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>Required Courses</td>
<td>9</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>Additional Courses ¹, ²</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&quot;Additional Courses&quot; are approved in conjunction with the academic committee to meet 72 total hours</td>
<td></td>
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<tr>
<td></td>
<td>Total Hours</td>
<td>72</td>
<td></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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
<th>Counts towards</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Select one course from each of the following categories:</td>
<td>9</td>
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<tr>
<td></td>
<td>Continuous Mathematics</td>
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<td></td>
</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>
</tr>
<tr>
<td></td>
<td>Discrete Mathematics</td>
<td></td>
<td></td>
</tr>
<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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</table>

Computational Mathematics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
<th>Counts towards</th>
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<tbody>
<tr>
<td>MA 522</td>
<td>Computer Algebra</td>
<td>3</td>
<td></td>
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<tr>
<td>MA 540</td>
<td>Uncertainty Quantification for Physical and Biological Models</td>
<td>3</td>
<td></td>
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<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>
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</tbody>
</table>

Faculty

Full Professors

Bojko Nentchev Bakalov
Lorena Bociu
Alina Emil Chertock
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Mansoor Abbas Haider
Hoon Hong
Ilse Ipsen
Kazufumi Ito
Naihuan Jing
Erich L. Kaltofen
Carl Timothy Kelley
Irina Aleksandrovna Kogan
Zhilin Li
Alun L. Lloyd
Sharon R. Lubkin
Negash G. Medhin
Kailash Chandra Misra
Mette Olufsen
Tao Pang
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Jesus Rodriguez
Ralph Conover Smith
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Zane Kun Li
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Jacob Paul Matherne

P. McGrath
Ryan William Murray
Dominykas Norgilas
Yairon Cid Ruiz
Andrew Sageman-Furnas
T. Saksala
Yeonjong Shin
Fatma Terzioglu

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Molly A. Fenn
Mikhail Gilman
Bevin Laurel Maultsby
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
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Robert E. Hartwig
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N. Rose
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R. White

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J. Ottesen