IMMUNOLOGY (INTERDEPARTMENTAL) HONOURS (B.SC.) (75 CREDITS)

Offered by: Microbiology & Immunology (Faculty of Science)
Degree: Bachelor of Science
Program credit weight: 75

Program Description

The B.Sc.; Honours in Immunology (Interdepartmental) program involves the Departments of Biochemistry; Microbiology and Immunology; and Physiology, and incorporates elements from each of these disciplines. The program focuses on the critical understanding of the patho-physiology of many immune-mediated diseases.

The program consists of 48 required credits of basic science courses,covering cell and molecular biology; microbiology and immunology; biochemistry; and physiology. There are also 27 complementary credits which allow for specialization in immunology and related disciplines. To graduate from IHI, students must have a minimum CGPA of 3.30 and pass five immunology courses (MIMM 214 Introductory Immunology: Elements of Immunity., MIMM 314 Intermediate Immunology., PHGY 531 Topics in Applied Immunology., PHGY 419D1 Immunology Research Project. and PHGY 419D2 Immunology Research Project., PHGY 513 Translational Immunology., and one of BIOC 503 Biochemistry of Immune Diseases., MIMM 414 Advanced Immunology., MIMM 509 Inflammatory Processes., with a minimum grade of B.

Degree Requirements — B.Sc.

This program is offered as part of a Bachelor of Science (B.Sc.) degree.

To graduate, students must satisfy both their program requirements and their degree requirements.

- The program requirements (i.e., the specific courses that make up this program) are listed under the Course Tab (above).
- The degree requirements—including the mandatory Foundation program, appropriate degree structure, and any additional components—are outlined on the Degree Requirements page.

Students are responsible for ensuring that this program fits within the overall structure of their degree and that all degree requirements are met. Consult the Degree Planning Guide on the SOUSA website for additional guidance.

Note: For information about Fall 2025 and Winter 2026 course offerings, please check back on May 8, 2025. Until then, the "Terms offered" field will appear blank for most courses while the class schedule is being finalized.

Required Courses (48 credits)

U1

Expand allContract all

Course	Title	Credits
BIOC 212	Molecular Mechanisms of Cell Function.[1]	3
BIOL 200	Molecular Biology.	3
BIOL 201	Cell Biology and Metabolism.[1]	3
CHEM 212	Introductory Organic Chemistry 1.	4
CHEM 222	Introductory Organic Chemistry 2.	4
MIMM 211	Introductory Microbiology.[2]	3
MIMM 214	Introductory Immunology: Elements of Immunity.	3
PHGY 209	Mammalian Physiology 1.[2]	3

[1] Students select either BIOC 212 Molecular Mechanisms of Cell Function. or BIOL 201 Cell Biology and Metabolism..
[2] Students select either PHGY 209 Mammalian Physiology 1. or MIMM 211 Introductory Microbiology..

U2

Expand allContract all

Course	Title	Credits
ANAT 261	Introduction to Dynamic Histology.	4
BIOC 311	Metabolic Biochemistry.	3
BIOC 312	Biochemistry of Macromolecules.	3
MIMM 314	Intermediate Immunology.	3

U3

Expand allContract all

Course	Title	Credits
PHGY 419D1	Immunology Research Project.	4.5
PHGY 419D2	Immunology Research Project.	4.5
PHGY 513	Translational Immunology.	3
PHGY 531	Topics in Applied Immunology.	3

Complementary Courses (27 credits)

U1

3 credits selected from:

Expand allContract all

Course	Title	Credits
BIOL 373	Biometry.	3
MATH 203	Principles of Statistics 1.	3
PSYC 204	Introduction to Psychological Statistics.	3

3 credits selected from the following:

Expand allContract all

Course	Title	Credits
ANAT 214	Systemic Human Anatomy.	3
ANAT 262	Introductory Molecular and Cell Biology.	3
BIOL 202	Basic Genetics.	3
BIOL 205	Functional Biology of Plants and Animals.	3
BIOL 304	Evolution.	3

CHEM 203	Survey of Physical Chemistry.[1]	3
CHEM 204	Physical Chemistry/Biological Sciences 1.[1]	3
COMP 204	Computer Programming for Life Sciences.	3
COMP 250	Introduction to Computer Science.	3
MATH 204	Principles of Statistics 2.	3
MIMM 211	Introductory Microbiology.[2]	3
MIMM 212	Laboratory in Microbiology.	3
PHGY 209	Mammalian Physiology 1.[2]	3
PHGY 210	Mammalian Physiology 2.	3

[1] If chosen, students take either CHEM 203 Survey of Physical Chemistry. or CHEM 204 Physical Chemistry/Biological Sciences 1..

[2] If chosen, students take either PHGY 209 Mammalian Physiology 1. or MIMM 211 Introductory Microbiology..

U2

6 credits selected from:

Expand allContract all

Course	Title	Credits
BIOC 220	Laboratory Methods in Biochemistry and Molecular Biology 1.[1]	3
BIOC 320	Laboratory Methods in Biochemistry and Molecular Biology 2.[1]	3
BIOL 301	Cell and Molecular Laboratory.[1]	4
MIMM 384	Molecular Microbiology Laboratory.[1]	3
MIMM 385	Laboratory in Immunology.[1]	3
PHGY 212	Introductory Physiology Laboratory 1.[1]	1
PHGY 213	Introductory Physiology Laboratory 2.[1]	1

[1] Students may take
BIOC 220 Laboratory Methods in Biochemistry and Molecular Biology 1. and BIOC 320 Laboratory Methods in Biochemistry and Molecular Biology 2., or
MIMM 384 Molecular Microbiology Laboratory. and MIMM 385 Laboratory in Immunology., or
PHGY 212 Introductory Physiology Laboratory 1. and PHGY 213 Introductory Physiology Laboratory 2. and BIOL 301 Cell and Molecular Laboratory.

6 credits selected from:

Expand allContract all

Course	Title	Credits
ANAT 365	Cellular Trafficking.	3
BIOL 300	Molecular Biology of the Gene.	3
BIOL 309	Mathematical Models in Biology.[1]	3
BIOL 314	Molecular Biology of Cancer.	3
CHEM 302	Introductory Organic Chemistry 3.	3
MATH 222	Calculus 3.	3
MATH 315	Ordinary Differential Equations.[1]	3
MIMM 323	Microbial Physiology.	3
MIMM 324	Fundamental Virology.	3
PATH 300	Human Disease.	3
PHAR 300	Drug Action.	3
PHAR 301	Drugs and Disease.	3
PHAR 303	Principles of Toxicology.	3
PHGY 311	Channels, Synapses and Hormones.	3
PHGY 312	Respiratory, Renal, and Cardiovascular Physiology.	3
PHGY 313	Blood, Gastrointestinal, and Immune Systems Physiology.	3
PHGY 314	Integrative Neuroscience.	3

[1] If chosen, students take either BIOL 309 Mathematical Models in Biology. or MATH 315 Ordinary Differential Equations., but not both.

U3

3 credits selected from:

Expand allContract all

Course	Title	Credits
BIOC 503	Biochemistry of Immune Diseases.	3
MIMM 414	Advanced Immunology.	3
MIMM 509	Inflammatory Processes.	3

6 credits selected from:

Expand allContract all

Course	Title	Credits
ANAT 458	Membranes and Cellular Signaling.[1]	3
BIOC 404	Biophysical Methods in Biochemistry.	3
BIOC 450	Protein Structure and Function.	3
BIOC 454	Nucleic Acids.	3
BIOC 458	Membranes and Cellular Signaling.[1]	3
BIOC 503	Biochemistry of Immune Diseases.	3
BIOL 520	Gene Activity in Development.	3
EXMD 504	Biology of Cancer.	3
MIMM 413	Parasitology.	3
MIMM 414	Advanced Immunology.	3
MIMM 465	Bacterial Pathogenesis.	3
MIMM 466	Viral Pathogenesis.	3
MIMM 509	Inflammatory Processes.	3
NEUR 502	Basic and Clinical Aspects of Neuroimmunology.	3
PHAR 503	Drug Discovery and Development 1.	3
PHAR 504	Drug Discovery and Development 2.	3
PHGY 488	Stem Cell Biology.	3

[1] If chosen, students take either ANAT 458 Membranes and Cellular Signaling. or BIOC 458 Membranes and Cellular Signaling., but not both.