## Genetics (PhD)

### Degree Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Core Courses</strong></td>
<td><strong>18</strong></td>
</tr>
<tr>
<td>GN 701</td>
<td>Molecular Genetics</td>
<td></td>
</tr>
<tr>
<td>GN 702</td>
<td>Cellular and Developmental Genetics</td>
<td></td>
</tr>
<tr>
<td>GN 703</td>
<td>Population and Quantitative Genetics</td>
<td></td>
</tr>
<tr>
<td>GN 810</td>
<td>Special Topics in Genetics (Journal Club) ^1</td>
<td></td>
</tr>
<tr>
<td>GN 820</td>
<td>Special Problems</td>
<td></td>
</tr>
<tr>
<td>GN 850</td>
<td>Professionalism and Ethics</td>
<td></td>
</tr>
<tr>
<td>ST 511</td>
<td>Statistical Methods For Researchers I</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Teaching Course</strong></td>
<td><strong>6</strong></td>
</tr>
<tr>
<td>GN 885</td>
<td>Doctoral Supervised Teaching</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Elective Courses</strong></td>
<td><strong>9</strong></td>
</tr>
<tr>
<td></td>
<td>See &quot;Elective Courses&quot; listed below</td>
<td></td>
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<tr>
<td></td>
<td>&quot;Other Elective&quot; is determined in conjunction with the academic committee</td>
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<tr>
<td></td>
<td><strong>Research Course</strong></td>
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<tr>
<td>GN 895</td>
<td>Doctoral Dissertation Research</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. GN 810 Special Topics in Genetics is to be repeated twice to meet the 2 credit hour requirement.  
2. Only three hours of these courses may be counted toward the primary elective requirement.  
3. Other courses that do not appear on this list may be counted if they have substantial genetics content. Please consult with the Director of Graduate Programs if you would like to count a course as an elective that is not on this list.

### Elective Courses

Select at least three courses below:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GN 713</td>
<td>Quantitative Genetics and Breeding</td>
<td>3</td>
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<tr>
<td>GN 721</td>
<td>Genetic Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>GN 725</td>
<td>Forest Genetics</td>
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<tr>
<td>GN 735</td>
<td>Functional Genomics</td>
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<td>GN 740</td>
<td>Evolutionary Genetics</td>
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<td>GN 745</td>
<td>Quantitative Genetics In Plant Breeding</td>
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<td>GN 750</td>
<td>Developmental Genetics</td>
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<tr>
<td>GN 755</td>
<td>Population Genetics</td>
<td>3</td>
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<tr>
<td>GN 756</td>
<td>Computational Molecular Evolution</td>
<td>3</td>
</tr>
<tr>
<td>GN 757</td>
<td>Quantitative Genetics Theory and Methods</td>
<td>3</td>
</tr>
<tr>
<td>GN 758</td>
<td>Microbial Genetics &amp; Genomics</td>
<td>3</td>
</tr>
<tr>
<td>GN 761</td>
<td>Advanced Molecular Biology Of the Cell</td>
<td>3</td>
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<tr>
<td>GN 768</td>
<td>Nucleic Acids: Structure and Function</td>
<td>3</td>
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<tr>
<td>GN 810</td>
<td>Special Topics in Genetics</td>
<td>1-6</td>
</tr>
<tr>
<td>GN 820</td>
<td>Special Problems (Professional Development)</td>
<td>1-6</td>
</tr>
<tr>
<td>ST 590</td>
<td>Special Topics (Bioinformatics I)</td>
<td>1-6</td>
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<tr>
<td>ST 590</td>
<td>Special Topics (Bioinformatics II)</td>
<td>1-6</td>
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</tbody>
</table>

### Faculty

#### Full Professors

- Jose Miguel Alonso
- Peter J. Balint-Kurti
- Rodolphe Barrangou
- David M. Bird
- Adam Joseph Birkenheuer
- Matthew Breen
- Ignazio Carbone
- Ralph A. Dean
- Ralph E. Dewey
- Robert Graham Franks
- Troy Ghashghaei
- John R. Godwin
- Major M. Goodman
- Fred L. Gould
- Candace Hope Haigler
- Linda Kay Hanley-Bowdoin
- Christine Veronica Hawkes
- James B. Holland
- Fikret Isik
- Ramsey S. Lewis
- Hsiao-Ching Liu
- Steven Lommel
- James W. Mahaffey
- Christian Maltecca
- Carolyn Jane Mattingly
- Kathryn Montgome Meurs
- Spencer V. Muse
- Natasha J. Olby
Charles H. Opperman
Emilie Francesca Rissman
Jean B. Ristaino
Coby J. Schal
Maxwell J. Scott
Heike Inge Ada Sederoff
Seth M. Sullivant
William F. Thompson
Jeffrey L. Thorne
Jung-Ying Tzeng
Keith R. Weninger
Ross W. Whetten
Brian M. Wiegmann
Qiuyun Xiang
Deyu Xie
Jeffrey A. Yoder
Zhaobang Zeng

Associate Professors
David Lawrence Aylor
Chase Beisel
Nicolas Emile Buchler
Gavin Clay Conant
Steffen Heber
Vasu Kuraparthy
Randall Brian Langerhans
Terri A. Long
Marce D. Lorenzen
John Edward Meitzen
Susana Rita Milla-Lewis
Nanette M. Nascone-Yoder
Dahlia M. Nielsen
Xinxia Peng
Marcela Pierce
Antonio Planchart
David Michael Reif

Assistant Professors
Hamid Ashrafi
Benjamin John Callahan
Michael Anthony Cowley
Colleen Jennifer Doherty
Amanda Marie Hulse
Albert Jun Qi Keung
Manuel Kleiner
Caroline Laplante
Wusheng Liu
Anna Michelle Locke
Elizabeth Lucas
Kurt Marsden
Santosh Kumar Mishra
Casey C. Nestor
Benjamin J. Reading
Ruben Rellan Alvarez
Adriana San Miguel Delgadillo
Caitlin Suzanne Smukowski Heil
Casey Michelle Theriot
Laurianne Chantal Van Landeghem
Christina Zakas

Emeritus Professors
William Reid Atchley
Stephanie E. Curtis
Eugene Eisen
Charles S. Levings III
Todd Robert Klaenhammer
Wesley Edwin Kloos
Dale F. Matzinger
Wendell Herbert McKenzie
John G. Scandalios
Henry E. Schaffer
Ron Ross Sederoff
Charles William Stuber
Earl A. Wernsman

**Adjunct professors**
Robert R. Anholt
Trudy F. MacKay
Alison Anne Motsinger-Reif
Nadia Singh