

# Mathematics (PhD): Interdisciplinary Mathematics Concentration

## Degree Requirements

Code	Title	Hours	Counts towards
<b>Required Courses</b>		<b>9</b>	
See "Required Courses by Category" listed below			
<b>Additional Courses</b> <sup>1, 2</sup>		<b>63</b>	
"Additional Courses" are approved in conjunction with the academic committee to meet 72 total hours			
<b>Total Hours</b>		<b>72</b>	

<sup>1</sup> At least 30 credit hours of MA coursework must be at the graded 500- and 700-level.

<sup>2</sup> At least two courses should be from another discipline. One of these courses may be cross-listed with MA.

## Required Coursework by Category

Code	Title	Hours	Counts towards
<b>Select one course from each of the following categories:</b>		<b>9</b>	
<b>Continuous Mathematics</b>			
MA 513	Introduction To Complex Variables	3	
MA 515	Analysis I	3	
MA 531	Dynamic Systems and Multivariable Control I	3	
MA 532	Ordinary Differential Equations I	3	
MA 534	Introduction To Partial Differential Equations	3	
MA 546	Probability and Stochastic Processes I	3	
MA 551	Introduction to Topology	3	
MA 555	Introduction to Manifold Theory	3	
<b>Discrete Mathematics</b>			
MA 505	Linear Programming	3	
MA 520	Linear Algebra	3	

MA 521	Abstract Algebra I	3
MA 523	Linear Transformations and Matrix Theory	3
MA 524	Combinatorics I	3
MA 526	Mathematical Analysis II	3
<b>Computational Mathematics</b>		
MA 522	Computer Algebra	3
MA 540	Uncertainty Quantification for Physical and Biological Models	3
MA 565	Graph Theory	3
MA 573	Mathematical Modeling of Physical and Biological Processes I	3
MA 580		3

## Faculty

### Full Professors

Bojko Nentchev Bakalov  
 Alina Emil Chertock  
 Moody Ten-Chao Chu  
 Jo-Ann D. Cohen  
 Patrick Louis Combettes  
 Pierre Alain Gremaud  
 Mansoor Abbas Haider  
 Hoon Hong  
 Ilse Ipsen  
 Kazufumi Ito  
 Naihuan Jing  
 Erich L. Kaltofen  
 Carl Timothy Kelley  
 Arkady Kheyfets  
 Irina Aleksandrovna Kogan  
 Zhilin Li  
 Xiao-Biao Lin  
 Alun L. Lloyd  
 Sharon R. Lubkin

Negash G. Medhin

Kailash Chandra Misra

Mette Olufsen

Tao Pang

Nathan P. Reading

Jesus Rodriguez

Michael Shearer

Jack William Silverstein

Ralph Conover Smith

Ernest Lester Stitzinger

Seth M. Sullivant

Agnes Szanto

Hien Trong Tran

Semyon Victor Tsynkov

Dmitry Valerievich Zenkov

---

## Associate Professors

Lorena Viorica Bociu

Min Jeong Kang

Ricky Ini Liu

Arvind Krishna Saibaba

David Papp

Cynthia Leslie Vinzant

---

## Assistant Professors

Martin Helmer

Alen Alexanderian

Mohammad Mehdi Farazmand

Kevin Bryant Flores

P. Ivanisvili

C. Jones

Yerkin Kitapbayev

Tye Lidman

P. McGrath

Ryan William Murray

Tien Khai Nguyen

A. Papanicolaou

T. Saksala

Radmila Sazdanovic

---

## Practice/Research/Teaching Professors

Elisabeth M. M. Brown

L. Castle

Alina Nicoleta Duca

Molly A. Fenn

Bevin Laurel Maultsby

S. Paul

Brenda B. Williams

---

## Emeritus Faculty

John William Bishir

Stephen LaVern Campbell

Richard E. Chandler

H. Charlton

Ethelbert N. Chukwu

Lung-ock Chung

Joseph C. Dunn

Gary Doyle Faulkner

John E. Franke

Ronald O. Fulp

Dennis E. Garoutte

Robert E. Hartwig

Aloysius G. Helminck

Robert H. Martin Jr.

Thomas J. Lada

Joe A. Marlin

Carl Meyer Jr.

Larry Keith Norris

Sandra Paur

Lavon Barry Page

E. Peterson

Mohan Sastri Putcha

N. Rose

Stephen Schecter

Jeffrey Scott Scroggs

James Francis Selgrade

C. Siewert

Robert Silber

Michael F. Singer

R. White

---

## **Adjunct Faculty**

Scott Christopher Batson

Jonathan David Hauenstein

Patricia L. Hersh

John Lavery

Jordan E. Massad

Jessica Loock Matthews

J. Ottesen