Decision Making	2
ASRM 555	Advanced Predictive Analytics	4
Concentration Required Courses (see below)		12
Electives (see below)		8
Total Hours		32

Other Requirements

Code	Title	Hours
Other requirements may overlap		
A concentration is required.		
Minimum 500-level Hours Required Overall:		12
Minimum GPA:		2.75

for the Master of Science in Predictive Analytics and Risk Management

Department Chair: Feng Liang

Unit website

Program website

Program Office: 264 Computing Application Bldg., MC-382, 605 E Springfield Ave, Champaign, IL 61820

Phone: (217) 300-5630

Email: PARM@illinois.edu

College of Liberal Arts & Sciences

College of Liberal Arts & Sciences website (<https://las.illinois.edu/>)

Admissions

Graduate College Admissions & Requirements (<https://grad.illinois.edu/admissions/apply/>)

Overview of Program Admissions & Requirements (<https://predictive-analytics.illinois.edu/admission-requirement/>)

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
- Mathematics, PhD (<http://catalog.illinois.edu/graduate/las/mathematics-phd/>)