

2026-2027 MCB Area of Interest Course Information

Microbiology, Infection, & Immunity

Please check the University of Washington Time Schedule for the most updated course information.

Area Directors

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FOUNDATIONAL COURSES

Note: This track is broadly divided into the related sub-tracks of immunology, virology, and bacteriology. The foundational courses include 2-3 courses focused on each sub-track: immunology, virology, and bacteriology. Interested students can focus on one sub-track or mix and match from these sub-tracks depending on their specific area of research. Area directors or more senior MCB students can discuss these sub-tracks with interested first-year students.

Track 1 - Immunology

Foundational Course One:

Course Number: IMMUN 441

Course Title: Introduction to Immunology

Instructor (s): Michael Gerner, Jakob von Moltke

Location: UW

Credits: 4.0

Quarter, Weeks, and Frequency course is offered: Autumn, weeks 1-10, every year. *Will be offered in Autumn 2026.*

Schedule for 2026-27: Mon, Wed, Fri. 9:30-10:20 a.m.

Attributes: Lecture based

Sub Area (if applicable): Immunology

Synopsis: General properties of immune responses; cells and tissues of immune system; lymphocyte activation and specificity; effector mechanisms; immunity to microbes; immunodeficiency and AIDS; autoimmune diseases; transplantation.

Note: This is an introductory course for students without a background in immunology. ***Graduate students must obtain approval from the MCB Co-Directors for this 400-level class to count toward their 18 graded credits.***

Prerequisite: BIOL 220

Foundational Course Two:

Updated October 2026

Course Number: IMMUN 532

Course Title: Intersection of Innate and Adaptive Immunity in Disease

Instructor (s): Elia Tait Wojno

Location: SLU

Credits: 4.0

Quarter, Weeks, and Frequency course is offered: Winter, weeks 1-10, every year. *Will be offered in Winter 2027.*

Schedule for 2026-27: Mon, Wed, Fri. 9:30-10:50 a.m.

Attributes:

Sub Area (if applicable):

Synopsis: Examines the molecular and cellular basis of immune function. Topics include: hematopoiesis, innate immunity, antigen receptor structure, lymphocyte development, antigen presentation, effector T-cell functions, and immune-mediated diseases.

Prerequisite: Coursework in molecular genetics; intro to Immunology course; graduate standing in immunology; other graduate students with permission of instructor.

Foundational Course Three:

Highly recommended by MCB students

Course Number: IMMUN 537

Course Title: Immunological Methods

Instructor (s): Mark Headley

Location (e.g., UW, FH, SLU): SLU

Credits: 1.5

Quarter, Weeks, and Frequency course is offered: Autumn, weeks 6-10, every year. *Will be offered in Autumn 2026.*

Schedule for 2026-27: Tues, Thurs. 11:00 a.m. - 12:20 p.m.

Attributes (e.g., graded, lecture-based): Lecture and literature review

Sub Area (if applicable):

Synopsis: Introduces whole animal, cellular, biochemical, and molecular techniques used in immunological research. Discusses strengths and limitations of each technique and emphasizes caveats in interpreting the resulting data.

Prerequisite: Intro to Immunology course; graduate standing in immunology; other graduate students with permission of instructor.

Track 2 - Virology

Foundational Course One:

Course Number: MICROM 450

Course Title: Molecular Biology of Viruses

Instructor (s): Michael Lagunoff, Patrick Mitchell

Location: UW

Credits: 4.0

Quarter, Weeks, and Frequency course is offered: Winter, weeks 1-10. *Will be offered in Winter 2027.*

Schedule for 2026-27: Tues, Thurs. 1:00-2:20 p.m.

Attributes: Lecture based

Sub Area (if applicable): Microbiology

Synopsis: Introduction to the molecular biology of viruses and virus-host relationships. Designed for advanced undergraduates in the biological sciences. Coverage focuses on human viruses, with an emphasis on the molecular mechanisms of viral replication.

Note: This is an introductory course for students without a background in virology.

Graduate students must obtain approval from the MCB Co-Directors for this 400-level class to count toward their 18 graded credits.

Prerequisite: BIOL 200

Foundational Course Two:

Course Number: MICROM 540

Course Title: Virology

Instructor (s): Tristan Jordan, Patrick Mitchell

Location: SLU

Credits: 3.0

Quarter, Weeks, and Frequency course is offered: Autumn, weeks 1-10, even years. *Will be offered in Autumn 2026.*

Schedule for 2026-27: Tues, Thurs. 1:30-3:00 p.m.

Attributes: Graded, lecture based, extensive discussion of primary literature; grant writing.

Sub Area (if applicable): Virology

Synopsis: The molecular biology, transmission, and pathogenesis of human viruses will be explored. In addition to general principles of virology, lectures and paper discussions will focus on specific human pathogens including HIV, herpesviruses, ebolaviruses, alphaviruses, and adenoviruses, among others.

Track 3 - Bacteriology

Foundational Course One:

Course Number: MICROM 412/512

Course Title: Prokaryotic Diversity

Instructor (s): Alex Meeske, Matthew Parsek

Location: UW & SLU

Credits: 4.0

Quarter, Weeks, and Frequency course is offered: Spring, weeks 1-10. *Will be offered in Spring 2027.*

Schedule for 2026-27: Mon, Wed, Fri. 1:30-2:20 p.m.

Attributes: Graded, lecture based, extensive discussion of primary literature.

Sub Area (if applicable): Bacteriology

Synopsis: MICROM 512 covers diverse aspects of metabolism, growth, behavior, and interspecies interactions that are specifically found in bacteria and archaea. The course integrates complex concepts from biochemistry, genetics, and ecology. There is a weekly discussion section covering primary research articles corresponding to the topics covered in lecture.

Foundational Course Two:

Course Number: MICROM 553

Course Title: Molecular Mechanisms of Bacterial Pathogenesis

Instructor (s): David Sherman, Evgeni Sokurenko

Location: SLU

Credits: 3.0

Quarter, Weeks, and Frequency course is offered: Autumn, weeks 1-10. Odd years. *Will be offered in Autumn 2027.*

Schedule for 2026-27: N/A

Attributes: Graded, lecture based, extensive discussion of primary literature.

Sub Area (if applicable): Bacteriology

Synopsis: The processes bacterial pathogens employ to shape interactions with their hosts will be explored in molecular detail through selected examples in the literature.

Prerequisite: One year of undergraduate cellular and molecular biology. An introductory course in microbiology is recommended.

ELECTIVE COURSES

Elective Course One:

Course Number: CONJ 539

Course Title: Modern Approaches to Vaccines

Instructor (s): Cindy Derdeyn, Deborah Fuller, Megan O'Connor.

Location: UW or SLU

Credits: 1.5

Quarter, Weeks, and Frequency course is offered: Spring, weeks 6-10, even years. *Will be offered in Spring 2028.*

Schedule for 2026-27: N/A

Attributes: Lecture and group discussion based, extensive use of primary literature

Sub Area (if applicable): Vaccines, virology, and immunology

Synopsis: Covers selected topics based on recent advances and publications in viral and bacterial vaccine research. Emphasizes understanding the latest advanced and issues in vaccine discovery and design, mechanisms of action, and special topics in viral vaccines.

Elective Course Two:

Course Number: EPI 527

Course Title: Vaccines

Instructor (s): Helen Chu

Location: UW

Credits: 3.0

Quarter, Weeks, and Frequency course is offered: Autumn, weeks 1-10, even years. *Will be offered in Autumn 2026.*

Schedule for 2026-27: Mon, Wed. 10:00-11:20 a.m.

Attributes: Lecture and group discussion based, extensive use of primary literature

Sub Area (if applicable): Vaccines

Synopsis: Overview of issues in vaccine development, clinical trials, implementation of vaccination programs, and the role of vaccines in the control of infectious diseases. Emphasizes current issues and real-world challenges in the vaccine field and features critical reading of the literature.

Instructions: Contact epcourse@uw.edu for add code.

Elective Course Three:

Course Number: GH 566 (offered jointly with PABIO 551)

Course Title: Biochemistry and Genetics of Pathogens and Their Hosts

Instructor (s): David Mukasa

Location: UW

Credits: 4.0

Quarter, Weeks, and Frequency course is offered: Winter, weeks 1-10, odd years. *Will be offered in Winter 2027.*

Schedule for 2026-27: TBD

Attributes: Lecture based, extensive use of primary literature

Sub Area (if applicable):

Synopsis: Provides a strong foundation in biochemistry, molecular biology, and genetics for students interested in disease. Principles illustrated through examples focusing on pathogens, and infectious and non-infectious disease.

Prerequisite: Undergraduate-level coursework in molecular biology or biochemistry, or permission of instructor.

Elective Course Four:

Course Number: IMMUN 538

Course Title: Immunological Based Diseases and Treatments

Instructor (s): Ram Savan, Estelle Bettelli

Location: SLU

Credits: 2.0

Quarter, Weeks, and Frequency course is offered: Spring. *Will be offered in Spring 2027.*

Schedule for 2026-27: Mon. 9:00-10:50 a.m.

Attributes: Lecture based, extensive use of primary literature

Sub Area (if applicable): Immunology

Synopsis: Addresses the mechanisms leading to the development of immunologically based diseases. In particular, covers immunological basis and treatment of infection, autoimmunity, and cancer.

Elective Course Five:

Course Number: PABIO 552

Course Title: Cell Biology of Human Pathogens and Disease

Instructor (s): David Mukasa

Location: UW

Credits: 4.0

Quarter, Weeks, and Frequency course is offered: Winter, weeks 1-10, even years. *Tentatively offered in Winter 2028.*

Schedule for 2026-27: N/A

Attributes: Lecture based, extensive use of primary literature

Sub Area (if applicable):

Synopsis: Provides a strong foundation in cell biology for students interested in infectious disease. Principles illustrated through examples focusing on pathogens.

Prerequisite: Undergraduate-level coursework in biology or molecular biology or permission of instructor.