# Genetics (MR)

## 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><strong>Core Courses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GN 701</td>
<td>Molecular Genetics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GN 702</td>
<td>Cellular and Developmental Genetics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GN 703</td>
<td>Population and Quantitative Genetics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GN 850</td>
<td>Professionalism and Ethics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ST 511</td>
<td>Statistical Methods For Researchers I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCH 451</td>
<td>Principles of Biochemistry</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Elective Courses</strong></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>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></td>
</tr>
<tr>
<td>GN 750</td>
<td>Developmental Genetics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Other Electives</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>See &quot;Elective Courses&quot; listed below</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Other Electives</strong></td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&quot;Other Electives&quot; are approved in conjunction with the academic committee</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Hours** 31

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

Select a minimum of three courses below:

<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></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>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></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></td>
</tr>
<tr>
<td>GN 756</td>
<td>Computational Molecular Evolution</td>
<td>3</td>
<td></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 591</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 Ghaghgheai
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. Weningers
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 Kuraparthi
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
Marcella Pierce
Antonio Planchar
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

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
Ron Ross Sederoff
Charles William Stuber
Earl A. Wernsman