



Graduate Student Guide

Revised Fall 2024

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1. Application

Application for admission is [submitted online to the School of Molecular and Cellular Biology](#) with the field of specialization as Molecular and Integrative Physiology. Applicants whose junior-senior grade point average is 3.0 or better (scale of 4.0) will be considered for standard admission. Applicants with averages between 2.6 and 3.0 will be considered, and may be admitted on limited status (i.e., on a probationary basis) if letters of recommendation are strong and indicate the ability for graduate work. Transfer graduate students will be judged on the basis of past performance.

2. Advising

Each graduate student will choose an Academic Advisor, a faculty member willing to advise and sponsor the student in research and in academic matters. Research sponsorship for the M.S. degree commits neither the student nor the Advisor to continue the relationship when the student becomes a candidate in the Ph.D. degree. A summary of the schedule of the milestones and examinations required to complete the Ph.D. program is in Appendix B.

All second semester graduate students will meet with their Academic Advisor, Department Head, and Director of Graduate Studies before classes begin in the spring of the first year and as many times as necessary thereafter. They will advise students on their coursework and Departmental, Graduate College, and University regulations and requirements. Requests for course substitutions, waivers, and proficiency examinations will be considered for approval by the MIP Director of Graduate Studies.

Each student will be required to write an annual report that will include: a summary of research progress, presentations, publications, date of exam completion, and/or estimated dates of milestones. An Annual Report form template will be sent to all students from the

MIP office by August 1. The completed form will include a portion to be filled out by the student's Academic Advisor, who will provide a digital signature on the final document. Each student should review the advisor's comments and submit the completed form in PDF format to the MIP office by the August 15 deadline. Reports will be reviewed by the Department Head, the Director of Graduate Studies, and, if needed, the student's thesis committee. The Head or Director of Graduate Studies will send a written review of the report to the student and the student's advisor and a copy will be placed in the student's file.

Each post-qualifying student will meet annually with the thesis committee to review progress. This requirement can be met by the Advisory Committee Meeting, the Preliminary Exam, the Thesis Defense, or by a Thesis Committee progress meeting scheduled in years in which none of these formal meetings occurs (see Appendix C).

3. Mentoring Guidelines

The MIP department views Mentoring as a very important part of its mission in providing effective graduate education and training, to help students be successful and productive, and to enjoy their time in our graduate program. To this end, the department has established a set of mentoring guidelines that outline expectations for both the student and the mentor to help foster a successful mentoring relationship. These guidelines can be found on the MIP website:

<https://mcb.illinois.edu/sites/default/files/2024-03/MIP%20Mentoring%20Guidelines.pdf>

4. Requirements for the MS degree in Physiology

Normally, students are awarded the Master's Degree after passing the Departmental Qualifying Examination (see section 8). Satisfactory completion of the Core Courses (see section 6) is required before the student can be awarded a Master's Degree.

The requirements for the Master's Degree include:

1. Completion of 32 hours of study including the Core Courses with a grade of A or B. [The Graduate College requires a minimum of 32 semester hours of graduate credit for the master's degree. All hours must be at the 400-level or greater. At least 12 hours must be in 500-level courses.]
2. For students whose native language is other than English, successful completion of the OEAI or passing score on the TOEFL iBT is also required before the Qualifying Examination can be taken.
3. Submission of a satisfactory Qualifying Examination paper and oral exam.

5. Requirements for the Ph.D. degree in Physiology

The requirements for the Ph.D. are:

1. Successful completion of 96 hours of study including the Core Courses (with a grade of A or B), as well as the preliminary and final examinations. At least 64 of the hours, which may include thesis credit, must be earned as residence credit in courses on the UIUC, UIC, or UIS campuses, or in courses meeting in other locations that have been approved by the Graduate College.

2. Satisfactory performance on the Qualifying Examination (see section 8),
3. Completion of the teaching requirement (see section 7),
4. Satisfactory performance on the Preliminary Examination (see section 10),
5. Satisfactory defense of the Thesis at the Final Examination (see section 11),
6. Submission of a satisfactory Thesis.

6. Core Courses

The following courses are required for all:

- Molecular & Cellular Biology 401 (Cellular Physiology, FA)
- Molecular & Cellular Biology 402 (Systems and Integrative Physiology, SP)
- Molecular & Integrative Physiology 595 (Seminars in Physiology)
- Molecular & Cellular Biology 501 (Advanced Biochemistry)
- Molecular & Cellular Biology 502 (Advanced Molecular Genetics)
- Molecular & Cellular Biology 580 (Research Ethics & Responsibilities)
- Molecular & Cellular Biology 581, 582, & 583 (3 Laboratory Rotations)
- Six credit hours taken from courses listed in the Course Menu (See Appendix A)
- Students may, in consultation with their thesis advisor and the MIP Director of Graduate Studies, petition to alter or amend the required courses.

Upon the recommendation of the Advisory Committee, additional course work may be assigned if the committee determines that the student lacks proficiency in areas that are germane to the student's area of research.

Students are required to register for Molecular & Integrative Physiology 595 each semester until passing the Qualifying Examination. Attendance at seminars is required for all graduate students.

During the first semester of the first year of graduate school, all students are considered School of MCB graduate students. As such, they take the MCB core graduate courses: MCB 501 (4 credit hours) and MCB 502 (4 credit hours). In addition, the students also register for rotations (3 credit hours of MCB 581 for the first rotation, 3 credit hours of MCB 582 for the second rotation, and 3 credit hours of MCB 583 for the third rotation). Thus, for the first semester of the first year of graduate school, the student will be enrolled for a total of 17 credit hours. The Molecular & Cellular Biology 581, 582, and 583 (three, 5-week laboratory rotations) requirement provides valuable, direct interaction with faculty, and laboratory experiences that cannot be obtained in the lecture setting. To fulfill this requirement, a student must successfully complete three laboratory rotations. It is expected that students will devote approximately 20 hours/week for each rotation.

If a student fails to receive a grade of "B-" or better in one of the above courses, the course must be taken again. Failure to obtain a course grade of "B-" or better in the second attempt may result in the student's dismissal from the Ph.D. program.

7. Teaching

Experience as a teacher is essential for a student's development as a scholar. All graduate students in the Program are required to teach during their graduate training. The teaching requirement for graduation is 50% for one semester (or 25% for two semesters).

Students whose native language is other than English and have not scored at least a 24 on the TOEFL iBT or an 8 on the IELTS Academic Test are required to pass the Oral English Assessment Interview (OEAI) test to serve as a teaching assistant. It is the student's responsibility to take the OEAI during the first year in the MIP program. Students must register for any subsequently required ESL courses if needed. Failure to pass the OEAI test prior to taking the Qualifying Examination will, at minimum, result in a delay of the Qualifying Examination and may result in a student's dismissal from the Program.

Students who meet the English Proficiency Requirement Exemptions for admission as listed by the Graduate College do not need to take the OEAI test.

8. Guidelines for the Molecular and Integrative Physiology Qualifying Examination

The Qualifying Examination is administered by the Qualifying Examination Committee. The main purpose of the Qualifying Examination is to determine whether a student is qualified to pursue a Ph.D. degree. The exam also serves as an evaluation of a student's progress over the first two years, and as the general examination for the M.S. degree. In accordance with Graduate College guidelines, all students should take the Qualifying Examination by their fourth semester of graduate study (typically the spring semester of the second year). It is expected that a student will have satisfactorily completed (or is currently registered for and thus about to complete) all the Core Courses prior to taking the Qualifying Examination. Students must have passed the OEAI test (see Section 7) before they can sit for the Qualifying Examination.

Written and Oral Components of the Qualifying Examination

The Faculty Advisor will submit a letter to the Qualifying Committee evaluating the student's scientific and intellectual abilities, technical skills, and commitment to graduate study and research.

Each student is required to submit a Qualifying Proposal before taking the oral examination. The proposal should be submitted to the department office with a complete face page (using a template available from the MIP office) **by 4 p.m. on March 15 for the Spring semester and October 15 for the Fall semester** or the following Monday if these dates fall on the weekend. Proposals that deviate from the suggested format (see below) will not be accepted for evaluation. Before submission, the student's advisor must certify that the proposal conforms to the format as described below. Once the proposal is accepted for evaluation by the Qualifying Committee, the examination date will be set, and the student will be informed.

The Qualifying Exam Proposal is in the form of a modified National Institutes of Health Pre-doctoral Research Proposal (see below). The scope of the proposed research should be that of a thesis project, i.e. the amount of research that can feasibly be accomplished by a single student within 3 years following the Qualifying Exam. The Qualifying Exam proposal should be the student's own creative work. The student should discuss the general topics of the proposal with the Academic Advisor. The advisor may review and make limited comments on a draft before the final submission. Proposals that exceed the maximum page limit of nine pages for Specific Aims and Research Strategy (see below)

will not be accepted for evaluation. Specific instructions for preparing the Qualifying Proposal follow.

General Format of Written Component of Qualifying Examination

The format of the written proposal will follow that of the NIH F31 individual NRSA pre-doctoral fellowship application, specifically the Specific Aims and Research Strategy sections. The guidelines for those sections are listed below, and come from NIH publication PHS SF424 (R&R). Page limits are indicated below. Use Arial font in black color, and a font size of 11 points or larger. Legends for figures and tables may be in 9 points or larger. (A symbol font may be used to insert Greek letters or special characters; the font size requirement still applies). Font colors other than black may be used sparingly for emphasis but the main text must be in black. Bolding, underlining, and italics may be used to indicate separations between sections and to emphasize key parts of the text. Type density, including characters and spaces, must be no more than 15 characters per inch. The text is single-spaced, but type may be no more than six lines per inch. Use standard paper size ("8 ½ x 11") with at least one-half inch margins (top, bottom, left and right) for all pages. No information should appear in the margins. All non-standard abbreviations must be defined at first use. The use of Artificial Intelligence (AI) to write any portion of the written document is not allowed. Should any portion of the document fail an AI generator check, the student may be given an outcome of "Fail" on the exam at the discretion of the Qualifying Examination Committee.

Proposal Sections

1. Cover Page:

The cover page should include the title of the project, your name, and your advisor's name. The title should be short and descriptive of the specific project proposed.

2. Specific Aims (limited to 1 page of text):

State concisely the goals of the proposed research and summarize the expected outcome(s), including the impact that the results of the proposed research will exert on the research field(s) involved. (Note, this section outlines the objectives and describes concisely what the specific research described in the proposal is intended to accomplish and the hypotheses to be tested.)

3. Research Strategy (limited to 8 pages of text including figures and tables, but not References Cited):

Organize the Research Strategy in the specified order and using the instructions provided below. Start each section with the appropriate section heading – Significance, Innovation, Approach. The Significance section should be at least 2 pages to demonstrate the student's knowledge of the relevant literature in the field. Figures and legends must be embedded within the text at appropriate points and will count toward the page limit. Cite published experimental details in the Research Strategy section and provide the full reference in the References Cited section. Make sure to define all abbreviations used.

(a) Significance

- Explain the importance of the problem or critical barrier to progress in the field that the proposed project addresses.
- Explain how the proposed project will improve scientific knowledge, technical capability, and/or clinical practice in one or more broad fields.

- Describe how the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field will be changed if the proposed aims are achieved.
- (b) Innovation (the Innovation section is optional)
- Explain how the application challenges and seeks to shift current research or clinical practice paradigms.
 - Describe any novel theoretical concepts, approaches or methodologies, instrumentation or interventions to be developed or used, and any advantage over existing methodologies, instrumentation, or interventions.
 - Explain any refinements, improvements, or new applications of theoretical concepts, approaches or methodologies, instrumentation, or interventions.
- (c) Approach
- Describe the overall strategy, methodology, and analyses to be used to accomplish the specific aims of the project. Include how the data will be collected, analyzed, and interpreted and whether sex will be considered as a biological variable. Include power analyses to determine the optimal sample numbers and the description of statistical analyses.
 - Discuss potential problems, alternative strategies, and benchmarks for success anticipated to achieve the aims.
 - If the project is in the early stages of development, describe any strategy to establish feasibility, and address the management of any high-risk aspects of the proposed work.
 - Information on Preliminary Studies that pertain to each Specific Aim should be incorporated within the Significance or Approach subsections as best suited.

Notes:

The Significance section should include background to the present proposal, critically evaluate existing knowledge, and specifically identify the questions that the proposal is intended to answer. State concisely the importance of the research described in the proposal and broad, long-term objectives as this relates to each of the Specific Aims.

The Approach section outlines the experimental design and the procedures to be used to accomplish the Specific Aims of the project. Include the means by which the data will be collected, analyzed, and interpreted. You may describe any new (innovative) methodology or assay and its advantage over existing methodologies. Discuss the potential difficulties and limitations of the proposed procedures and alternative approaches to achieve the Specific Aims.

For Figures and Tables: Although the Qualifying Proposal will provide a part of the basis for evaluation of the student's ability to pursue doctoral research work, the experimental results presented need not be of the quantity or the quality to provide the basis for an actual publication. The results need not even be "positive and conclusive." Experimentation is a learning experience, and mistakes are not unusual. However, imperfect results should be critically evaluated, and corrections of hypotheses and experimental methods should be proposed such that the proper (successful) experiments could be done in the future. Data from experiments conducted by others (e.g., other graduate students or postdocs in the same lab) may be included but the legend must

include credit given to the person who conducted the studies. Legends to Figures and Tables should allow some understanding without the need to read the main text. Define all symbols and abbreviations in the Figure or Table legend.

4. References Cited (No page limits):

This section provides full literature references, following a standard format, which includes the authors' names (in the correct order, as published), year of publication, title of the manuscript, title of the journal in which the work was published, volume and page numbers. Students may choose to use either numbered references or a list of references alphabetized by the last name of the first author, but the style used must be consistent throughout the document.

Oral Component

The oral part of the Qualifying Examination will test the student's grasp of general principles of physiology and other aspects of biology and science related to the student's specialty and area of research. It will probe the student's ability to integrate these principles with his/her research interests, and the student's understanding of inductive and deductive approaches of experimental biology. The student may not use or bring visual aids (e.g., Powerpoint slides, etc.) to the examination but can use a chalk board or pen and paper to assist with their presentation during the oral component of the examination. The student may also bring a copy of the written proposal for reference, as committee questions may refer to specific sections or figures. The oral examination typically lasts 2 hours.

Qualifying Examination Committee

The Qualifying Examination Committee will consist of 3 faculty members, appointed by the department head. The student's advisor may not serve as an examiner. At the end of the oral exam, the student will be informed of the committee decision regarding pass/fail. The Examination Committee will then generate a consensus written evaluation that will be sent to the student and advisor.

Decision

As an outcome of the Qualifying Examination, a student may receive a M.S. degree and be found qualified to continue toward the Ph.D. degree, or a student may receive a M.S. degree, but be found unqualified for the Ph.D. Program, or neither. A student may be allowed to retake the Qualifying Examination once as a rewrite of the Qualifying Examination proposal and/or a retake of the oral exam. If a student does not pass a retake of the Qualifying Examination, the MIP faculty will convene to discuss the decision and vote. Passage of the Qualifying Examination admits a graduate student to the Ph.D. level of the Graduate Program and permits enrollment in Molecular & Physiology 599, which applies research credit towards the Ph.D. degree.

9. Student Advisory (Thesis) Committee

A Student Advisory Committee will be formed early in each Ph.D. candidate's career. The student and Thesis advisor will meet with the Advisory Committee no later than the end of the semester after the Qualifying Examination, normally the first semester of the third year.

The Student Advisory Committee, in consultation with the advisor, has the responsibility of assisting the student in planning appropriate advanced course work to ensure that the

student satisfies MIP requirements. Every candidate for the Ph.D. in MIP is required to obtain a broad knowledge of physiology and a high degree of expertise in their area of specialization. Proficiency should also be developed in related disciplines, such as biochemistry, statistics, computer science, etc.

The Student Advisory Committee will consist of the thesis advisor (Director of Research) and at least three other faculty members. Three of the four members must be UIUC graduate faculty, two members must be core MIP faculty, two must be tenured, and one should have a primary appointment outside the department. The Student Advisory Committee will serve as the nucleus for the Preliminary Examination Committee. The Student Advisory Committee should be available to offer the student advice about the Preliminary Examination as well as the student's research program. The thesis advisor will serve as the Committee Chair.

10. Preliminary Examination

Although the timing of the Preliminary Examination varies more widely than that of the Qualifying Examination, it is expected that the Preliminary Examination is completed **by the end of the fourth year** (typically the spring semester). Therefore, a general expectation is that the Preliminary Examination is taken approximately two years after the Qualifying Examination. The Preliminary Examination consists of a written Preliminary Paper and an oral presentation, both describing the thesis research conducted to date and the future plans for remaining experiments to be done to complete the final thesis.

Preliminary Paper

A Preliminary Paper describing in detail the scientific problem addressed in the thesis research and proposed experimental approaches should be distributed to the members of the Preliminary Examination Committee at least two weeks before the oral exam. The Preliminary Paper should discuss extensively the significance of the project and its relationship to other work in the field and should also describe all preliminary results obtained. It is common to have this paper be formatted similarly to a final thesis, with a full introduction chapter and data chapters in the form of manuscripts describing what you have accomplished. Studies that are planned to be completed should be also described.

Example outline of chapters:

1. Introduction
 - a. This chapter should take the form of a detailed literature review, with the final portion describing how the thesis research directly addresses a particular gap in knowledge in the field. This chapter should be authored by the student.
2. Research Manuscript #1
 - a. If the manuscript is under review or published, this chapter should contain the manuscript that was submitted/accepted at a journal. A full author list and journal citation (if accepted for publication) should be included. If not yet published, this chapter should be written in the format of a journal manuscript (with Introduction, Methods, Results, and Discussion sections) and describe the relevant experimental results collected so far. If the manuscript has not yet been submitted to a journal, but includes portions written/edited by the advisor or collaborators, these names should be listed as co-authors of the

- chapter.
- b. As applicable, other manuscripts can be provided as additional chapters
- 3. Proposal for remaining experiments to complete thesis research
 - a. This chapter should include an Introduction outlining the rationale for the experiments, a description of the Methods to be used, the expected results and interpretations, pitfalls and alternatives, and an expected timeline for completion of the studies.
 - b. Multiple projects or research aims may be outlined across separate chapters as appropriate
- 4. References (if not included separately at the end of each chapter)

Students should consult with the advisor and committee members regarding specific expectations for this document in light of the thesis topic, status of the research project(s), and publishing expectations of the particular research field.

Exceptional Circumstances

If a student has unusual and compelling circumstances (e.g., switching of research advisor or serious illness) during the first four years of graduate study to prevent taking the Preliminary Examination by the end of the fourth year, the student may request an extension in a letter to the Head of the Department and Director of Graduate Studies. This letter must be received before the end of the second week of the eighth semester. In addition, the student must ask the thesis advisor to submit a letter to support the petition. If the extension is granted, the student must take the Preliminary Examination in the ninth semester. In the event an extension is denied, the student will take the Preliminary Examination during the eighth semester. Failure to meet these timelines without approval from the Department Head and Director of Graduate Studies may mean a student is no longer in good standing and subject to academic probation.

Required Paperwork and Scheduling the Exam

The Graduate College requires that the exam committee be appointed at least three weeks prior to the preliminary exam. The office staff will assist students in completing the necessary paperwork, but it is the student's responsibility to initiate the process online. Failure to contact the office early in the process will delay the exam.

Scheduling the exam time and venue is the student's responsibility. As early as possible, the student should consult with the committee members to find a mutually agreeable 2-hour block of time. This is efficiently accomplished by using websites such as when2meet.com or Doodle to poll faculty for open times in their schedules. Typically, a student would prepare a 45- to 60-min Powerpoint presentation similar to a research seminar, but 2 hours should be scheduled to allow for further questions and discussion with the committee members. Once a 2-hour block of time has been identified, the student must reserve a suitable room (e.g., Burrill 501, or a conference room in the MCB Learning Center) that is equipped with a computer projector and sufficient seating. Once a place and time for the preliminary exam is set, the student must send this information to the MIP office staff.

11. Thesis

It is expected that the thesis be defended 6 months to 1 year after the Preliminary

Examination, and it must be defended **by the end of the sixth year**. If a student and/or advisor believe that a thesis cannot be defended by the end of the sixth year, the student may request an extension in a letter to the Head of the Department and Director of Graduate Studies. The advisor must also submit a letter to support the petition. Both letters must be received before the end of the second week of the twelfth semester.

After the Preliminary Examination, students devote their time primarily to thesis research. The research described in the thesis must be deemed publishable and original. The Final Examination is administered by the Thesis Committee and is a defense of the Thesis. The office must be notified 3 weeks in advance of the scheduled defense to prepare the proper paperwork. It is the responsibility of the student to initiate the process online.

The Ph.D. candidate should provide each member of the Thesis Committee with a copy of the final draft of the Thesis at least two weeks before the Final Examination. During the Final Examination, the candidate is expected to give an oral presentation of the dissertation research work. The candidate is expected to demonstrate scholarly knowledge in the primary field of research and the ability to respond intellectually to questions raised by members of the Thesis Committee. Concerns raised by the Thesis Committee are generally expected to be responded to with modifications incorporated into the Thesis. The Thesis should contain materials suitable for high-quality scholarly publication(s) in scientific journal(s).

The final approved Thesis is submitted to the departmental office for proofreading and then electronically to the Graduate College. Make sure to check the Graduate College website to note the proper formatting of a thesis prior to sending it to the office, as these guidelines are subject to change.

12. Switching of Advisors or Programs

Selection of an advisor is one of the most important decisions that a student will make. As noted above in Section 2, students are encouraged to select an advisor after the first semester of the first year. Occasionally, a student may feel that their intellectual or career development would be served best by changing advisors. Reasons for this decision might include a change in research interests by the student, differences between the scientific philosophies of the student and advisor, or personality conflicts. Either the student or the advisor might desire that a change be made. It is departmental policy that students should be able to change advisors when such circumstances warrant. At the same time, the decision to change advisors should not be taken lightly, since the advisor may have committed a position in the laboratory, rejecting other potential students in the process, and may have provided financial support during the early training period in expectation of increased productivity later. From the student's perspective, it is likely that a change in advisors will increase the time to completion of the Ph.D. degree and reduce the recognition received for any work already completed. Because of these consequences, the student and advisor should attempt to resolve any conflicts or adjust the program of the student to better fit their career objectives before making the decision to change advisors.

In the event that a student-advisor relationship breaks down, the student or the research advisor should consult the Department Head and/or Director of Graduate Studies prior to switching research advisors. A written agreement may be necessary in cases that have implications for publications, ethical conduct, or grievances. The MIP office should also be

notified when a change in advisor occurs to make sure appointments are processed correctly.

13. Concurrent Completion of Degree Programs Outside MIP

MIP graduate students may avail themselves of other educational opportunities on campus that benefit their scientific and career goals, such as master's degree programs in other departments. However, students who choose to do so will be held responsible for ensuring that the requirements of the other program do not interfere with timely progress in meeting the requirements for the Ph.D. degree in MIP. It is important to note that the Graduate College will not approve scheduling of a Preliminary Exam or Thesis Defense in MIP if a student is primarily enrolled in another program in the same semester.

14. Vacation and Sick Leave

Graduate students are entitled to vacation on official University holidays. Research and teaching assistants are entitled to 13 days of non-accruable sick leave each year. In the event of more protracted illness, leave without pay may be negotiated. Graduate students who wish to schedule a vacation must contact their advisor well in advance to ensure that the desired vacation time will not interfere with important schedules (e.g., grant or abstract deadlines) and that the absence can be reasonably accommodated in the laboratory (e.g., to ensure proper animal care, maintenance of continued experiments and resources, etc.).

15. Ethical Conduct

Students and faculty are expected to hold the highest ethical standards during their pursuit of scholarly research. Students should become familiar with the definition of academic and sexual misconduct (see Student Code, the Graduate College Handbook, the University of Illinois Policy and Procedures on Academic Integrity in Research and Publication, and Academic Integrity and Plagiarism). Students are expected to adhere to the standards of intellectual and academic integrity as spelled out in these publications and behave in a manner that is free of unwelcome sexual contact and sex- or gender-based discrimination. Information about the University's Title IX Sexual Harassment grievance procedures can be found on the We Care at Illinois website.

Each student must complete the ethics course, MCB 580 "Research Ethics & Responsibilities," offered by the School of Molecular & Cellular Biology. Any member of the University community who becomes aware of an apparent instance of academic misconduct relating to research or scholarship is obligated to report the incident or practice to the Department Head (or to the Research Integrity Officer in the Office of the Vice Chancellor for Research and Innovation). The Department Head and the Research Integrity Officer are charged with protecting the academic reputation and position of anyone who in good faith reports misconduct in scholarship or research.

16. Grievances

Students and faculty at the University of Illinois are a diverse group whose personalities, experiences, activities, and personal goals vary widely. Most conflicts and problems that arise in this environment can be resolved without invoking formal grievance procedures; such informal resolution, where possible, is generally best for all concerned. At times, however, formal grievance procedures are necessary. Any MIP graduate student with a

grievance should follow the procedures outlined in the Graduate College Student Grievance policy.

Appendix A - Course Menu

Six hours are required. Note that F and S indicate typical offerings in Fall or Spring but are subject to change.

Lecture Format:

MCB 400 Cancer Cell Biology 3 hr (F)
MCB 408 Immunology 3 hr (S)
MCB 410 Developmental Biology 3 hr (S)
MCB 413 Endocrinology 3 hr (F)
MCB 418 Neurobiology of Senses 3 hr (S)
MCB 429 Cellular Microbiology & Disease 3 hr (S)
MCB 431 Microbial Physiology 3 hr (F)
MCB 432 Computing in Molecular Biology 3 hr (S)
MCB 442 Comparative Immunobiology 4 hr (S)
MCB 461 Cell and Molecular Neuroscience 3 hr (F)
MCB 462 Integrative Neuroscience 3 hr (S)
MCB 465 Human Metabolic Disease 3 hr (S)
MCB 480 Eukaryotic Cell Signaling 3 hr (S)
MCB 509 Current Topics in Molecular and Integrative Physiology 2 hr (F,S)
MCB 540 Scientific Writing 3 hr (F)
MCB 571/ANSC543/STAT 530 Bioinformatics 4 hr (F)
ANSC 445 Statistical Methods 4 hr (S)
ANSC 454 Neuroimmunology 3 hr (F)
ANSC 542 Applied Bioinformatics 4hr (Summer)
ANSC 554 Immunobiological Methods 3 hr (S)
CPSC 440 Applied Statistical Methods 4 hr (F,S)
ECE 480 Magnetic Resonance Imaging 3 or 4 hr (S)
FSHN 420 Nutritional Aspects of Disease 3 hr (F)
FSHN 422 Genetics and Epigenetics in Nutrition 3 hr (F)
FSHN 426 Biochemical Nutrition I 3 hr (F,S)
FSHN 480 Basic Toxicology 3 hr (F)
IB 517 Analysis of Biological Data in R 4 hr (F)

Journal-Club/Seminar Format:

*MCB 493 Special Topics Mol Cell Biol (F,S)
*MCB 529 Special Topics in Cell Devel Biol (F,S)
MCB 530 Reproductive Physiology Seminar 1 hr (F,S)
*Neuro 520 Advanced Topics in Neuroscience (F,S)
*BIOE 498 Special Topics (F,S)
*BIOE 598 Special Topics (F,S)

*Various sections with variable hours. Approval of DGS is required to receive credit toward the required 6 hours.

Laboratory Format:

BIOC 455 Techniques Biochem & Biotech 4 hr (S)
ECE 415 Biomedical Instrumentation Laboratory 2 hr (S)

Additional courses may be substituted pending approval of the DGS.

Appendix B - Milestones and Deadlines

- Each Year All students submit their annual progress report by August 15
- Year 1 Lab Rotations and Core Graduate Courses through MCB – 1st 15 weeks
- Year 1 Select a thesis advisor and lab at the end of the MCB rotations.
(In some cases, a fourth rotation may be required.)
- Year 2 Submit Qualifying Paper by March 15, 4:00 P.M.
Take MIP Qualifying Exam Spring semester (exceptions require a written petition).
- Year 3 Select thesis committee members and hold an Advisory Committee Meeting during the Fall semester.
- Year 3 The Preliminary Exam be taken during the Spring semester.
- Year 4 Preliminary Exam **must** be taken by the end of the fourth year.*
- Year 5 Strongly recommended that the thesis be defended by the end of the fifth year.
- Year 6 Thesis **must** be defended before the end of the sixth year.*

*Typically refers to spring semester of the designated year. Extensions past these deadlines require prior written approval from the Department Head and Director of Graduate Studies; see details in Graduate Student Guide sections 10 and 11.

Appendix C - Annual Meetings

Post-qualifying students are required to meet annually with their thesis committee. The progress of the student and the most recent annual report will be considered at the meeting.

Year 2	Qualifying Exam – normally in the second semester
Year 3	Advisory Committee meeting – normally in the first semester
Year 3	Preliminary Exam (recommended for the second semester) or Thesis Committee progress meeting
Year 4	Preliminary Exam (if not taken in Year 3), Thesis Defense, or Thesis Committee progress meeting
Year 5	Thesis Defense or Thesis Committee progress meeting
Year 6	Thesis Defense