INDUSTRIAL ENGINEERING:
ADVANCED ANALYTICS IN
INDUSTRIAL & ENTERPRISE
SYSTEMS ENGINEERING, MS

for the Master of Science in Industrial Engineering, Advanced Analytics in
Industrial & Enterprise Systems Engineering Concentration (on campus &
online)

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overview of admissions & requirements: https://ise.illinois.edu/
graduate/admissions/
overview of grad college admissions & requirements: https://
grad.illinois.edu/admissions/apply
department website: https://ise.illinois.edu/
program website: https://ise.illinois.edu/graduate/degrees-and-
programs/advanced-analytics-concentration.html
department faculty: https://ise.illinois.edu/directory/faculty.html
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The Advanced Analytics in Industrial & Enterprise Systems Engineering
Concentration prepares students to relate the application of engineering
approaches and methods to the analysis and management of engineering
and business processes which are data-oriented. Students will be able
to provide companies and organizations with the ability to convert the
massive amounts of data received into useful information that can help
shape the decisions companies and organizations make.

Students must be enrolled in the Industrial Engineering MS (http://
catalog.illinois.edu/graduate/engineering/industrial-engineering-ms)
(thesis or non-thesis) degree program. After the first enrolled semester
the student notifies the ISE Graduate Programs Office of their intention
to enroll in the concentration and file a petition to add the Advanced
Analytics Concentration with the Graduate College.

Other Graduate Programs in Industrial & Enterprise
Systems Engineering

industrial engineering:
Computational Science & Engineering
Computational Science & Engineering
Computational Science & Engineering
Computational Science & Engineering
Computational Science & Engineering
Computational Science & Engineering
Computational Science & Engineering

Energy and Sustainability Engineering (EaSE) Graduate Certificate Option (http://ease.illinois.edu)

for the Master of Science in Industrial Engineering, Advanced Analytics in
Industrial & Enterprise Systems Engineering Concentration (on campus &
online)

Students must be enrolled in and complete the Industrial Engineering MS
(http://catalog.illinois.edu/graduate/engineering/industrial-engineering-
ms) (thesis or non-thesis) degree program to earn the concentration.

Information listed in this catalog is current as of 03/2020
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Advanced Analytics Core:</strong></td>
<td>8</td>
</tr>
<tr>
<td>IE 528</td>
<td>Computing for Data Analytics</td>
<td></td>
</tr>
<tr>
<td>IE 529</td>
<td>Stats of Big Data &amp; Clustering</td>
<td></td>
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<tr>
<td>IE 530</td>
<td>Optimization for Data Analytics</td>
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<tr>
<td>IE 531</td>
<td>Algorithms for Data Analytics</td>
<td></td>
</tr>
<tr>
<td>IE 532</td>
<td>Analysis of Network Data</td>
<td></td>
</tr>
<tr>
<td>IE 533</td>
<td>Big Graphs and Social Networks</td>
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<tr>
<td></td>
<td>**Advanced Analytics Secondary: **</td>
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<tr>
<td>IE 400</td>
<td>Design &amp; Anlys of Experiments</td>
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<tr>
<td>IE 410</td>
<td>Advanced Topics in Stochastic Processes &amp; Applications</td>
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<tr>
<td>IE 411</td>
<td>Optimization of Large Systems</td>
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<tr>
<td>IE 510</td>
<td>Applied Nonlinear Programming</td>
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<tr>
<td>IE 511</td>
<td>Integer Programming</td>
<td></td>
</tr>
<tr>
<td>IE 521</td>
<td>Convex Optimization</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Hours</strong></td>
<td>12</td>
</tr>
</tbody>
</table>

1. Complete 4 hours from the Advanced Analytics Secondary Course List or choose an additional 4 hours from the Advanced Analytics Core Course List.
2. Students to earn a B or better in each concentration course.
3. These 12 hours may be used toward the major degree requirements.