Twin Cities Campus

Microbiology, Immunology, and Cancer Biology Minor

Medical School - Adm

Medical School

Link to a list of faculty for this program.

Contact Information:
Department of Microbiology and Immunology
689 23rd Avenue SE, Minneapolis, MN 55455
612-624-5947
Email: micab@umn.edu
Website: http://micab.umn.edu

- Program Type: Graduate minor related to major
- Requirements for this program are current for Spring 2022
- Length of program in credits (Masters): 8
- Length of program in credits (Doctorate): 12
- This program does not require summer semesters for timely completion.
- No

Along with the program-specific requirements listed below, please read the General Information section of the catalog website for requirements that apply to all major fields.

Students prepare for careers in biomedical research and teaching by completing broad training in molecular biology or biological sciences, and focused specialization in one of three concentrations (microbiology, immunology, or cancer biology). The program offers exceptional research opportunities for graduate training in autoimmunity, biotechnology, cancer biology and therapy, environmental microbiology, genetic engineering of microorganisms, lymphocyte activation and development, microbial pathogenesis, molecular genetics of disease, tumor immunology, vaccine development, and vascular biology and inflammation.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

Other requirements to be completed before admission:
Required courses include calculus, general chemistry, organic chemistry, and physics. A minimum of two upper-level biology courses, which may include biochemistry, genetics, cell biology, molecular biology, microbiology, or immunology, etc. are also required.

Special Application Requirements:
Students interested in the minor are strongly encouraged to confer with their major field advisor and director of graduate studies, and the MICaB director of graduate studies regarding feasibility and requirements.

International applicants must submit score(s) from one of the following tests:

- TOEFL
  - Internet Based - Total Score: 96

Key to test abbreviations(TOEFL).

For an online application or for more information about graduate education admissions, see the General Information section of the catalog website.

Program Requirements

Use of 4xxx courses towards program requirements is not permitted.

All courses must be taken A/F unless only offered S/N. A minimum grade of C is required for A/F coursework. The minimum cumulative GPA for the minor is 3.0.

Required Coursework (8 credits)

Masters and doctoral students must take 2 of the following courses, selected in consultation with the MICaB director of graduate studies, for a total of 8 credits:
MICA 8002 - Structure, Function, and Genetics of Bacteria and Viruses (4.0 cr)
MICA 8003 - Immunity and Immunopathology (4.0 cr)
MICA 8004 - Cellular and Cancer Biology (4.0 cr)

Program Sub-plans

Students are required to complete one of the following sub-plans.
Students may not complete the program with more than one sub-plan.

Masters

Master's Requirements

See Program Requirements, above.

Doctoral

Doctoral Requirements (4 credits)

Select at least 4 credits of MICaB coursework, in consultation with the MICaB director of graduate studies, to complete the 12-credit minimum.
MICA 8005 - Topics in Microbiology, Immunology, and Cancer Biology (1.0 - 4.0 cr)
MICA 8006 - Protein Sequence Analysis (3.0 cr)
MICA 8007 - Cell Biology and Biochemistry of the Extracellular Matrix (3.0 cr)
MICA 8009 - Biochemical Aspects of Normal and Abnormal Cell Growth and Cell Death (2.0 cr)
MICA 8010 - Microbial Pathogenesis (3.0 cr)
MICA 8011 - Current Topics in Immunology (3.0 cr)
MICA 8013 - Translational Cancer Research (2.0 cr)
MICA 8014 - Small RNA Biology (2.0 cr)
MICA 8320 - Readings in Neurobiology (1.0 - 4.0 cr)