PhD in Genetics Area Program

Degree Requirements

Prerequisites include the following courses or their equivalents:
BIO_SC 2200 General Genetics, BIOCHM 4270 Biochemistry, STAT 1400 Elementary Statistics for Life Sciences.

In general, the minimum requirements for the PhD degree, beyond the requirements of the Graduate School, are outlined below. Others are determined in consultation between the student and faculty advisor.

- advanced courses in genetics, biochemistry and molecular biology
- regular participation in the genetics area seminar program
- successful completion of a comprehensive examination
- at least one semester of teaching in a genetics course
- 3 seminar presentations
- research, dissertation and oral defense

Core Courses - select one from each of 2 areas
At least one must be graduate level, and you must receive a grade of B or better.

Molecular Genetics
- BIO_SC 4976 Molecular Biology
- CHEM 8085 Topics in Chemistry (Bioorganic Chemistry of Nucleic Acids)
- MICROB 9432 Molecular Biology II
  or BIOCHM 9432 Molecular Biology II
- V_PBIO 8448 Molecular Methods in Nucleic Acids

Developmental Genetics
- BIO_SC 8320 Developmental Genetics
- BIO_SC 9468 Molecular Biology of Plant Growth and Development

Population and Quantitative Genetics
- PLNT_S 7325 Advanced Plant Breeding
- PLNT_S 9440 Applied Quantitative and Statistical Genetics
- AN_SCI 7323 Applied Livestock Genetics
- AN_SCI 9423 Genetics of Populations
- BIO_SC 8700 Ecological Genetics

Specialty Courses - pick any two
At least one must be graduate level, and you must receive a grade of B or better.

Genetics of Particular Organisms
- BIOCHM 7376 Computer Assisted Sequence Analysis and Molecular Modeling
- BIO_SC 4600 Evolution
- BIO_SC 4982 Human Inherited Diseases
- BIO_SC 8300 Advanced Plant Genetics
- BIO_SC 8720 Speciation
- CMP_SC 7001 Topics in Computer Science (Bioinformatics)
- MICROB 7404 Foundations in Bacteriology and Pathogenesis
- PLNT_S 9540 Genetics of Plant-Microorganism Interaction
- Immunogenetics
  - MICROB 7304 Immunology
  - MICROB 9407 Advanced Immunology

Electives
One elective approved by student's committee in life science, including genetics or ancillary subjects such as statistics, computer science, etc. Must be 3000 level or above with at least 3 credit hours.

GAP Seminar
All students must be enrolled every semester.

Student Seminars
Students are required to present 3 research seminars during their tenure. At least 1 must be given in the GAP seminar after the student's second year in the program. Other acceptable presentations, with approval of the student's committee, include a 15 minute talk or an in-person poster presentation at a national or international meeting, or in a public, advertised forum.

Financial Aid from the Program
Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

Application Deadline
Fall deadline: January 15

Admission Criteria

- Minimum TOEFL scores:
  - Internet-based test (iBT)
    - 93
  - Paper-based test (PBT)
    - 580
- Minimum GRE scores:
  - Verbal + Quantitative
    - Prior to August 1, 2011: 1100
    - On or after August 1, 2011: 302
  - Analytical
    - 4.5
- Minimum GPA: 3.0 in last 60 hours
- Bachelor's degree
- One or more courses in each of the following: organic chemistry, biochemistry, mathematics (calculus and statistics), physics, introductory genetics
- Research experience highly desirable
- Broad background in biology

Note: Deficiencies in the subjects listed can be remedied after admission.

Required Application Materials

To the Graduate School:
- All required Graduate School documents

To the Genetics Area Program:
- Genetics Area Program application (download form from website)
  - GRE scores
  - TOEFL scores (international applicants)
• 3 letters of recommendation (use provided form)
• Personal statement