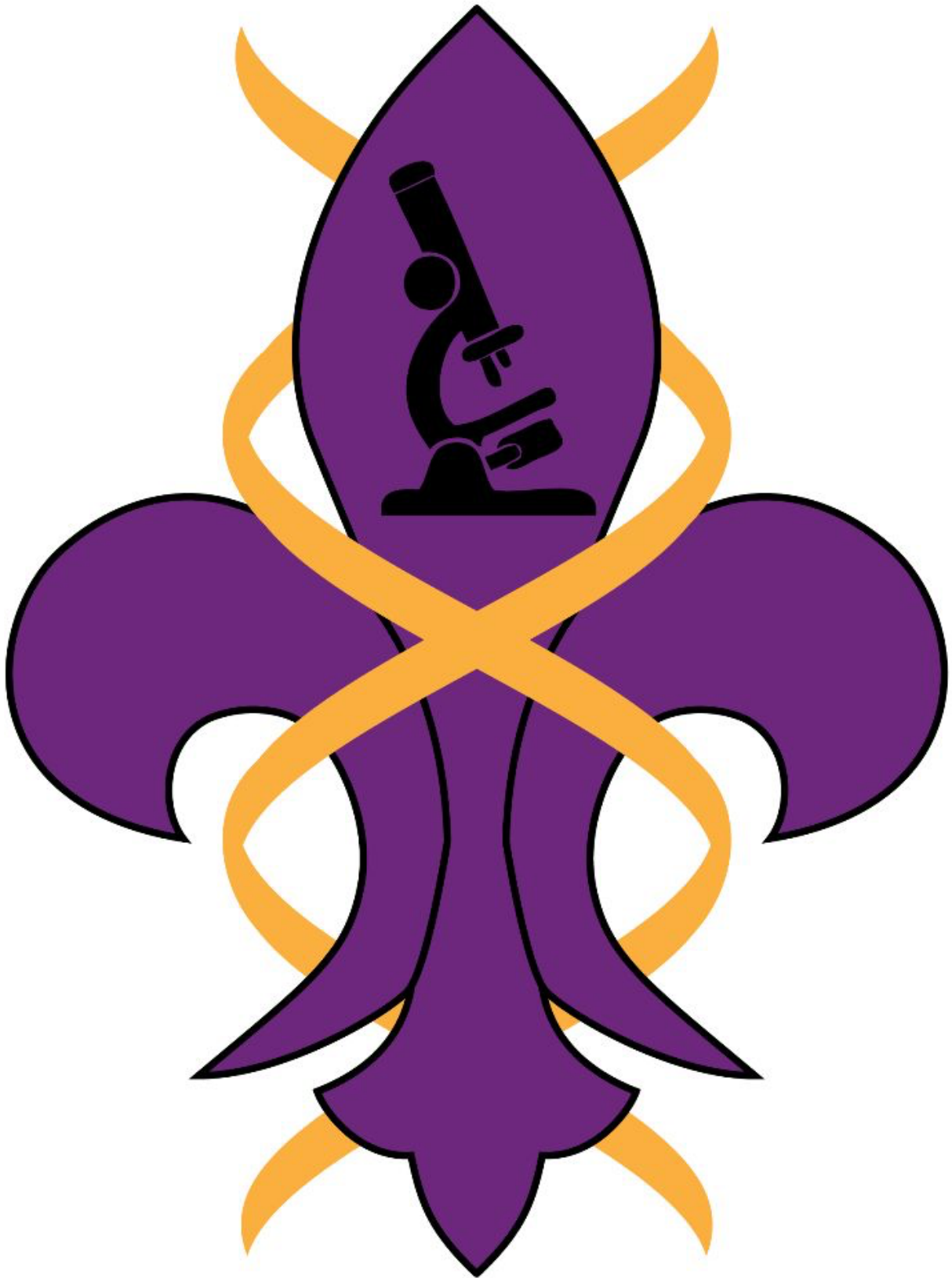


Department of Microbiology, Immunology, and Parasitology

Graduate Student Manual



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## DEPARTMENT OF MICROBIOLOGY, IMMUNOLOGY, AND PARASITOLOGY (MIP)

## Outline of Graduate Student Requirements

|                                              | YEAR 1 | YEAR 2 | YEAR 3 | YEAR 4/5 |
|----------------------------------------------|--------|--------|--------|----------|
| <b>Coursework</b>                            | +      | +      |        |          |
| <b>Rotations</b>                             | +      |        |        |          |
| <b>Seminar</b>                               | +      | +      | +      | +        |
| <b>Analysis of Research Lit/Journal Club</b> | +      | +      | +      | +        |
| <b>Dissertation Research</b>                 | +      | +      | +      | +        |
| <b>Dissertation Committee Selection</b>      |        | +      |        |          |
| <b>Dissertation Committee Meetings</b>       |        | +      | +      | +        |
| <b>Qualifying Exam</b>                       |        | +      |        |          |
| <b>Preliminary Exam</b>                      |        |        | +      |          |
| <b>Final Examination</b>                     |        |        |        | +        |

**A. COURSEWORK****YEAR 1:****FALL**

|           |                                        |
|-----------|----------------------------------------|
| INTER 111 | Biochemistry                           |
| INTER 121 | Cell Molecular Biology A               |
| INTER 122 | Cell Molecular Biology B               |
| INTER 125 | Introduction to Microbial Pathogenesis |
| INTER200  | Professionalism in Science I           |
| INTER 220 | Ethics in the Biomedical Sciences      |
| MICRO 228 | Lab Rotations in Microbiology          |
| MICRO 229 | Analysis of Research Literature        |
| MICRO 298 | Seminar in Microbiology                |
| INTER 220 | Ethics in Biomedical Sciences          |

**SPRING**

|           |                                   |
|-----------|-----------------------------------|
| INTER 240 | Professionalism in Science II     |
| INTER 260 | Responsible Conduct of Research I |
| MICRO 225 | Advanced Medical Bacteriology     |
| MICRO 276 | Gen & Molecular Virology          |
| MICRO 296 | Fundamentals in Immunology        |
| MICRO 228 | Lab Rotations in Microbiology     |
| MICRO 229 | Analysis of Research Literature   |
| MICRO 298 | Seminar in Microbiology           |

**SUMMER**

MICRO 300 Thesis Research

**YEAR 2****FALL**

MICRO 231 Molecular Biology of Eukaryote Pathogens

MICRO 250 Advanced Microbial Pathogenesis

MICRO 229 Analysis of Research Literature

MICRO 298 Seminar in Microbiology

INTER 280 Responsible Conduct of Research II

**SPRING**

MICRO 229 Analysis of Research Literature

MICRO 298 Seminar in Microbiology

More detailed explanations of coursework requirements and sample curricula for registration are shown in **Appendices 1 and 2**.

Students must complete at least 60 credits (30 credits graded). Students can receive a maximum of 15 credits for thesis research (MICRO 300/400), 4 credits each for Analysis of Research Literature (MICRO 229) and Seminar in Microbiology (MICRO 298).

**B. ASSESSMENT**

**Coursework Assessment:** Students may be dismissed from the program if:

- Their grade point average is below 3.0 at the end of any semester
- They receive two grades below 'B'

**Additional Assessments:**

- In addition to coursework, students will be assessed during lab rotations, seminars, journal clubs, biannual committee meetings, and qualifying and preliminary examinations. These assessments will document research abilities, critical thinking and work ethic.
- Failure to make satisfactory progress in any of these areas may be grounds for dismissal. If this situation arises, it will be discussed first with the Department Head.

**C. LABORATORY ROTATIONS****Year 1**

During the first year, students will participate in three lab rotations each of approximately 11 weeks duration:

- August through October
- November through January
- February through April
- Specific dates will be set each year before the start of the Fall semester.

**Minimal Expectations of Students During Rotations**

- 20+ hours a week for rotation work, including after hours and weekends as necessary
- Students must respect the schedule arranged for them by their rotation supervisor
- Written reports from the rotation supervisor will be required at the commencement and conclusion of each rotation on forms provided.
  - When the student enters the laboratory, the mentor and student will agree on and complete “Rotation Form I” describing reasonable goals for the rotation (see MIP website for rotation forms). The form will then be submitted to [mipgrad@lsuhsc.edu](mailto:mipgrad@lsuhsc.edu).
  - At end of the rotation: the mentor and student will agree on accomplishments and techniques achieved by the student and to what level the goals were reached.
- At the end of the rotation: the mentor will complete “Rotation Form II” and submit this to [mipgrad@lsuhsc.edu](mailto:mipgrad@lsuhsc.edu). Both forms I & II will be placed in the student file.
- Students will receive a grade of satisfactory or unsatisfactory for each rotation and can be dismissed from the program due to unsatisfactory performance in lab rotations.
- Students will finalize a lab/mentor for their PhD study before June 1 in their first year.
- Students will work full time on their dissertation project during the summer between year 1 and 2.

**D. COMMITTEE MEETINGS****YEAR 2****DISSERTATION COMMITTEE**

- At the beginning of the second year of graduate study, the student and mentor will select a Dissertation Committee.
- The membership of the Committee must be approved by the Department Head.
- The Committee will comprise at least 5 Graduate Faculty Members of LSUHSC including:
  - A. At least 3 LSUHSC-MIP Graduate Faculty including the mentor,
  - B. At least 1 LSUHSC-non-MIP Graduate Faculty (note A + B must equal at least 5).
 Students may add a faculty member external to the university.
- The completed Dissertation Committee form is submitted to [mipgrad@lsuhsc.edu](mailto:mipgrad@lsuhsc.edu):  
[https://www.medschool.lsuhs.edu/microbiology/docs/2016\\_Dissertation%20Committee%20Template.pdf](https://www.medschool.lsuhs.edu/microbiology/docs/2016_Dissertation%20Committee%20Template.pdf)

**COMMITTEE MEETINGS**

- At the first committee meeting, the committee will elect a chairperson (not the mentor), who is responsible for the conduct of committee meetings and finalization of meeting reports.
- Committee meetings will be held at least once every 6 months.
  - Regular committee meetings are held for the duration of the student’s membership of the MIP graduate program, including after the preliminary exam.
  - The student is responsible for setting the time and location of each meeting, preferably via a Doodle poll or direct contact with committee members.
  - MIP graduate students present a research seminar each year - ideally, one of the 6-monthly committee meetings is scheduled for directly after the seminar.

- The student must provide a report to all committee members **at least 3 days before each committee meeting**, including:
  - a ‘specific aims-style’ document of one page in length, including a short introduction of the subject area; the significance of project, and the specific aims of project. This document should be in NIH style, but can be less formal, e.g. can be in bulleted form.
  - a 1 to 2-page progress report describing the work accomplished since the previous meeting. This must address each of the 6-month goals stated in the previous committee report and should NOT be replaced by a copy of any PowerPoint/seminar presentation.
  - goals for the next 6-month period.
- As soon as possible **after each committee meeting**, a report will be prepared by the committee chair, including an assessment of:
  - the level of understanding of the project and methodologies as reflected by the ability of the student to present and discuss all aspects of the work.
  - satisfactory completion of 6-month goals (or appropriate effort being made).
  - goals and expectations for next 6-month period.
  - the potential of the work for publication.

The preparation of the committee meeting report is coordinated by the committee chair and all committee members will contribute to/approve the final draft. The report is finalized after agreement of the committee and is discussed with the student and mentor. Copies of the report are emailed to the student, the mentor and [mipgrad@lsuhsc.edu](mailto:mipgrad@lsuhsc.edu). The report will be placed in the student’s file.

## YEARS 2 – 5

- Committee meetings should occur at least every 6 months.
- Written requirements of the student prior to each meeting, and meeting reports, are as above.

If the committee finds that the student is not making appropriate effort towards the defined 6-month goals at two consecutive committee meetings, then this may represent sufficient reason for dismissal from the program. If this situation arises, it will be discussed first with the Department Head.

## E. SEMINAR/JOURNAL CLUB

### ALL YEARS

#### **Seminar**

- **Attendance at MIP department seminars, MIP dissertation defense seminars, and the monthly SoM Dean’s seminar series is mandatory for all MIP graduate students.**
- Each student is required to present work in progress at the departmental seminar series once during each calendar year of enrollment.
  - Year 1 students will present their work from a rotation, typically near the end of the Spring semester.
- Dissertation Committee meetings will ideally be scheduled for immediately after the seminar and should include discussion of the seminar presentation with the student.



**Graduate Journal Club (MICRO 229)**

- All students are required to attend and participate in the *Analysis of Research Literature* course (MICRO 229) in every semester that it is offered throughout their PhD studies. This course comprises journal club presentations and discussion.
- Students are also encouraged to participate in a 'discipline-based' journal club within the department if not engaged in this activity during regular meetings of their own laboratory.
- Participation in Analysis of Research Literature course and journal clubs will be discussed at dissertation committee meetings.

**F. QUALIFYING EXAMINATION****YEAR 2**

- Students will take the Qualifying Exam before the end of year 2. The Qualifying Exam and instructions are described in detail in **Appendix 3**.
- At the completion of the oral examination, the Qualifying Examination Committee will discuss student performance and determine if the student passed or failed.
- If the student passes, they will receive approval to continue with their Ph.D. research project.
- If the student fails, the committee may provide the option to retake the exam. If the committee does not provide this option, the student may continue in the program to obtain a MS degree (Masters in Biomedical Sciences) subject to all required approvals. The option to re-take the exam after the completion of a MS degree may be provided after further discussion with the mentor, department head, and committee.

**G. PRELIMINARY EXAMINATION****YEAR 3**

- According to Graduate School policy, the student must pass the Preliminary Exam at least one academic year (3 consecutive semesters) before the final defense examination.
- Students are required to take the Preliminary Exam by the end of their 3<sup>rd</sup> year.
- The Preliminary Exam and instructions are described in more detail in **Appendix 4**.
- A completed, typed 'REQUEST FOR PRELIMINARY EXAMINATION FORM' must be sent to the Graduate School at least 2 weeks prior to the examination date:  
[https://graduatestudies.lsuhsu.edu/docs/Request\\_Preliminary\\_Exam.pdf](https://graduatestudies.lsuhsu.edu/docs/Request_Preliminary_Exam.pdf)
- A report of the outcome of the Preliminary Exam is prepared by the Committee Chair, distributed to committee members for comment, and the final draft then sent to [mipgrad@lsuhsc.edu](mailto:mipgrad@lsuhsc.edu) and filed in the student records.
- A completed 'REPORT OF PRELIMINARY EXAMINATION FORM' must be sent to the Dean of the School of Graduate Studies following completion of the committee's recommendation:  
<https://graduatestudies.lsuhsu.edu/docs/ReportPreliminaryExamination.pdf>

**YEAR 4**

- Register for MICRO 299 (Research Proposal in Microbiology) in the semester following successful completion of the Preliminary Examination.

## **H. MANUSCRIPTS**

### **YEARS 3-5**

- Outlines of manuscripts to be submitted for publication should be discussed at committee meetings.
- It is desirable that a manuscript for publication in a peer-reviewed journal and pertaining to dissertation work is in draft form (or submitted) by the time of the preliminary examination.
- Acceptance for publication of at least one primary authored manuscript in a peer-reviewed journal and pertaining directly to the dissertation work is required for graduation.
- Exceptions are possible with the permission of the Department Head. These include:
  - Manuscript submission delayed by patent application.
  - Article submitted and reviewed, but requires revision.
  - In such instances, the student must submit a draft manuscript to the dissertation committee.

## **I. FINAL EXAMINATION**

### **YEAR 4/5**

- Guidelines for writing the dissertation can be found at:  
<https://graduatestudies.lsuhsu.edu/docs/Dissertation%20Guidelines%20Manual.pdf>
- A completed 'REQUEST FOR DISSERTATION DEFENSE FORM' and a copy of the Dissertation Abstract must be received by the Graduate School at least two weeks prior to the defense date:  
<https://graduatestudies.lsuhsu.edu/docs/Dissertation%20&%20Thesis%20Request.pdf>
- A copy of the dissertation must be circulated to each dissertation committee member at least two weeks prior to the public defense date.
- A seminar on the dissertation research will be presented at the time of the dissertation defense.
- The seminar, time and location must be publicized at least two weeks prior to the examination date.
- The committee will conduct the final oral examination based on the contents of the dissertation and matters pertaining to the dissertation and will then decide by vote if the student has passed. Two or more negative votes will constitute a basis for failure of the examination.
- If the committee determines that the student has passed the examination, but that corrections to the dissertation are necessary, the student is given a limited amount of time to make the corrections. Committee members may leave final approval to the major professor or may require to see the corrected dissertation.
- The student will have the DISSERTATION FINAL EXAMINATION REPORT Form ready for committee members to sign at the completion of the final examination:  
<https://graduatestudies.lsuhsu.edu/docs/Dissertation%20Thesis%20Report%20Form.pdf>
- Committee members will sign this form to indicate pass or failure of the exam at the meeting. However, the Department Head will sign this form only after notification that final corrections, if any, have been made to the satisfaction of the committee and/or major professor.

## **J. INDIVIDUAL DEVELOPMENT PLAN (IDP)**

- During the INTER 200 course, students will construct an Individual Development Plan (IDP) based on the AAAS myIDP site (<https://myidp.sciencecareers.org/>).
  - MD/PhD students are instructed to write an IDP during their first semester after they enter the PhD program.

- By the end of the first semester, students will discuss their IDP with the MIP Graduate committee.
- After the student enters a laboratory for dissertation research, they will discuss their IDP with their mentor.
- Students will present their IDP at their first dissertation committee meeting.
- During the fall semester each year, the student and their mentor will revisit the IDP and edit if necessary.
- Updates (or lack thereof) will be discussed at dissertation committee meetings at least once a year.

#### **K. PROFESSIONALISM**

- In addition to coursework, there are professional expectations of graduate students that include code of conduct and compliance training. Further information on professional expectations, and on procedures for conflicts and grievances, can be found in the Graduate Studies Handbook on the School of Graduate Studies website: <http://graduatestudies.lsuhscc.edu>
- While there is no specific policy regarding outside employment for graduate students, it is generally discouraged. It is expected that students will meet all requirements for graduate study and their stipend as detailed in the MIP Graduate Student Manual. It is also expected that any outside employment, including as tutors, or other appropriate potentially “career-benefiting” endeavors, will be discussed with the mentor/major professor. If work hours/progress in the lab are adversely affected by outside employment, this should be noted and discussed at committee meetings.

## MIP GRADUATE STUDENT CHECKLIST

### YEAR 1: SUMMARY CHECKLIST

- Complete coursework and maintain  $\geq 3.0$  grade point average
- Complete 3–4 lab rotations with satisfactory reviews from supervising faculty
- Choose a laboratory for the PhD research program
- Present a MIP seminar based on Rotation work
- Construct IDP Plan
- **FORM CHECKLIST for Student Record folders**
  - Lab rotation I Part I and Part II
  - Lab rotation II Part I and Part II
  - Lab rotation III Part I and Part II
  - Lab rotation IV Part I and Part II (if applicable)
  - Selection of mentor for dissertation research

### YEAR 2: SUMMARY CHECKLIST

- Complete coursework and maintain  $\geq 3.0$  grade point average
- Finalize membership of dissertation committee
- Pass Qualifying Exam
- Presentation of seminar in MIP
- Presentation at MIP journal club
- Commence committee meetings
- Review IDP Plan
- **FORM CHECKLIST for Student Record folder**
  - Dissertation Committee member list
  - Report/summary of Qualifying Exam by qualifying committee chair
  - Report of 1<sup>st</sup> committee meeting

### YEAR 3: SUMMARY CHECKLIST

- Dissertation Committee meeting at least once every 6 months
- Preliminary Examination
- Presentation of seminar in MIP
- Presentation at MIP journal club
- Review IDP Plan
- **FORM CHECKLIST for Student Record Folder**
  - Summary report of result of Preliminary Exam by Dissertation Committee chair for committee and student
  - Report of committee meeting year 3 (1)
  - Report of committee meeting year 3 (2)
- **FORM CHECKLIST for School of Graduate Studies**
  - Request for Preliminary Examination form at least two weeks before exam date
  - Report of Preliminary Examination signed by committee

## YEARS 4/5: SUMMARY CHECKLIST

- Dissertation Committee meeting at least once every 6 months
- Presentation of seminar in MIP each year
- Presentation at MIP journal club each year
- Submission of at least one manuscript to peer reviewed journal
- Review IDP Plan
- **FORM CHECKLIST for Student's Record Folder**
  - Report of committee meeting year 4 (1)
  - Report of committee meeting year 4 (2)
  - Report of committee meeting year 5 (1)
  - Report of committee meeting year 5 (2)
- **FORM CHECKLIST for DISSERTATION DEFENSE**
  - Request for Dissertation Defense and Abstract to School of Graduate Studies at least two weeks prior to defense date
  - Dissertation Seminar title and location publicly advertised school-wide two weeks prior to defense
  - Dissertation distributed to committee members two weeks prior to defense
  - Dissertation completion (pass) paperwork submitted to School of Graduate Studies;
  - Submit corrected dissertation to School of Graduate Studies

**APPENDIX 1: Course Requirements and Sample Curriculum for MIP Department PhD Students**

| Course Title                         | Course Number     | Number of Credits | Graded | Additional Notes                                                         |
|--------------------------------------|-------------------|-------------------|--------|--------------------------------------------------------------------------|
| Biochemistry                         | INTER 111         | 4                 | 4      |                                                                          |
| Cell and Molecular Biology A         | INTER 121         | 3                 | 3      |                                                                          |
| Cell and Molecular Biology B         | INTER 122         | 3                 | 3      |                                                                          |
| Intro to Microbial Pathogenesis      | INTER 125         | 3                 | 3      | Minimum grade of B is required                                           |
| Professionalism in Science I         | INTER 200         | 1                 |        |                                                                          |
| Ethics in Biomedical Sciences        | INTER 220         | 1                 |        |                                                                          |
| Professionalism in Science II        | INTER 240         | 1                 |        |                                                                          |
| Responsible Conduct in Research      | INTER 260         | 1                 |        |                                                                          |
| Responsible Conduct in Research      | INTER 280         | 1                 |        |                                                                          |
| Laboratory Rotations in Microbiology | MICRO 228         | 6                 |        |                                                                          |
| Fundamentals in Immunology           | MICRO 296         | 3                 | 3      | Minimum grade of B is required                                           |
| Advanced Medical Bacteriology        | MICRO 225         | 3                 | 3      |                                                                          |
| Mol Biol Pathogenic Eukaryotes       | MICRO 231         | 3                 | 3      |                                                                          |
| General and Molecular Virology       | MICRO 276         | 3                 | 3      |                                                                          |
| Advanced Microbial Pathogenesis      | MICRO 250         | 3                 | 3      |                                                                          |
| Selected Topics in Microbiology†     | MICRO 281         | 0-6               | 0-6    |                                                                          |
| Approved Electives                   |                   | 0-3               | 0-3    |                                                                          |
| Research Proposal in Microbiology†   | MICRO 299         | 3                 | 3      | If sufficient graded credits, can be P/F                                 |
| Seminar in Microbiology              | MICRO 298         | 4‡                |        | Only 4 credits go toward graduation; students must attend every semester |
| Analysis of Research Literature      | MICRO 229         | 4‡                |        | Up to 4 credits are possible; students must attend every semester        |
| Thesis and Dissertation Research     | MICRO 300 and 400 | 15‡               |        | Only 15 credits go toward graduation                                     |
| 60 credits required for graduation   |                   | ≥64               | ≥30    | 30 graded credits are required                                           |

† Selected Topics may be offered as graded or pass/fail.

‡ Non-graded; maximum number of credits that can be received

## Suggested electives:

|           |                                       |           |                                           |
|-----------|---------------------------------------|-----------|-------------------------------------------|
| INTER 143 | Experimental Design and Analysis      | 2 credits | Spring Semester                           |
| INTER 141 | Genetics                              | 2 credits | Jan 3 – Feb 9 (T, Th) Spring Semester     |
| INTER 142 | Pharmacology                          | 2 credits | Feb 14 – March 28 (T, Th) Spring semester |
| BIO 6100  | Biostatistical methods                | 4 credits | Fall/summer semesters                     |
| BIOCH 299 | Professional Skills-Graduate Students | 1 credit  | Spring semester (not graded)              |

**SAMPLE CURRICULUM FOR REGISTRATION FOR MIP GRADUATE PROGRAM (Ph.D.)****Fall – year 1 (17 credits; 13 credits letter grade)**

|           |                                        |           |           |
|-----------|----------------------------------------|-----------|-----------|
| INTER 111 | Biochemistry                           | 4 credits | Grade     |
| INTER 121 | Cell & Mol Biol A                      | 3 credits | Grade     |
| INTER 122 | Cell & Mol Biol B                      | 3 credits | Grade     |
| INTER 200 | Professionalism in Science I           | 1 credit  | Pass/Fail |
| INTER 220 | Ethics in Biomedical Sciences          | 1 credit  | Pass/Fail |
| MICRO 224 | Introduction to Microbial Pathogenesis | 3 credits | Grade     |
| MICRO 228 | Laboratory Rotations                   | 2 credits | Pass/Fail |

**Satisfactory progress:** GPA ≥ 3.0; >B in MICRO 224 and satisfactory review from laboratory rotation

**Spring – year 1 (14 credits; 9 credits letter grade)**

|           |                                   |           |           |
|-----------|-----------------------------------|-----------|-----------|
| INTER 240 | Professionalism in Science II     | 1 credit  | Pass/Fail |
| INTER 260 | Responsible Conduct of Research I | 1 credit  | Pass/Fail |
| MICRO 225 | Advanced Medical Bacteriology     | 3 credits | Grade     |
| MICRO 276 | Gen & Molecular Virology          | 3 credits | Grade     |
| MICRO 296 | Fundamentals in Immunology        | 3 credits | Grade     |
| MICRO 228 | Lab Rotations in Microbiology     | 3 credits | Pass/Fail |

**Satisfactory progress:** GPA  $\geq$  3.0;  $\geq$  B in MICRO courses and satisfactory reviews from laboratory rotations

**Summer –year 1 (6 credits;)**

|           |                 |           |           |
|-----------|-----------------|-----------|-----------|
| MICRO 300 | Thesis research | 6 credits | Pass/Fail |
|-----------|-----------------|-----------|-----------|

**Fall – year 2 (9 credits; 6 credits letter grade)**

|           |                                    |           |           |
|-----------|------------------------------------|-----------|-----------|
| MICRO 231 | Mol Biol Eukaryotic Pathogens      | 3 credits | Grade     |
| MICRO 250 | Advanced Microbial Pathogenesis    | 3 credits | Grade     |
| INTER 280 | Responsible Conduct in Research II | 1 credits | Pass/Fail |
| MICRO 298 | Seminar in Microbiology            | 1 credit  | Pass/Fail |
| MICRO 299 | Analysis of Research Literature    | 1 credit  | Pass/Fail |

**Satisfactory progress:** GPA  $\geq$  3.0; and satisfactory progress in research laboratory

**Students must select a graduate research committee****Spring - year 2 (9 credits)**

|           |                                 |           |            |
|-----------|---------------------------------|-----------|------------|
| MICRO 229 | Analysis of Research Literature | 1 credit  | Pass/ Fail |
| MICRO 298 | Seminar in Microbiology         | 1 credit  | Pass/Fail  |
| MICRO 300 | Thesis research                 | 7 credits | Pass/Fail  |

**Summer- year 2 (6 credits)**

|           |                       |             |           |
|-----------|-----------------------|-------------|-----------|
| MICRO 400 | Dissertation research | 1-6 credits | Pass/Fail |
|-----------|-----------------------|-------------|-----------|

**Students must take the Qualifying Examination by the end of their second year of Graduate Studies.**

**Satisfactory progress:** GPA  $\geq$  3.0; passing of the Qualifying Examination and demonstration of successful progress as determined through committee meetings.

**In subsequent years, students will register for 9 credits / semester. They will be required to participate in MIP seminar and Analysis of Research Literature every semester.**

**APPENDIX 2: Course Requirements for entering MD/PhD and IDP Students**

| Course Title                       | Course Number     | Number of Credits | Graded        | Additional Notes                                                                                                        |
|------------------------------------|-------------------|-------------------|---------------|-------------------------------------------------------------------------------------------------------------------------|
| Professionalism in Science I       | INTER 200         | 1                 |               |                                                                                                                         |
| Ethics in Biomedical Sciences      | INTER 220         | 1                 |               |                                                                                                                         |
| Professionalism in Science II      | INTER 240         | 1                 |               |                                                                                                                         |
| Responsible Conduct in Research I  | INTER 260         | 1                 |               |                                                                                                                         |
| Responsible Conduct in Research II | INTER 280         | 1                 |               |                                                                                                                         |
| Fundamentals in Immunology         | MICRO 296         | 3                 | 3             | Minimum grade of B is required                                                                                          |
| Fundamentals in Immunology         | MICRO 296         | 3                 | 3             |                                                                                                                         |
| Advanced Medical Bacteriology      | MICRO 225         | 3                 | 3             |                                                                                                                         |
| Mol Biol Pathogenic Eukaryotes     | MICRO 231         | 3                 | 3             |                                                                                                                         |
| General and Molecular Virology     | MICRO 276         | 3                 | 3             |                                                                                                                         |
| Advanced Microbial Pathogenesis    | MICRO 250         | 3                 | 3             |                                                                                                                         |
| Selected Topics in Microbiology†   | MICRO 281         | 0-6               | 0-6           | Number of <b>graded</b> credits from these courses will depend on number of credits transferred from medical curriculum |
| Approved Electives                 |                   | 0-3               | 0-3           |                                                                                                                         |
| Research Proposal in Microbiology  | MICRO 299         | 3                 | 3             |                                                                                                                         |
| Seminar in Microbiology            | MICRO 298         | 4‡                |               | Only 4 credits go toward graduation; students must attend every semester                                                |
| Analysis of Research Literature    | MICRO 229         | 4‡                |               | Up to 4 credits are possible; students must attend every semester                                                       |
| Thesis and Dissertation Research   | MICRO 300 and 400 | 15‡               |               | Only 15 credits count towards graduation                                                                                |
| 60 credits required for graduation |                   | <b>46-55</b>      | <b>21-30†</b> | 30 graded credits are required                                                                                          |

IDP students are required to take the IDP curriculum in year 1 Fall semester.

† Selected Topics may be offered as graded or pass/fail.

‡ Non-graded; maximum number of credits that can be received.

Suggested electives:

|                                                 |           |                     |
|-------------------------------------------------|-----------|---------------------|
| BIO 6100 Biostatistical methods                 | 4 credits |                     |
| BIOCH 299 Professional Skills-Graduate Students | 1 credit  | Spring (not graded) |

**SAMPLE CURRICULUM FOR REGISTRATION FOR MIP PROGRAM (M.D./Ph.D.)****Summer –year 1 (6 credits;)**

|           |                 |           |           |
|-----------|-----------------|-----------|-----------|
| MICRO 300 | Thesis research | 6 credits | Pass/Fail |
|-----------|-----------------|-----------|-----------|

**Fall – year 1 (9 credits; 1 credits letter grade)**

|           |                               |           |           |
|-----------|-------------------------------|-----------|-----------|
| INTER 200 | Professionalism in Science I  | 1 credit  | Pass/Fail |
| INTER 220 | Ethics in Biomedical Sciences | 1 credit  | Pass/Fail |
| MICRO 298 | Seminar in Microbiology       | 1 credit  | Pass/Fail |
| MICRO 300 | Thesis Research               | 6 credits | Pass/Fail |

Biostatistics could be taken in the Fall semester

**Satisfactory progress:** GPA  $\geq$  3.0; satisfactory progress in research laboratory



**Students must select a dissertation committee****Spring – year 1 (9 credits; 8 credits letter grade)**

|           |                                   |           |           |
|-----------|-----------------------------------|-----------|-----------|
| INTER 240 | Professionalism in Science II     | 1 credit  | Pass/Fail |
| INTER 260 | Responsible Conduct of Research I | 1 credit  | Pass/Fail |
| MICRO 225 | Advanced Medical Bacteriology     | 3 credits | Grade     |
| MICRO 276 | General & Molecular Virology      | 3 credits | Grade     |
| MICRO 296 | Fundamentals in Immunology        | 3 credits | Grade     |

**Satisfactory progress:** GPA  $\geq$  3.0;  $\geq$  B in MICRO courses and satisfactory progress in research laboratory

**Summer –year 2 (6 credits;)**

|           |                 |           |           |
|-----------|-----------------|-----------|-----------|
| MICRO 300 | Thesis research | 6 credits | Pass/Fail |
|-----------|-----------------|-----------|-----------|

**Fall – year 2 (9 credits; 6 credits letter grade)**

|           |                                    |           |           |
|-----------|------------------------------------|-----------|-----------|
| MICRO 231 | Mol Biol Eukaryotic Pathogens      | 3 credits | Grade     |
| MICRO 250 | Advanced Microbial Pathogenesis    | 3 credits | Grade     |
| INTER 280 | Responsible Conduct in Research II | 1 credits | Pass/Fail |
| MICRO 299 | Analysis of Research Literature    | 1 credit  | Pass/Fail |
| MICRO 298 | Seminar in Microbiology            | 1 credit  | Pass/Fail |
| MICRO 300 | Thesis Research                    | 1 credit  | Pass/Fail |

**Satisfactory progress:** GPA  $\geq$  3.0; and satisfactory progress in research laboratory

**Spring - year 2 (9 credits)**

|           |                                 |           |            |
|-----------|---------------------------------|-----------|------------|
| MICRO 229 | Analysis of Research Literature | 1 credit  | Pass/ Fail |
| MICRO 300 | Thesis research                 | 8 credits | Pass/Fail  |

**Summer- year 3 (6 credits)**

|           |                       |           |           |
|-----------|-----------------------|-----------|-----------|
| MICRO 400 | Dissertation research | 6 credits | Pass/Fail |
|-----------|-----------------------|-----------|-----------|

**Students must take the Qualifying Examination by the end of their second year of Graduate Studies.**

**Satisfactory progress:** GPA  $\geq$  3.0; passing of the Qualifying Examination and demonstration of successful progress as determined through committee meetings.

**In subsequent years, students will register for 9 credits/semester and will be required to participate in MIP seminar and Analysis of Research Literature every semester.**

**APPENDIX 3: Qualifying Exam instructions**

The Qualifying Exam is in two parts. Part A consists of 3 questions given over 3 half days. Part B is an oral defense of the student's answers to Part A within 2 weeks of completion of Part A. The exam must be completed by the conclusion of the summer semester of the second year.

**Part A. The questions.**

1. The Qualifying Exam Committee will prepare 3 questions per student. These will come from areas covered in the required coursework: Virology, Immunology, Medical Bacteriology, Molecular Biology/Eukaryotic Pathogens.
2. Over 3 days the student will be given one question each day and have 4 hours to respond to it. The student will have full access to books, journals and the internet. This portion of the exam is OPEN BOOK. However, students may not solicit help from elsewhere.

**PART A. Evaluation.**

1. Each response will be read by two committee members.
2. The qualifying committee member who wrote the question will read and critique the response. The critique should be written on a separate page.
3. The second committee member will act as a reader and will complete a separate shorter review.
4. Written critiques must be received no later than 1 week prior to oral examination.
5. No committee member will be responsible for the primary critique for more than one question per student.
6. A committee member will not be responsible for the critiques if they are the student's mentor.
7. The chair of the committee will be responsible for assigning primary and reader (unless he/she/they is the student's mentor, in which case another committee member will act as chair).

**PART B. Oral portion.**

1. This portion of the exam must be taken within 2 weeks of completion of Part A.
2. This portion of the exam will last no longer than 4 hours and will consist of the student's oral defense of their response and/or changes in their response based on critiques.
3. The mentor of the student will be present as an observer but cannot participate either verbally or otherwise.
4. The committee will ask questions in reference to the original question and the student will be expected to defend his/her original response – or defend changes in response based on the critique.

**PART B. Evaluation.**

1. The Qualifying Exam Committee members will evaluate the student's performance and determine if the student passed or failed.
  - a. The mentor does not generally participate in the final vote, but may clarify matters concerning the student.
  - b. In the unlikely event that the committee does not come to an agreement, the matter will be discussed with the Department Head.
  - c. The committee may ask the student to rewrite an answer to confirm that the student understands the nature of the critiques raised during the oral portion of the exam.
2. If the student fails:
  - a. they may be given the option to retake the exam. This may occur if the committee feels the student for some reason did not perform to his/her best ability or there were extenuating circumstances.
  - b. If the student is not given the option to retake the exam, they may be given the option to obtain an MS degree.

**APPENDIX 4: Preliminary Exam instructions**

## LOGISTICS

- The Preliminary Examination should be taken before the end of the third year of graduate studies. The focus of the examination is on a proposal prepared by the student and based on their dissertation project (see details of required format and grading information below).
- The student will arrange a time and date with the committee. A DOODLE poll is recommended and a reservation for at least three hours is suggested. Once the exam is scheduled, the student should reserve a conference room.
- Note also that the Preliminary Exam must be passed at least one academic year (i.e. 3 consecutive semesters) before graduation.
- The research proposal must be circulated to the Dissertation Committee at least two weeks prior to the examination date.
- The completed, typed REQUEST FOR PRELIMINARY EXAMINATION FORM must be sent to the Graduate School at least two weeks prior to the examination date.

## FORMAT

- **The proposal is to be submitted in NIH RO1 grant format containing the following elements: Specific Aims, Abstract, Research Plan (no longer than 12 pages), Vertebrate Animals (if necessary), Human Subjects (if necessary) and References.**
  - While the proposal should be prepared in R01 format, it should primarily reflect the student's dissertation project. It need not, therefore, be written as a formal funding application rigidly embodying a proposed five-year research plan.
  - Description of experiments and sub-aims already completed should be included, either as preliminary results within the description of an Aim in the Research Plan, or (if an Aim is essentially completed) as a progress report.
  - If the student already has a publication directly related to the proposed thesis work, this can be included as an addendum.
  - Alternative grant formats (e.g. an F30 or R21 application) should not be substituted for the above.
- The Specific Aims page may be viewed and edited by the mentor. The mentor may also view and provide feedback on an outline of the Research Plan. However, the mentor should not extensively edit drafts of the Research Plan.
- If the committee believes that the submitted proposal is incomplete or otherwise unsatisfactory, then the Preliminary Examination should be postponed. The committee chair will write a memo stating why the proposal is unsatisfactory and outline how it should be revised.
- Examples of RO1 format grants and suggestions for formulating can be found at the following website: <https://www.niaid.nih.gov/grants-contracts/sample-applications>

## EXAM

- The student should prepare a PowerPoint presentation that includes Specific Aims, the major points of the proposal, and key data.
- **While the submitted proposal will be discussed, the exam will be graded on the oral /PowerPoint presentation and related discussion.**
- The student may be questioned on any area of microbiology and related fields.
- The projected goals will normally be discussed.
- The results of the Preliminary Examination will be determined by a vote of the committee as follows:
  - Pass - student becomes a candidate for the Ph.D. degree.
  - Fail - two dissenting votes constitute a basis for failure. The committee will discuss the following options:
    - Failure – no re-examination. The student may have the option to complete a Master’s Degree.
    - Failure – re-examination. This should generally take place within six months of the first Preliminary Exam. The committee will decide on the format:
      - The student may be asked to rewrite the entire proposal, or particular sections, prior to the oral examination.
      - The student may be asked to write a progress report prior to an oral examination.
- A REPORT OF PRELIMINARY EXAMINATION FORM (typed) must be signed by all committee members and the Department Head and sent to the Dean of the School of Graduate Studies.
- The committee chair will write a summary of the preliminary examination and submit to [mipgrad@lsuhsc.edu](mailto:mipgrad@lsuhsc.edu)
- The student should register for course credit (Microbiology 299, 3 hours credit) for this proposal **in the semester after** passing the exam
  - The highest grade that the student can obtain for the course in the event of a re-write and/or re-examination is a ‘B’.



Print Form

# MIP ROTATION

Student Name  Rotation Dates

Mentor Name

**PART I- At BEGINNING of rotation, fill out and submit**  
Please fill out the form, save as new pdf, and then send as an attachment by email to [mipgrad@lsuhsc.edu](mailto:mipgrad@lsuhsc.edu)

Prior to the student beginning his/her rotation; please discuss the goals of the rotation and outline expectations below.

What are the main expectations for this student during this rotation?

What are the main techniques to be mastered (if applicable)?



Print Form

## MIP ROTATION

Student Name  Rotation Dates

Mentor Name

**PART II - Upon COMPLETION of rotation, fill out and submit**  
Please fill out the form, save as a new pdf and send as an attachment by email to [mipgrad@lsuhsc.edu](mailto:mipgrad@lsuhsc.edu)

**The mentor and student should discuss whether student met expectations and if there are areas that the student should focus on in future rotations.**

Did the student meet the expectations of the rotation?

Any significant strengths of student?

Any significant weaknesses of student?

Print Form



# MIP DISSERTATION COMMITTEE FORM

During the first semester of their second year, dissertation committees should be selected for MIP Ph.D. students. The student should choose a committee in consultation with mentor. This proposed committee is submitted to the Department Head for approval. Please fill out the form below, save as a new pdf and send as an attachment by email to [mipgrad@lsuhsc.edu](mailto:mipgrad@lsuhsc.edu). Any troubles with this form - please contact Joy Sturtevant.

The Committee will comprise at least 5 Graduate Faculty Members of LSUHSC including:  
 A. At least 3 LSUHSC-MIP Graduate Faculty (including the mentor), and  
 B. At least 1 non-MIP LSUHSC Graduate faculty (note A+ B must equal at least 5).  
 You are encouraged to add a faculty member external to LSUHSC.

| Member           | Name | Department* | UNIV/INSTITUTE**    |
|------------------|------|-------------|---------------------|
| Student          |      | MIP         | LSUHSC-Grad Studies |
| Mentor           |      | MIP         |                     |
| Graduate Faculty |      | MIP         |                     |
| Graduate Faculty |      | MIP         |                     |
| Graduate Faculty |      |             |                     |
| Graduate Faculty |      |             |                     |
| Graduate Faculty |      |             |                     |

\* Department = primary assignment in graduate school

\*\*UNIV/Institute= where faculty member is located e.g. LSUHSC, DS (Dental School) RIC (Children's), TULANE, etc.

Please check the appropriate boxes to indicate that both mentor and student have agreed upon this committee After form is complete - please submit to the department by clicking on "SUBMIT by EMAIL button above or to [mipgrad@lsuhsc.edu](mailto:mipgrad@lsuhsc.edu). If you have any questions about this form then please contact Joy Sturtevant.

MENTOR

Ph.D. Student

MIP DEPARTMENT CHAIR