Mathematics (PhD): Interdisciplinary Mathematics Concentration

Degree Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
<th>Counts towards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Required Courses</strong></td>
<td><strong>9</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>See &quot;Required Courses by Category&quot; listed below</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Additional Courses</strong> 1, 2</td>
<td><strong>63</strong></td>
<td></td>
</tr>
<tr>
<td>&quot;Additional Courses&quot; are approved in conjunction with the academic committee to meet 72 total hours</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td><strong>Total Hours</strong></td>
<td><strong>72</strong></td>
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</tbody>
</table>

1 At least 30 credit hours of MA coursework must be at the graded 500- and 700-level.
2 At least two courses should be from another discipline. One of these courses may be cross-listed with MA.

Required Coursework by Category

Select one course from each of the following categories:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
<th>Counts towards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Continuous Mathematics</strong></td>
<td><strong>9</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Integrable Mathematics</strong></td>
<td></td>
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</tr>
<tr>
<td>MA 513</td>
<td>Introduction To Complex Variables</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MA 515</td>
<td>Analysis I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MA 531</td>
<td>Dynamic Systems and Multivariable Control I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MA 532</td>
<td>Ordinary Differential Equations I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MA 534</td>
<td>Introduction To Partial Differential Equations</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MA 546</td>
<td>Probability and Stochastic Processes I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MA 551</td>
<td>Introduction to Topology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MA 555</td>
<td>Introduction to Manifold Theory</td>
<td>3</td>
<td></td>
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<tr>
<td></td>
<td><strong>Discrete Mathematics</strong></td>
<td></td>
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<tr>
<td>MA 505</td>
<td>Linear Programming</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MA 520</td>
<td>Linear Algebra</td>
<td>3</td>
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<tr>
<td></td>
<td><strong>Computational Mathematics</strong></td>
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<tr>
<td>MA 522</td>
<td>Computer Algebra</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MA 540</td>
<td>Uncertainty Quantification for Physical and Biological Models</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MA 565</td>
<td>Graph Theory</td>
<td>3</td>
<td></td>
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<tr>
<td>MA 573</td>
<td>Mathematical Modeling of Physical and Biological Processes I</td>
<td>3</td>
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<tr>
<td>MA 580</td>
<td>Numerical Analysis I</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Faculty

Full Professors

Bojko Nentchev Bakalov
Lorena Bociu
Alina Emil Chertock
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Jo-Ann D. Cohen
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Naihuan Jing
Erich L. Kaltofen
Carl Timothy Kelley
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Zhilin Li
Alun L. Lloyd
Sharon R. Lubkin
Negash G. Medhin
Kailash Chandra Misra
Mette Olufsen
Tao Pang
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P. McGrath
Ryan William Murray
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Yairon Cid Ruiz
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T. Saksala
Yeonjong Shin
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L. Castle
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Molly A. Fenn
Mikhail Gilman
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S. Paul
Brenda B. Williams

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H. Charlton
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Lung-ock Chung
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Gary Doyle Faulkner
John E. Franke
Ronald O. Fulp
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Thomas J. Lada
Xiao-Biao Lin
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