# Genetics (MS)

## 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>Core Courses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GN 701</td>
<td>Molecular Genetics</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>GN 702</td>
<td>Cellular and Developmental Genetics</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>GN 703</td>
<td>Population and Quantitative Genetics</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>GN 810</td>
<td>Special Topics in Genetics (Journal Club)</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>GN 850</td>
<td>Professionalism and Ethics</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>ST 511</td>
<td>Statistical Methods For Researchers I</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Teaching Requirement</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GN 685</td>
<td>Master's Supervised Teaching</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Elective Course</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Select a minimum of two courses below:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GN 713</td>
<td>Quantitative Genetics and Breeding</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GN 721</td>
<td>Genetic Data Analysis</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GN 725</td>
<td>Forest Genetics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GN 735</td>
<td>Functional Genomics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&quot;Other Elective&quot; is determined in conjunction with the academic committee</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Research Course</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GN 695</td>
<td>Master's Thesis Research</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Hours</td>
<td>32</td>
<td></td>
</tr>
</tbody>
</table>

1. Only three hours of these courses may be counted toward the primary elective requirement.
2. 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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
<th>Counts towards</th>
</tr>
</thead>
<tbody>
<tr>
<td>GN 713</td>
<td>Quantitative Genetics and Breeding</td>
<td>3</td>
<td>1-6</td>
</tr>
<tr>
<td>GN 721</td>
<td>Genetic Data Analysis</td>
<td>3</td>
<td>1-6</td>
</tr>
<tr>
<td>GN 725</td>
<td>Forest Genetics</td>
<td>3</td>
<td>1-6</td>
</tr>
<tr>
<td>GN 735</td>
<td>Functional Genomics</td>
<td>3</td>
<td>1-6</td>
</tr>
<tr>
<td>GN 740</td>
<td>Evolutionary Genetics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GN 745</td>
<td>Quantitative Genetics in Plant Breeding</td>
<td>1</td>
<td>1-6</td>
</tr>
<tr>
<td>GN 750</td>
<td>Developmental Genetics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GN 755</td>
<td>Population Genetics</td>
<td>3</td>
<td>1-6</td>
</tr>
<tr>
<td>GN 756</td>
<td>Computational Molecular Evolution</td>
<td>3</td>
<td>1-6</td>
</tr>
<tr>
<td>GN 757</td>
<td>Quantitative Genetics Theory and Methods</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GN 758</td>
<td>Microbial Genetics &amp; Genomics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GN 761</td>
<td>Advanced Molecular Biology Of the Cell</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GN 768</td>
<td>Nucleic Acids: Structure and Function</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GN 810</td>
<td>Special Topics in Genetics</td>
<td>1-6</td>
<td></td>
</tr>
<tr>
<td>GN 820</td>
<td>Special Problems</td>
<td>1-6</td>
<td></td>
</tr>
<tr>
<td>ST 590</td>
<td>Special Topics (Bioinformatics I)</td>
<td>1-6</td>
<td></td>
</tr>
<tr>
<td>ST 590</td>
<td>Special Topics (Bioinformatics II)</td>
<td>1-6</td>
<td></td>
</tr>
<tr>
<td>PB 780</td>
<td>Plant Molecular Biology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PB 824</td>
<td>Topical Problems (Topics in Plant Molecular Genetics)</td>
<td>1-4</td>
<td></td>
</tr>
<tr>
<td>BCH 701</td>
<td>Macromolecular Structure</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BIT 510</td>
<td>Core Technologies in Molecular and Cellular Biology</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>BIT 815</td>
<td>Advanced Special Topics</td>
<td>1-6</td>
<td></td>
</tr>
</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
Balaji M. Rao
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
John J Classen
David Lawrence Aylor
Chase Beisel
Nicolas Emile Buchler
Gavin Clay Conant
Shobhan Gaddameedhi
Steffen Heber
Vasu Kuraparth
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 Plancharth
David Michael Reif
Michael Hay Reiskind
Reade Bruce Roberts
Michael L. Sikes
Rosangela Sozzani
Anna N. Stepanova
Yihui Zhou

Assistant Professors
Hamid Ashrafi
Benjamin John Callahan
Michael Anthony Cowley
Colleen Jennifer Doherty
Rafael Felipe Guerro Farias
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
Justin Graham Alexander Whitehill
Christina Zakas

Ron Ross Sederoff
Charles William Stubber
Earl A. Wernsman

---

**Adjunct professors**

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

---

**Emeritus Professors**

Roderick M Rejesus
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