Typical Schedule & Requirements  
Appendix B in MCDB Handbook

**Year 1**

**Autumn Semester**
- MOLGEN/BIOCHEM 5701: *DNA Transactions and Gene Regulation* (4)
- BIOCHEM 6761: *Macromolecular Structure and Function* (3)
- MCDB 7890: Seminar (1)
- MCDB 7600: *First Year Student Orientation (Mentoring and Ethics Seminar)* (1)
- MCDB 7780: Laboratory Rotations (2 x 7 weeks) *(variable credits)*

**Spring Semester**
- MOLGEN 5705: *Cell Biology* (2)
- MOLGEN 5715: *Developmental Biology* (2)
- ELECTIVE: (2-5 credits)
- MCDB 7890: Seminar (1)
- MCDB 7780: Laboratory Rotations (2 x 7 weeks) *(variable credits)*

**Summer Semester**
- DEPT. 8999: *Dissertation Research* *(variable credits)*

**Year 2**

**Autumn Semester**
- ELECTIVE: (2-5 credits)
- MCDB 7891: Seminar Presentation (2)
- DEPT. 8999: *Dissertation Research* *(variable credits)*

**Spring Semester**
- ELECTIVE: (2-5 credits)
- MCDB 7890: Seminar (1)
- DEPT. 8999: *Dissertation Research* *(variable credits)*

**Summer Semester**
- DEPT. 8999: *Dissertation Research* *(variable credits)*
- CANDIDACY EXAM
Year 3
(Registration is limited to 3 credits post-candidacy)

Autumn Semester
• MCDB 7890: Seminar (1)
• DEPT. 8999: Dissertation Research (2)

Spring Semester
• MCDB 7891: Seminar Presentation (2)
• DEPT. 8999: Dissertation Research (1)

Summer Semester
• DEPT. 8999: Dissertation Research (3)

Year 4

Autumn Semester
• DEPT. 8999: Dissertation Research (3)

Spring Semester
• DEPT. 8999: Dissertation Research (3)

Summer Semester
• DEPT. 8999: Dissertation Research (3)

Year 5
(Typically the dissertation year)

Autumn Semester
• DEPT. 8999: Dissertation Research (3)

Spring Semester
• DEPT. 8999: Dissertation Research (3)

Summer Semester
• DEPT. 8999: Dissertation Research (3)
A minimum of **80 graduate credit semester hours** is required to graduate with a PhD.

**Required Core Courses:**
- MOLGEN/BIOCHEM 5701 (4): DNA Transactions and Gene Regulation
- BIOCHEM 6761 (3): Macromolecular Structure and Function
- MOLGEN 5705 (2): Advances in Cell Biology
- MOLGEN 5715 (2): Developmental Genetics

**Electives:**
A minimum of three elective courses is required (variable credits, see Appendix B). Electives do not have to be completed in year 2.

**Seminar:**
- Required years 1-3; total of 6 semesters.
- MCDB 7890 (1) requires attendance at biweekly student seminars and the Molecular Life Sciences Seminar Series.
- MCDB 7891 (2) has the same requirements as 7890 but additionally requires student presentation. The second year presentation is based on a paper from the primary literature. The third year presentation is based on the student's research.

**First Year Student Orientation (Mentoring and Ethics Seminar):**
MCDB 7600 (1). Required in Autumn Semester, Year 1. Joint with first-year Biophysics, Biochemistry, Microbiology, and Molecular Genetics graduate students. This course covers topics important for graduate school success, including advisor selection, time management strategies, advice on preparing fellowship applications, and presenting seminars. Multiple sessions are devoted to research ethics, including discussion of case studies.

**Laboratory Rotations:**
MCDBIO 7780 (variable credits). Two 7-week rotations in Autumn Semester and one 7-week rotation in Spring Semester of the first year are required. Students register separately for each 7 week session (sessions I and II).

**Dissertation Research**
Departmental 8999 (variable credits). The advisors' departmental 8999 course number is used after rotations are completed.

**English as Second Language (ESL):** Required for some international students, as determined by the ESL program.
Candidacy Exam:

*The Candidacy Exam must be taken by the end of Summer Semester of Year 2.* Students must complete all core courses before taking the exam, but it is not necessary to have completed Elective requirements. The Candidacy Exam is administered by the students' advisory committee, consisting of the advisor (chair) plus three additional faculty. The exam has two parts: 1) the written portion consists of a research proposal prepared by the student; 2) the oral portion consists of a verbal defense of the proposal and questioning on related topics.

Funding:

Students, except those on a fellowship or traineeship or directly paid by an advisor during the first year, are supported by the program while rotating. After that, students may expect continuing support from their research advisor. Support includes a generous stipend plus tuition and fees.