

NOTE: This is just ONE way to arrange the courses needed to fulfill the Genetics degree requirements.

Sample Course Sequence for Genetics Major

■ course should be taken in the indicated semester

	Fall Semester	Spring Semester
First Year	<ul style="list-style-type: none"> ■ GEN 401 – Professional Perspectives in Genetics ■ BIOL 411 – Intro Biology:Molecular & Cellular □ ENGL 401 - First-Year Writing ■ CHEM 403 – General Chemistry □ Discovery course 	<ul style="list-style-type: none"> ■ BIOL 412 – Intro Biology:Evolution, Biodiversity □ MATH 424B – Calculus for Life Sciences ■ CHEM 404 – General Chemistry □ Discovery course
Second Year	<ul style="list-style-type: none"> ■ GEN 604 – Principles of Genetics □ CHEM 545/546 – Organic Chemistry □ BIOL 528 – Applied Biostatistics □ Discovery course 	<ul style="list-style-type: none"> ■ GEN 606 - Genetics Lab ■ BMS 503 – General Microbiology □ Major Elective (Bioscience)⁴ □ Discovery course
Third Year	<ul style="list-style-type: none"> □ BMCB 658/659 - General Biochemistry □ PHYS 401 – Introduction to Physics □ Discovery course □ Elective 	<ul style="list-style-type: none"> □ Major Elective (Pop/Evol Genetics)² □ PHYS 402 – Introduction to Physics □ Genetics Core course¹ □ Discovery course
Fourth Year	<ul style="list-style-type: none"> □ Major Elective (Lab Techniques)³ □ GEN 711 - Genomics and Bioinformatics □ Major Elective (Bioscience)⁴ □ Elective 	<ul style="list-style-type: none"> □ Capstone □ BMCB 605 – Eukaryotic Cell & Develop Biology □ Major Elective (Bioscience)⁴ □ Elective

¹ **Genetics Core** choices GEN 704 **OR** GEN 771 *Genetics of Prokaryotic Microbes OR Molecular Genetics*

Major Electives

² **Population/Evolutionary Genetics** choices GEN 705 **OR** GEN 715 *Pop. & Quant. Genetics OR Molecular Evolution*

³ **Laboratory Techniques** choices

- BMCB 753 *Cell Culture*
- BMCB 754 *Lab in Biochem & Molec Biol of Nucleic Acids*
- BMS 714 *Research Methods in Endocrinology*
- GEN 704 *Genetics of Prokaryotic Microbes*
- GEN 717 *Molecular Microbiology*
- GEN 774 *Techniques in Plant Genetic Engineer & Biotech*
- GEN 795 *Investigations (4 credit minimum)*
- GEN 799 *Senior Thesis*
- INCO 790** *Advanced Research Experience (4 credit min)*

⁴ **Bioscience** choices

- BIOL 702 *Techniques in Plant Physiology & Biochemistry*
- BIOL 704 *Plant-Microbe Interactions*
- BIOL 711 *Applied Biostatistics II*
- BMCB 750 *Physical Biochemistry*
- BMCB 753 *Cell Culture*
- BMCB 754 *Lab in Biochem & Molec Biol of Nucleic Acids*
- BMCB 763 *Biochemistry of Cancer*
- BMCB 783 *Proteomics for Biological Discoveries*
- BMCB 794 *Protein Structure & Function*
- BMS 702 *Endocrinology*
- BMS 705 *Immunology*
- BMS 706 *Virology*
- BMS 714 *Research Methods in Endocrinology*
- GEN 704 *Genetics of Prokaryotic Microbes*
- GEN 705 *Population & Quantitative Genetics*
- GEN 706 *Human Genetics*
- GEN 712 *Intro to Perl Programming for Bioinformatics*
- GEN 713 *Microbial Ecology and Evolution*
- GEN 715 *Molecular Evolution*
- GEN 717 *Molecular Microbiology*
- GEN 721 *Comparative Genomics*
- GEN 771 *Molecular Genetics*
- GEN 772 *Evolutionary Genetics of Plants*
- GEN 774 *Techniques in Plant Genetic Engineer & Biotech*
- GEN 795 *Investigations (4 credit minimum)*
- GEN 799 *Senior Thesis*
- PBIO 752 *Mycology*
- ZOOL 777 *Neurobiology and Behavior*