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

BIO_SC 8060 Ethical Conduct of Research 1
BIO_SC 8050 Professional Survival Skills 2

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_SCI 7325 Advanced Plant Breeding
PLNT_SCI 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
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 8404 Foundations in Bacterial Pathogenesis
PLNT_SCI 9540 Genetics of Plant-Microorganism Interaction

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:
  - When did you take the GRE?
    - Prior to August 1, 2011
      - Verbal + Quantitative: 1100
      - Analytical: 4.5
    - On or after August 1, 2011
      - Verbal + Quantitative: 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