Biology (MS)

Degree Requirements

Students may choose from the degree tracks below to complete coursework within a focus area. Degrees earned will be distributed as: “Master of Science in Biology” without track specifications.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td></td>
<td>Core Courses</td>
<td>3</td>
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<tr>
<td>AEC 502</td>
<td>Introduction to Biological Research</td>
<td></td>
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<tr>
<td>PHI 816</td>
<td>Introduction to Research Ethics (or equivalent ethics course)</td>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td></td>
<td>Additional Courses</td>
<td>27</td>
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<tr>
<td></td>
<td>Additional Courses are determined in conjunction with the academic committee to meet the 30 total hours</td>
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<tr>
<th>Code</th>
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<th>Hours</th>
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<tbody>
<tr>
<td></td>
<td>Aquaculture and Aquatic Sciences Track</td>
<td>6</td>
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<tr>
<td></td>
<td>ZO 524 Comparative Endocrinology</td>
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<th>Code</th>
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<th>Hours</th>
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<tr>
<td></td>
<td>Molecular, Cellular and Developmental Biology Track</td>
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<tr>
<td></td>
<td>BIT 815 or any Bioinformatics course determined in conjunction with the academic committee.</td>
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<th>Code</th>
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<th>Hours</th>
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<tr>
<td></td>
<td>Ecological and Evolution Track</td>
<td>6</td>
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<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td></td>
<td>Ecology or Evolution Requirement</td>
<td>6</td>
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<tr>
<td></td>
<td>BIT 815 or any Bioinformatics course determined in conjunction with the academic committee.</td>
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</table>
BIO 570  Evolutionary Ecology
ENT 591  Special Topics In Entomology
GN 703  Population and Quantitative Genetics
GN 713  Quantitative Genetics and Breeding
GN 740  Evolutionary Genetics
GN 757  Quantitative Genetics Theory and Methods
PB 503  Systematic Botany
PB 545  Paleobotany

Total Hours 6

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### Quantitative Requirement

Select one of the following courses:

- ST 511  Statistical Methods For Researchers I
- ST 512  Statistical Methods For Researchers II
- AEC 510  Machine Learning Approaches in Biological Sciences
- ST 505  Applied Nonparametric Statistics
- BMA 567  Modeling of Biological Systems

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### Ecology Requirement

- AEC 503  Foundations of Ecology
- AEC 519  Freshwater Ecology
- AEC 718  Community Ecology
- AEC 761  Conservation and Climate Science
- BIO/BMA 560  Population Ecology
- MEA 752  Marine Plankton Ecology

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### Evolution Requirement

- BIO 570  Evolutionary Ecology
- ENT 591  Special Topics In Entomology
- GN 703  Population and Quantitative Genetics
- GN 713  Quantitative Genetics and Breeding
- GN 740  Evolutionary Genetics
- GN 757  Quantitative Genetics Theory and Methods
- PB 503  Systematic Botany
- PB 545  Paleobotany

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Total Hours 9

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### Restricted Electives

- BIO 520  Skeletal Biological Laboratory Methods in Human Identification & Cold Cases 3
- BIO 811  Forensic Sciences Seminar 1

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### Quantitative Requirements

- ST 511  Statistical Methods For Researchers I 3
- ST 512  Statistical Methods For Researchers II 1
- ST 540  Applied Bayesian Analysis

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Total Hours 17

## Other Requirements

- Every student is required to complete training logs. Many of the modules can be completed while taking the BIO 520 course. Please contact the Forensic Sciences Concentration Chair for additional information.

## Integrative Biology Track

This concentration is open to MS and PhD students who do not fit academically within the other Biology concentrations, or who integrate across multiple concentrations. Coursework is determined in consultation with your PhD mentor and committee and is approved by the DGP.

### Full Professors

- David Derek Aday
- Betty L. Black
- Russell J. Borski
- David Buchwalter
- Jeffrey A. Buckel
- Ignazio Carbone
- Jaime A. Collazo
- William Gregory Cope
- Harry Valentine Daniels III
- Robert R. Dunn
- David B. Eggleston
- John R. Godwin
- Kevin Gross
- Craig A. Harms
- Jeffrey M. Hinshaw
- Rebecca Elizabeth Irwin
- Thomas J. Kwak
- Thomas M. Losordo
- Carolyn Jane Mattingly
- Heather B. Patysaul
- Luis Alonso Ramirez-Ulate
- Ann Helen Ross
- Mary Higby Schweitzer
- David R. Tarpy

### Associate Professors

- Scott M. Belcher
Shobhan Gaddameedhi  
Adam Hartstone-Rose  
Randall Brian Langerhans  
John Edward Meitzen  
Nanette M. Nascone-Yoder  
Marianne Niedzlek-Feaver  
Antonio Planchart  
Reade Bruce Roberts

**Assistant Professors**

Jie Cao  
Khara Deanne Grieger  
Nathan James Hostetter  
Kurt Marsden  
Jamian Krishna Pacifici  
Seema Nayan Sheth  
Caitlin Suzanne Smukowski Heil  
Bradley William Taylor  
Christopher Scott Walker  
Elsa Youngsteadt

**Practice/Research/Teaching Professors**

Jennifer L. Campbell  
Louis Broaddus Daniel III  
Miles Dean Engell  
Miriam G. Ferzli  
Jesse Robert Fischer  
Terry Allen Gates  
William Miller Johnstone III  
Jane L. Lubischer  
Erin Alison McKenney  
Lisa M. Paciulli  
Lisa D. Parks  
Martha Burford Reiskind  
Damian Shea  
Adrian Alan Smith

Lindsay E. Zanno

**Emeritus Faculty**

Peter T. Bromley  
Billy J. Copeland  
Frederick T. Corbin  
Phillip D. Doerr  
William C. Grant  
Robert M. Grossfeld  
Thurman L. Grove  
Harold F. Heatwole  
Joseph E. Hightower  
Richard A. Lancia  
Richard L. Noble  
Kenneth H. Pollock  
James Alan Rice Jr.  
John F. Roberts  
Damian Shea  
Theodore R. Simons  
Herbert A. Underwood  
John G. Vandenbergh  
Thomas G. Wolcott

**Adjunct Professors**

Robert R. Anholt  
Tyler Ray Black  
Arthur E. Bogan  
John G. Boreman Jr.  
David T. Cobb  
Louis Broaddus Daniel III  
Mitchell J. Eaton  
John Jeffrey Govoni  
Nicholas M. Haddad  
Andrew Bittinger Heckert  
Ryan J. Heise  
Corinne J. Kendall
Reid W. Laney
Trudy F. MacKay
Alexa J. McKerrow
Gerard McMahon
James Adiel Morris Jr.
Megan Elizabeth Serr
Rowland M. Shelley
Kyle W. Shertzer
Adrian Alan Smith
Seth Patrick Stapleton
Bryan Lynn Stuart
Adam J. Terando