### Thesis Option

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Courses from at least three of the following areas: Optimization, Control Theory and Coding Theory, Combinatorics and Graph Theory, Algorithms and Theory of Computation, Statistics (including core courses listed below)</td>
<td>20</td>
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<tr>
<td></td>
<td>Select four of the following:</td>
<td>12-16</td>
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<tr>
<td></td>
<td>MATH 412 Graph Theory</td>
<td></td>
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<tr>
<td></td>
<td>MATH 413 Intro to Combinatorics</td>
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<td>MATH 450 Numerical Analysis</td>
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<td>MATH 473 Algorithms</td>
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<td>MATH 482 Linear Programming</td>
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<td>MATH 484 Nonlinear Programming</td>
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<tr>
<td></td>
<td>STAT 420 Methods of Applied Statistics</td>
<td></td>
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<tr>
<td>MATH 599</td>
<td>Thesis Research (min/max applied toward degree)</td>
<td>4</td>
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<tr>
<td>Total Hours</td>
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<td>32</td>
</tr>
</tbody>
</table>

### Other Requirements

- Other requirements may overlap
- A concentration is not required.
- MATH 405, MATH 406, MATH 415, MATH 444, and MATH 499 cannot be counted toward this graduate degree.
- Minimum Hours Required Within the Unit: 24
- Minimum 500-level Hours Required Overall: 12 (8 in MATH)
- Minimum GPA: 3.0

1 For additional details and requirements refer to the department’s Guide to Graduate Studies (http://www.math.illinois.edu/GraduateProgram) and the Graduate College Handbook (http://www.grad.illinois.edu/gradhandbook).

### Non-Thesis Option

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<td>MATH 450 Numerical Analysis</td>
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<td>MATH 469</td>
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