

Graduate Degree Plan

PhD in Genetics & Genomics

Students Starting Academic Year: 2022-2023

General Degree Requirements:

- Completion of at least 180 term hours
- At least 30 of those term hours must be in Didactic courses
- Completion of at least three terms of Research Rotation before appointing a major advisor
- Students must maintain satisfactory academic progress as detailed in the Student Handbook

Track Selection:

Genetics & Genomics students may select to pursue the standard PhD curriculum, or can opt to pursue a track in Bioinformatics, Genomics, and Systems Biology (BiGSB). The choice between following the regular track or the BiGSB track is made during the first week of classes in the student's first year in the program. Additional information is available from genetics-gradprgm@bcm.edu.

Year One Requirements:

| | | | | |
|---------|------------|--|--|---------------|
| Term 1: | GS-GS-6600 | Foundations A: Molecules to Systems | 3 (Didactic) <i>(two-term course)</i> | Total to Date |
| | GS-GS-6400 | Foundations B: Biostatistics | 2 (Didactic) <i>(two-term course)</i> | |
| | GS-GS-5101 | Responsible Conduct of Research 1 | 1 | |
| | GS-GG-5100 | Student Research Seminar | 1 | |
| | | Research Rotation/Elective Courses | 5 | |
| | Total: | | | |
| Term 2: | GS-GS-6600 | Foundations A: Molecules to Systems | 3 (Didactic) <i>(two-term course)</i> | Total to Date |
| | GS-GS-6400 | Foundations B: Biostatistics | 2 (Didactic) <i>(two-term course)</i> | |
| | GS-GG-6305 | Model Systems Genetics | 3 (Didactic) | |
| | GS-GG-5100 | Student Research Seminar | 1 | |
| | | Research Rotation/Elective Courses | 3 | |
| | Total: | | | |
| Term 3: | GS-GG-6204 | Method & Logic in Genetics & Genomics | 2 (Didactic) | Total to Date |
| | GS-GG-6202 | Mammalian Genetics <i>(Regular track students)</i> | 2 (Didactic) | |
| | <i>or</i> | <i>or</i> | | |
| | GS-GG-6206 | Data Mining <i>(BiGSB track students)</i> | | |
| | GS-GS-5105 | Scientific Writing | 1 | |
| | GS-GG-5100 | Student Research Seminar | 1 | |
| | GS-GG-5105 | Genetics & Genomics Journal Club | 1 | |
| | | Research Rotation/Elective Courses | 5 | |
| Total: | | | 12 (4) | 36 (17) |
| Term 4: | GS-GG-6302 | Human Genetics | 3 (Didactic) | Total to Date |
| | GS-IY-6403 | Fundamentals of Effective Grant Writing | 4 (Didactic) | |
| | GS-GG-5100 | Student Research Seminar | 1 | |
| | GS-GG-5105 | Genetics & Genomics Journal Club | 1 | |
| | | Research Hours/Elective Courses | 3 | |
| | Total: | | | |
| Term 5: | GS-GG-5105 | Genetics & Genomics Journal Club | 1 | Total to Date |
| | | Research Hours/Elective Courses | 11 | |
| | Total: | | | |

| Year Two Requirements: | | | | |
|--|------------|---|--------|---------------------------|
| Term 1: | GS-GG-5100 | Student Research Seminar | 1 | Total to Date 72 (24) |
| | | Research Hours/Elective Courses | 11 | |
| | | | Total: | |
| Term 2: | GS-GS-5102 | Responsible Conduct of Research 2 | 1 | Total to Date 84 (24) |
| | GS-GG-5100 | Student Research Seminar | 1 | |
| | | Research Hours/Elective Courses | 10 | |
| | | | Total: | |
| Term 3: | GS-GG-5100 | Student Research Seminar | 1 | Total to Date 96 (24) |
| | GS-GG-5105 | Genetics & Genomics Journal Club | 1 | |
| | | Research Hours/Elective Courses | 10 | |
| | | | Total: | |
| <i>Student's Thesis Advisory Committee must be appointed by the end of Term 3 in the student's second year of enrollment.</i> | | | | |
| Term 4: | GS-GG-5100 | Student Research Seminar | 1 | Total to Date 108 (24) |
| | GS-GG-5105 | Genetics & Genomics Journal Club | 1 | |
| | | Research Hours/Elective Courses | 10 | |
| | | | Total: | |
| Term 5: | GS-GG-5105 | Genetics & Genomics Journal Club | 1 | Total to Date 120 (24) |
| | | Research Hours/Elective Courses | 11 | |
| | | | Total: | |
| <i>Six additional didactic hours are required for a total of thirty (30)</i> | | | | |
| Qualifying Exam Requirement: | | | | |
| <ul style="list-style-type: none"> • Must be taken by the end of the second year of enrollment • Student must complete all prerequisite activities defined by their program before taking the exam | | | | |
| Course Requirements beyond Year Two: | | | | |
| Year 3, Term 3: | GS-GS-5103 | Responsible Conduct of Research 3 | 1 | |
| Year 4, Term 3: | GS-GS-5104 | Responsible Conduct of Research 4 | 1 | |
| Recurring requirements until Graduation: | | | | |
| Terms 1-4: | GS-GG-5100 | Student Research Seminar | | As required* |
| Terms 1-5: | GS-GG-5050 | Dissertation | | As required* |
| <i>*Students shall enroll in the number of credits of Dissertation needed to be enrolled full-time (12 credits) each term through Graduation.</i> | | | | |
| Research Course Work: | | | | |
| | GS-GG-5010 | Readings | | |
| | GS-GG-5030 | Research Rotation | | |
| | GS-GG-5040 | Special Projects | | |
| | GS-GG-5050 | Dissertation | | |
| Additional Genetics & Genomics program courses*: | | | | |
| | GS-GG-5101 | Clinical Genetics | | |
| | GS-GG-6102 | Genetics Epidemiology & Population Genetics | | |
| | GS-GG-6203 | Gene & Cell Therapy | | |
| | GS-GG-6205 | Single Cell Methods & Analysis | | |
| | GS-GG-6207 | Career Development in Medical Genetics | | |
| | GS-GG-6301 | Bioinformatics & Genomic Analysis | | |
| <i>*Students may select electives from open course options in all graduate programs. Courses may be viewed in the AY22 Graduate School Bulletin</i> | | | | |

Course Requirement Checklist

PhD in Genetics & Genomics

Students Starting Academic Year: 2022-2023

| Foundations Courses (10 credits): | | | | |
|--|------------|---|------|----------------------|
| | GS-GS-6600 | Foundations A: Molecules to Systems | 6 | |
| | GS-GS-6400 | Foundations B: Biostatistics | 4 | |
| Program Core Courses (8 credits): | | | | |
| | GS-GG-6204 | Method & Logic in Genetics & Genomics | 2 | |
| | GS-GG-6302 | Human Genetics | 3 | |
| | GS-GG-6305 | Model Systems Genetics | 3 | |
| Track-Specific Course (choose one based on program track – 2 credits): | | | | |
| | GS-GG-6202 | Mammalian Genetics | | <i>Regular Track</i> |
| | GS-GG-6206 | Data Mining | | <i>BiGSB Track</i> |
| Didactic Elective Courses (at least 6 credits): | | | | |
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| Responsible Conduct of Research Courses (4 credits): | | | | |
| | GS-GS-5101 | Responsible Conduct of Research 1 | 1 | |
| | GS-GS-5102 | Responsible Conduct of Research 2 | 1 | |
| | GS-GS-5103 | Responsible Conduct of Research 3 | 1 | |
| | GS-GS-5104 | Responsible Conduct of Research 4 | 1 | |
| Professional Development Courses (5 credits): | | | | |
| | GS-GS-5105 | Scientific Writing | 1 | |
| | GS-IY-6403 | Fundamentals of Effective Grant Writing | 4 | |
| Seminar/Journal Literature Courses: | | | | |
| | GS-GG-5100 | Student Research Seminar | 1 | |
| <i>Required in terms 1-4 every year from matriculation through attainment of Permission-To-Write.</i> | | | | |
| | GS-GG-5105 | Genetics & Genomics Journal Club | 1 | <i>8 total cr.</i> |
| <i>Required in terms 2-5 for the first two years of study.</i> | | | | |
| Research Hours: | | | | |
| In each term, students enroll in the number of credits [beyond other coursework] needed to be enrolled full-time (minimum 1) | | | | |
| | GS-GG-5030 | Research Rotation | Var. | |
| <i>Taken each term when a mentor is not appointed (minimum 3 terms)</i> | | | | |
| | GS-GG-5040 | Special Projects | Var. | |
| <i>Taken each term after a mentor is appointed, and before candidacy is achieved.</i> | | | | |
| | GS-GG-5050 | Dissertation | Var. | |
| <i>Taken each term after a mentor is appointed, and after candidacy is achieved.</i> | | | | |