PREDICTIVE ANALYTICS AND RISK MANAGEMENT: ENTERPRISE RISK MANAGEMENT, MS

for the Master of Science in Predictive Analytics and Risk Management, Enterprise Risk Management concentration

Prepares students for the nascent profession of predictive analytics; it provides background and skill sets for data analytics with focus on financial and insurance industries. A student successfully finishing the program will typically have acquired a broad foundation of machine learning and predictive modeling techniques to forecast outcomes and glean valuable insights that can lead to better-informed business and investment decisions.

The assessment of the above-stated learning objectives will include:

- the job placement/graduate school acceptance rates
- feedback from employers
- graduate satisfaction surveys

These assessments will be conducted on an annual basis. We conduct exit surveys on all students each year, which should provide data on graduate students' job placement and graduate school acceptance rates. On the survey we will design questions to assess student's overall evaluation of these learning objectives. The curriculum was developed in close collaboration with industry partners. We expect to maintain close relationship with them and seek their feedback on the quality of our graduates on a regular basis.

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 (http://catalog.illinois.edu/graduate/las/predictive-analytics-risk-management-ms/)
Enterprise Risk Management (p. 1) | 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/)

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<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>FIN 530</td>
<td>Foundations in Risk Management</td>
<td>2</td>
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<tr>
<td>ASRM 410</td>
<td>Investments and Financial Markets</td>
<td>4</td>
</tr>
<tr>
<td>ASRM 539</td>
<td>Risk Analytics and Decision Making</td>
<td>2</td>
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<tr>
<td>ASRM 555</td>
<td>Advanced Predictive Analytics</td>
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<tr>
<td>Concentration Required Courses (see below)</td>
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<tr>
<td>Electives (see below)</td>
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<td></td>
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<td>Total Hours</td>
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Other Requirements

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<tbody>
<tr>
<td></td>
<td>Other requirements may overlap</td>
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<td></td>
<td>A concentration is required.</td>
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<td>Minimum 500-level Hours Required Overall:</td>
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<td>Minimum GPA:</td>
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Enterprise Risk Management Concentration

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<tr>
<th>Code</th>
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<tbody>
<tr>
<td>FIN 526</td>
<td>Investment Banking</td>
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<td>FIN 537</td>
<td>Financial Risk Management</td>
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<td>ASRM 533</td>
<td>Risk Management Practices and Regulation</td>
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<td>Electives:</td>
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<td>Choose two of the following:</td>
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<tr>
<td>ASRM 409</td>
<td>Stochastic Processes for Finance and Insurance</td>
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Information listed in this catalog is current as of 05/2024
ASRM 499  Topics in Actuarial Science
ASRM 510  Financial Mathematics
ASRM 539  Risk Analytics and Decision Making (if not taken as a core requirement)
ASRM 561  Loss Data Analytics & Credibility
ASRM 569  Extreme Value Theory and Catastrophe Modeling
ASRM 575  Life Insurance and Pension Mathematics
ASRM 595  Advanced Topics in Actuarial Science and Risk Analytics
FIN 431  Property-Liability Insurance
FIN 511  Investments
FIN 512  Financial Derivatives
FIN 513  Applications of Financial Engineering
FIN 514  Valuation of Complex Derivative Securities
FIN 515  Fixed Income Portfolios
FIN 519  Behavioral Finance
FIN 551  International Finance
FIN 580  Special Topics in Finance (Big Data Analytics)
FIN 590  Individual Study and Research
MATH 563  Risk Modeling and Analysis
STAT 542  Statistical Learning
STAT 590  Individual Study and Research

for the Master of Science in Predictive Analytics and Risk Management, Enterprise Risk Management concentration

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
e-mail: math-grad@illinois.edu

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