Typical Course Schedule & Requirements
Appendix A.2 in MCDB Handbook

**Year 1**

**Autumn Semester**
- **MOLGEN/BIOCHEM 5701:** DNA Transactions and Gene Regulation (4)
- **BIOCHEM 6761:** Macromolecular Structure and Function (3)*
- **MCDBIO 7890:** Student Seminar (1)
- **MCDBIO 7990:** MLS Seminar (1)
- **MCDBIO 7600:** First Year Student Orientation (Mentoring and Ethics Seminar) (1)
- **MCDBIO 7780:** Laboratory Rotations (2 x 7 weeks) (3)

**Spring Semester**
- **MOLGEN 5705:** Cell Biology (2)
- **MOLGEN 5715:** Developmental Biology (2)
- **ELECTIVE:** Select from Appendix B: Approved Electives
- **MCDBIO 7890:** Student Seminar (1)
- **MCDBIO 7990:** MLS Seminar (1)
- **MCDBIO 7780:** Laboratory Rotations (2 x 7 weeks) (3)

**Summer Semester**
- **DEPT. 8999:** Dissertation Research (4)

* Students may elect to defer BIOCHEM 6761 until Autumn of Year 2 and take the elective MOLGEN 5700 (3) Systems of Genetic Analysis in its place

**Year 2**

**Autumn Semester**
- **ELECTIVE:** Select from Appendix B: Approved Electives
- **MCDBIO 7891:** Student Seminar Presentation (1)
- **MCDBIO 7990:** MLS Seminar (1)
- **BSGP 7070:** Fundamentals of Grant Writing (4)**
- **DEPT. 8999:** Dissertation Research (variable credits)

**Spring Semester**
- **ELECTIVE:** Select from Appendix B: Approved Electives
- **MCDBIO 7890:** Student Seminar (1)
- **MCDBIO 7990:** MLS Seminar (1)
- **DEPT. 8999:** Dissertation Research (variable credits)

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

**BSGP 7070 is required of all students that joined MCDB in Autumn 2017 and beyond**
Year 3
(Registration is limited to 3 credit hours post-candidacy)

Autumn Semester
- MCDBIO 7890: Student Seminar (1)
- MCDBIO 7990: MLS Seminar (1)
- DEPT. 8999: Dissertation Research (1)

Spring Semester
- MCDBIO 7891: Student Seminar Presentation (1)
- MCDBIO 7990: MLS Seminar (1)
- 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)

Note that the number of hours of laboratory rotation or dissertation research shown above are meant to be a guide only and may need to be adjusted, depending on the nature of a student’s appointment (e.g. GRA or fellow) or other course requirements (e.g. ESL courses for international students), to ensure compliance with the minimum and maximum course load set by the Graduate School. 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

Grant writing course:
- BSGP 7070 (4): Fundamentals of Grant Writing
- Required of all students that joined MCDB in Autumn 2017 and beyond

Electives:
- A minimum of three (3) approved elective courses, totaling at least six (6) credit hours is required.
- A list of approved electives can be found in Appendix B.
- Only letter-graded courses can be approved electives; courses graded S/U cannot meet the elective requirement.
- Although advisable, electives do not have to be completed in Year 2.

Seminars:
- Required in Years 1-3; total of 6 semesters.
- MCDBIO 7890 (1) requires attendance at weekly Student Seminar. First year students give short presentations on their lab rotations.
- MCDBIO 7891 (1) has the same requirements as 7890 but additionally requires a student presentation. Second year students present a paper from the primary literature (Autumn semester). Third year students present on their thesis research (Spring semester).
- MCDBIO 7990 (1) requires attendance at weekly Molecular Life Sciences Seminar Series.

First Year Student Orientation (Mentoring and Ethics Seminar):
MCDBIO 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. A fourth 7-week rotation in Spring Semester is optional. Students register separately for each 7 week session (sessions I and II).

Dissertation Research:
Departmental 8999 (variable credits). After completing their laboratory rotations and joining a lab, students register for dissertation research each semester until they graduate. The advisors’ departmental 8999 course number is used.
Candidacy Exam:
Students are encouraged to take their candidacy exam in Summer semester of Year 2, and are required to take it no later than Autumn semester of Year 3. Refer to the MCDB Handbook for more information about this exam. Students must complete all core courses before taking the exam, and it is strongly recommended that they also complete all elective requirements.

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

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