



**DEPARTMENT OF MICROBIOLOGY
AND IMMUNOLOGY**

INDIANA UNIVERSITY
School of Medicine

Date: 7-28-2015

Re: Proposed curricular changes to the Master of Science program in the Department of Microbiology and Immunology

To: Randy R. Brutkiewicz, Ph.D., Associate Dean for Graduate Studies *RRB 7/31/15*

Dear Randy:

The Department of Microbiology and Immunology has proposed changes to its curriculum for the Master of Science (MS) degree program. With these changes we are seeking to increase flexibility within the curriculum to meet the various goals and needs of MS students, who pursue the MS degree for different reasons. We also wanted to streamline the required didactic course work so that students are likely to finish within 2 years.

Please review the enclosed proposal of changes to our MS curriculum. If you find this acceptable, please forward it to the Graduate Affairs Committee for their approval. If you have any questions or concerns, please let me know. Thank you very much!

Sincerely,

Margaret E. Bauer, Ph.D.
Associate Professor of Microbiology and Immunology
Graduate Advisor, Dept. of Microbiology and Immunology

RECEIVED
JUL 28 2015
DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY
INDIANA UNIVERSITY

Proposed Curricular Changes to MS Program Department of Microbiology and Immunology

July 2015

Rationale:

Students seek a Master of Science degree for different reasons, pertaining to their career goals beyond the MS program. As the Department does not provide financial support or tuition remission for MS students, we are cognizant of the desire of MS students to complete their degree within 2 years under most circumstances. To suit the various needs of these students, and to ensure timely completion, we propose revising the curriculum to reduce the required didactic course load from 14 cr to 10 cr, and add 4 cr of electives that can be completed with didactic courses, research credits, or a combination thereof. We also propose converting the teaching requirement to an option. This is a research-oriented MS degree; there is no non-thesis option.

Existing Curriculum

A minimum of 30 credits of coursework is required for the MS degree.

Required Didactic Course Work (14 cr total)

J802 Introduction to Research (two 8-week rotations, 2 cr total)

at least 5 cr from among the following courses:

- G715 Biomed I-Biochemical Basis of Biological Processes (3 cr)
- G716 Biomed II-Molecular Biology & Genetics (3 cr)
- G717 Biomed III-Cellular Basis of Systems Biology (3cr)
- G817 Molecular Basis of Cell Structure and Function (2cr)

at least 4 cr from among the following courses:

- G720 Stem Cell Biology (2 cr)
- G728 Fundamental Concepts of Infection and Pathogenesis (1 cr)
- G729 Introduction to Immunological Systems (1 cr)
- G852 Concepts of Cancer Biology: Signaling Gone Awry (2 cr)
- J807 Current Topics in Immunology (2 cr)
- J829 Current Topics in Molecular Genetics of Microorganisms (2 cr)
- J842 Neoplastic Determinants (2 cr)

G505 Responsible Conduct of Research (1 cr)

G855 Experimental Design and Biostatistics (1 cr)

G655 Research Communication Seminar (1 cr)

Proposed Curriculum

A minimum of 30 credits of coursework is required for the MS degree.

Required Didactic Course Work (10 cr total)

J810 Research in Microbiology (one 4-week rotation, 1 cr)

If the student does not join the laboratory in which the rotation was performed, the student must rotate in another lab to find a mentor for their thesis research. If no mentor is identified by the end of the first semester, the student will be dismissed from the program.

one course from among the following courses:

- G715 Biomed I-Biochemical Basis of Biological Processes (3 cr)
- G716 Biomed II-Molecular Biology & Genetics (3 cr)
- G717 Biomed III-Cellular Basis of Systems Biology (3cr)

at least 4 cr from among the following courses:

- G720 Stem Cell Biology (2 cr)
- G728 Fundamental Concepts of Infection and Pathogenesis (1 cr)
- G729 Introduction to Immunological Systems (1 cr)
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- J842 Neoplastic Determinants (2 cr)

G505 Responsible Conduct of Research (1 cr)

G855 Experimental Design and Biostatistics (1 cr)

Depending on the student's interests and career goals, additional graduate courses within or outside the Department may be taken.

Existing Curriculum (cont.)

Thesis Research

- at least 16 cr of J810 Research in Microbiology
- completion of a thesis project involving original research, and oral defense of the thesis to the committee

Proposed Curriculum (cont.)

Thesis Research (16 cr)

- at least 16 cr of J810 Research in Microbiology
- completion of a thesis project involving original research, and oral defense of the thesis to the committee

Electives (4 cr)

In addition to those credits listed above, 4 cr of additional graduate-level coursework or thesis research is required, to reach the 30-credit minimum requirement for the MS degree.

Additional Requirements

- Attendance at departmental seminars
- Attendance and, starting in the 2nd year, annual presentation of research at departmental Research in Progress (RIP) student seminar series
- Teach for one semester in MICR J210 Microbiology & Immunology

Although not required, participation in a journal club of interest is encouraged.

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MS students interested in teaching can request a nonpaid teaching assistant position in MICR J210 Microbiology & Immunology.

Summary of Proposed Changes

1. We propose converting 4 cr of didactic course requirements to elective credits, to increase flexibility in the program. The elective credits can be filled by didactic course work, thesis research credits, or a combination of didactic and research credits. To provide for the elective credits, we propose the following changes to the course requirements:
 - a. Reduce the rotation length from 8 weeks to 4 weeks, and reduce the required number of rotations from two to one. As a potential mentor is defined during the application process, this change will allow students to quickly complete their rotation and begin their thesis research during their first semester in the program. If needed, up to two additional 4-week rotations can be completed during the first semester to identify a mentor.
 - b. Reduce the Biochemistry course requirement from 5 cr to one 3-credit course.
 - c. Eliminate the requirement for G655 Research Communication Seminar, as similar skills are covered during the RIP student seminar series, and MS students generally have less need than PhD students to give research-oriented presentations. Individual students who wish to take this course may do so as an elective.
2. We propose eliminating the teaching requirement; it will now be an option for interested MS students.