Guidelines for Graduate Study in the Department of Developmental and Molecular Biology

All graduate students, no matter what their area of interest, matriculate into the Graduate Division of Biomedical Sciences and are governed by the Graduate Division Academic Policies.

1. Goal. The purpose of this document is to state the guidelines for graduate study toward the PhD within the Department of Developmental and Molecular Biology (DMB), with the aim of providing students with the best possible training for pursuing successfully their individual research and career goals. In addition, these guidelines are designed to promote an actively engaged and cooperative relationship between faculty and students and to foster an interactive scientific environment. These guidelines have been agreed upon by the majority of faculty members of the Department, and will be reviewed periodically upon request.

2. Coursework.

Students who started prior to 2013:

Each student is expected to complete at a minimum the following curriculum. The student must complete a total of seven courses (five for MSTP students). Exceptions may be granted based on the approval of the Chair of the Department. Note: Students with any failing grade (F) or unsatisfactory grades in Thesis Research are reviewed by the Graduate Division Academic Affairs Committee.

Required Courses

Each student is required to take Graduate Biochemistry and at least two of the following four Foundation Courses (one for MSTP students).

Gene Expression
Molecular Cell Biology
Molecular Genetics
Biochemistry of Metabolic Regulation

Electives: In addition, students must take four additional graduate courses acceptable to their mentor and/or Advisory Committee (these may include additional Foundation Courses or other electives).

Students starting 2013 or later:

PhD students:

Required courses:

Biochemistry (Block 1; 3 credits)
Molecular Genetics (Block 1; 3 credits)
Gene expression beyond the double helix (Block 2; 3 credits)
Molecular Cell Biology (Blocks 2 and 3; 6 credits)

**Electives:** According to school requirements, students must take a minimum of courses equivalent to 21 course credits, with the expectation and recommendation that they reach at least 24 to complete the PhD program. DMB students thus must take additional graduate courses acceptable to their mentor and/or Advisory Committee equivalent to at least 6 credits. Exceptions may be granted based on the approval the Chair of the Department.

Note: First year students are required to take at least six (6) credit course equivalents per block. Furthermore, students with any failing grade (F) or unsatisfactory grades in Thesis Research are reviewed by the Graduate Division Academic Affairs Committee.

**MSTP Students:**

According to school requirements, MSTP students must take courses equivalent to 18 credits.

**Required courses:**
MSTP students are required to take Biochemistry (Block 1; 3 credits) and, in addition, to select courses equivalent to 9 credits from the following:
Molecular Genetics (Block 1; 3 credits)
Gene expression beyond the double helix (Block 2; 3 credits)
Molecular Cell Biology (Blocks 2 and 3; 6 credits)

**Electives:** MSTP students must take additional graduate courses acceptable to their mentor and/or Advisory Committee equivalent to at least 6 credits. Exceptions may be granted based on the approval the Chair of the Department.

**All students:**

3. **Additional responsibilities of the graduate student in DMB:**

   1. DMB Work in Progress presentations. It is expected that each student will attend the weekly WIPs and present a WIP seminar approximately once per year.

   2. Students must attend all Departmental seminars and the Friday noon WIP. Students are expected to remain and participate in question/answer periods at these events, and to attend relevant non-departmental seminars.

   3. Journal Clubs. Each DMB student must fully participate in a Departmental journal club. Attendance of graduate students will be monitored.

   4. Students are encouraged to present data at scientific meetings. Some Institutional funds may be available to support costs. After a meeting, posters should be displayed outside of the laboratory in the hallway, indicating the meeting attended.
5. Students performing rotations are expected to spend as much time as possible in the laboratory.

4. The Qualifying Exam. All PhD students having started prior to 2013 are expected to take the exam in their second year during the period recommended by the Graduate School (typically April through June); MSTP students at the end of the first full year of PhD work. Students entering the graduate program in 2013 or after will take the exam in the fall after the end of their first year (as will be detailed by the graduate office). DMB requires an independent third aim based on an idea of the student that has not been discussed with a faculty member. This aim should be marked with an asterisk.

5. Thesis Topic Presentation. Towards the end of the academic year (typically June or July) following successful completion of the Qualifying Exam, the student will make a thirty-minute presentation to the Department of his/her current thesis project, followed by a question/answer period as part of the normal WIP series. Accordingly, an abstract of the research proposal will be distributed to the DMB students, faculty, and postdocs prior to the WIP presentation.

6. Student Advisory Committee Meetings (SAC). Starting in the second year and every year thereafter, it is required that each student meet at least once per academic year until completing the Thesis with the SAC. As of year 4, the SAC and the student meet at least twice per year. The SAC will consist of at least three Einstein faculty, two of whom, including the PI, must be from DMB. It is the student’s responsibility to arrange the Advisory Committee meetings. One week prior to the Advisory Committee meeting, the student must provide a CV and summary (two to three pages) of his/her progress towards his/her Specific Aims to the SAC members and to the DMB Departmental Office. This will provide a basis for discussion at the Advisory Committee meeting.

7. The Thesis. Successful completion of the research and permission to prepare the dissertation requires the agreement of the Student Advisory Committee. Research carried out to complete the thesis requirements must have resulted (or be believed by the Advisory Committee to eventually result) in at least one significant first-author publication. Once agreed upon by the SAC, the student will determine a Thesis Defense Committee and proceed with the Dissertation as outlined in the Graduate Division Academic Policies and Guidelines. The format of the thesis has to be agreed on by the student, the PI, and the SAC. Generally, DMB strongly recommends Format A. At least one member of the Thesis Defense Committee should be from another Department within Einstein. It is expected that one member of the Thesis Defense Committee will be invited from an institution outside Einstein. Exceptions need to be approved by the DMB faculty.
Appendix to the Graduate Division policies:

Appendix I. Department Specific Course Requirements

V. Developmental and Molecular Biology

PhD students:

**Required courses:**
- Biochemistry (Block 1; 3 credits)
- Molecular Genetics (Block 1)
- Gene expression beyond the double helix (Block 2; 3 credits)
- Molecular Cell Biology (Blocks 2 and 3; 6 credits)

**Electives:** According to school requirements, students must take a minimum of courses equivalent to 21 course credits, with the expectation and recommendation that they reach at least 24 to complete the PhD program. First year students are required to take at least six (6) credit course equivalents per block.

MSTP Students:

**Required courses:**
- Biochemistry (Block 1; 3 credits)
- Courses equivalent to 9 credits from the following:
  - Molecular Genetics (Block 1; 3 credits)
  - Gene expression beyond the double helix (Block 2; 3 credits)
  - Molecular Cell Biology (Blocks 2 and 3; 6 credits)

**Electives:** MSTP students must take additional graduate courses acceptable to their mentor and/or Advisory Committee equivalent to at least 6 credits.