

# Integrative Biology (HBSc)

Department of Biological Sciences

Specialist

Major

Minor

The Integrative Biology program allows students to pursue a specialist program built on a broad, multi-perspective approach towards understanding biological complexity. This program provides students with a solid foundation in core biological areas (cellular and organismal biology, ecology and conservation, genes and development). A key advantage to this program is that it allows students to pursue specialization in more than one area at the same time. Many of the biggest issues facing today's planet require scientists that are capable of bringing different and complementary perspectives to look for solutions, and this program provides the coursework and training to help undergraduates build this broad knowledge base.

**Complementary Programs:** Not applicable.

## Make the most of your time at UTSC!

We want to help you maximize your university experience, so we've pulled together information and suggestions to get you started, although there are many more! As you review the chart on the inside pages, note that many of the suggestions need not be restricted to the year they are listed. In fact, activities such as joining a student club, engaging with faculty and seeking opportunities to gain experience should occur in each year of your study.

## Check out future career opportunities and skills acquired from completing this program:

### Competencies & Skills

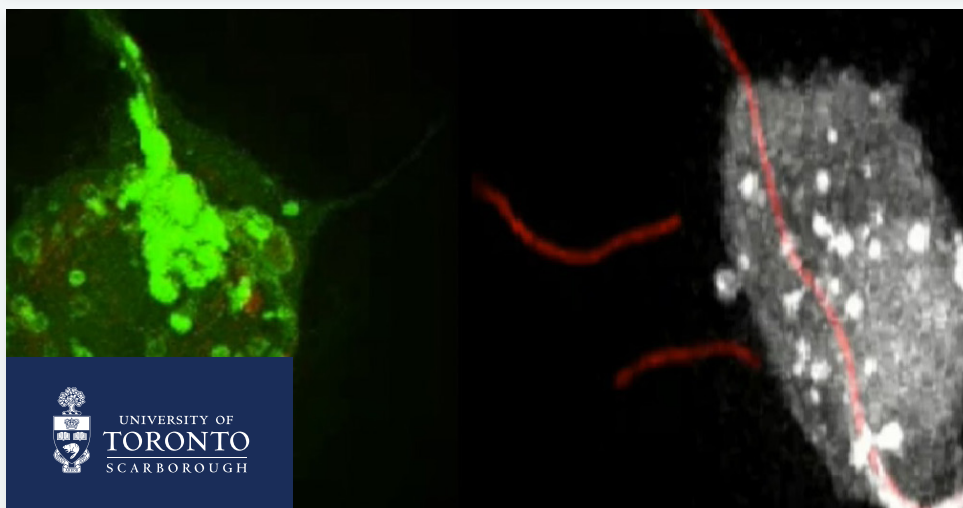
- Collect, analyze and interpret data
- Conduct and design experiments; use lab equipment
- Explore how organisms interact with the environment
- Chart the development of complex organisms
- Inspect specimens
- Research and analyze biological questions
- Use statistical tests to predict outcomes
- Write literature reviews and scientific reports

### Careers for Graduates

- Pharmaceuticals/Medical Sales
- Conservation Officer
- Lab Technician (Industry/Government)
- Assistant Biologist, Food Inspection
- Water Technologist in Conservation Authorities
- Policy Analyst
- Health Care careers
- Careers in Education/TRCA/Ministry of Natural Resources

### Further Education

- Graduate Studies
- Public Health: Epidemiology
- Environmental Science
- Sustainability
- Genetic Counselling
- Medicine
- Dentistry
- Physical Therapy
- Occupational Therapy
- Education
- Clinical Research
- Medical Laboratory Technology
- Environmental Technology



Connect with Alumni at events on **CLNx** and through **Partners in Leadership**, **10,000 Coffees**, **LinkedIn** and more!

For more information go to:  
[uoft.me/alumni-services](http://uoft.me/alumni-services)

**NEED HELP CHOOSING  
YOUR PROGRAM?**

See [uoft.me/choosing](http://uoft.me/choosing)

# Integrative Biology (HBS) Specialist Program Pathway

## HOW TO USE THIS PROGRAM PATHWAY

Read through each year; investigate what appeals to you here and in other Program Pathways that apply to you. Note that this Pathway is only a suggestion. **For the most up to date information, please check the UTSC Calendar.**

### YEAR 1 (0 - 3.5 Credits)

### YEAR 2 (4 - 8.5 Credits)

### YEAR 3 (9 - 13.5 Credits)

### YEAR 4 or FINAL YEAR (14 - 20 Credits)

#### CHOOSE YOUR COURSES WISELY

- 1.0 Biology credit: BIOA01H3, BIOA02H3.
- 1.0 Chemistry credit: CHMA10H3, CHMA11H3.
- 1.0 Math credit from: MATA29H3 and MATA35H3, OR MATA30H3 and MATA36H3.
- 0.5 Physics credit from: PHYA10H3, PHYA11H3.
- 0.5 credit from CSCA08H3, CSCA20H3, PSCB57H3.

- 3.0 credits of Biology Core courses: BIOB10H3, BIOB11H3, BIOB34H3, BIOB50H3, BIOB51H3, BIOB38H3.
- Complete BIOB90H3.
- 0.5 credit in a Biology Core Lab from: BIOB12H3, BIOB32H3, BIOB33H3, BIOB52H3.
- 0.5 credit from: STAB22H3, PSYB07H3.
- Use Degree Explorer to ensure you meet your degree and program requirements.

- 2.5 credits of Biology Foundation courses: BIOC15H3, BIOC17H3, BIOC37H3 or BIOC40H3, BIOC54H3, BIOC61H3.
- 1.0 credit of Advanced Courses in Cellular and Organismal Biology.
- Complete BIOC90H3.
- Use Degree Explorer to ensure you are on track with your degree.

- 1.0 credit of Advanced Courses in Ecology and Conservation.
- 1.0 credit of Advanced Courses in Genes and Development.
- Complete BIOC90H3 if you have not already.
- 1.0 Credit of D-Level Biology Courses.
- Register your "Intent to Graduate" on ACORN by the deadline.

#### DEVELOP YOUR ACADEMIC & RESEARCH SKILLS

- Attend BioSA's BioAID Review Sessions for guidance with writing lab reports.
- Contact the UTSC Library for in-depth research assistance; writing support is available at the CTL Writing Centre.
- Attend a BioSci info session on directed research.

- Seek support from professors and TAs during office hours.
- Check the Research Catalogue on CLNx for possible research opportunities.
- Volunteer in research labs, hospitals, doctors offices, community organizations, foundations.
- Consider doing a directed research course.

- Consider entering the following Research Awards Contests: UTSC Library Undergraduate Research Prize, Mitacs Globalink, NSERC USRA, TD Undergraduate Research Opportunity Fellowship.
- Continue to build your volunteer and work experience.
- Consider directed research courses: BIOB98, BIOC99 and take part in our departmental information session.

- Attend the weekly Biology Seminar Series (Fridays 12pm).
- Take upper-level directed research courses (BIOC99, BIOD98, BIOD95).
- Submit independent research work to UTSC's Journal of Natural Sciences.

#### APPLY THEORY TO PRACTICE

- Attend the Professor/Graduate Student Mix & Mingles to meet many of the professors & TAs you will encounter as you progress through your degree.
- Start building your Co-Curricular Record (CCR) and search for Experiential Learning or Work-Integrated Learning opportunities; check listings on CLNx.

- Take part in Conversation with Biologists, an event where students can interact with leading scientists and learn about their research and career trajectory.
- Consider Work Study jobs for possible research opportunities.

- Continue to build on your skills and knowledge through relevant events offered through your department, student groups, DSL and the AA&CC.
- Consider being a peer reviewer for the Journal of Natural Sciences.

- Participate in Ontario's Synapse Life Science Competition: [www.synapselifescience.com](http://www.synapselifescience.com)
- Consider being an editor for the Journal of Natural Sciences.

#### BECOME AN ENGAGED CITIZEN (LOCALLY & GLOBALLY)

- Join a professional student organization: Future Black Physicians, Health Occupation Students of American UTSC, or MEDLIFE.
- Build confidence and self-esteem through Department of Student Life's (DSL) LEAD program.
- Participate in MIMSA and BioSA events.
- Consider volunteering with Campus Farm and Rouge Park.

- Build your official CCR by getting involved with the Scarborough Pre-Med Society or the Medical Education Initiative Organization.
- Consider participating in science outreach: Let's Talk Science, Global Learning opportunities.
- Volunteer: David Suzuki Foundation, UTSC Green Roofs, Cornell Birds, TRCA.

- Attend Diversity in Medicine Seminar (for future medical students).
- Volunteer with DSL to be a First Year Peer Advisor. Take part in other DSL activities, such as Indigenous Experiential Journey trip, or intern with an NGO with the Queen Elizabeth II Diamond Jubilee Scholarship Program.
- Attend a Café Scientifique in your local community.

- Participate in the AA&CC's Partners in Leadership program to learn and network with an alumni mentor about transitioning to work or further education.
- Consider joining a relevant professional association (eg: ESA, ASCB, ASM, SICB) that take student members, and volunteer for their events.

#### PLAN FOR YOUR FUTURE CAREER

- Volunteer with organizations to explore your interest in industries related to your program of study; check listings on CLNx.
- Attend the UTSC Get Experience Fair in September or register with Scarborough Campus Student Union's (SCSU) Volunteer Network Program.

- Gain experience by applying for a summer, part-time or Work Study position via CLNx.
- If you are considering grad school, speak to professors and program advisors early so you know what to keep in mind.
- Explore careers through AA&CC's Job Shadowing and In The Field programs.
- Apply for DSL's All-In Leadership program.

- Speak with a staff member at the AA&CC to plan a potential career path.
- Check CLNx for networking events and employer information sessions.
- Attend the Graduate & Professional School Fair in September.
- Join a conference like TEDxUTSC or International Development Conference to develop professional skills.

- Attend the AA&CC's Get Hired job search conference in April/May.
- Attend the Jobs for Grads orientation for a job search "crash course"; find job opportunities on CLNx.
- If you are considering grad school, discuss your plans with staff at the AA&CC and your professors.
- Get your Personal Statement reviewed in the AA&CC.

# Integrative Biology (HBSc)

Department of Biological Sciences

## SERVICES AT UTSC THAT SUPPORT YOU:

To learn about resources and departments that can support you, download the UTSC Student Experience app or visit [uoft.me/StARTNow](http://uoft.me/StARTNow)

### Diversity & Inclusion

The University of Toronto Scarborough commits to intentionally foster a welcoming and supportive environment for students, faculty, and staff where diversity is valued, and every member of the community feels a sense of belonging on campus.

[utsc.utoronto.ca/edo/](http://utsc.utoronto.ca/edo/)

### Academic Integrity

The university community supports an environment of academic integrity; these are values that include honesty, trust, fairness, respect and responsibility. Learn about the university's academic rules and how to avoid accidental plagiarism by attending an Academic Integrity Matters (AIM) workshop.

[academicintegrity.utoronto.ca/](http://academicintegrity.utoronto.ca/)

### Healthy Campus

UTSC provides supportive environments, resources and services to empower students to maintain their overall physical and mental health and foster their academic success.

[uoft.me/healthycampus/](http://uoft.me/healthycampus/)

### Co-Curricular Record

The co-curricular record is an official institutional document that recognizes your involvement outside the classroom as a significant part of your U of T experience.

[clnx.utoronto.ca/ccr](http://clnx.utoronto.ca/ccr)

## FUTURE STUDENTS

For admission requirements to UTSC, check out the U of T Scarborough Viewbook or contact:

### Admissions & Student Recruitment

University of Toronto Scarborough  
Room HL104, Main Floor, Highland Hall  
416-287-7529

[admissions@utsc.utoronto.ca](mailto:admissions@utsc.utoronto.ca)

## CURRENT STUDENTS

### Departmental Contact

Jennifer Campbell,  
[jac.campbell@utoronto.ca](mailto:jac.campbell@utoronto.ca),  
416-287-7404, SW421D

### Integrative Biology Librarian

Sarah Guay,  
[sarah.guay@utoronto.ca](mailto:sarah.guay@utoronto.ca), 416-287-7497

### Academic Advising & Career Centre

Room AC213 | 416-287-7561

### Department of Student Life

Room SL157 | 416-208-4760

**BioSA - Biology Students Association at UTSC**, [thebiosa.org](http://thebiosa.org)

## DID YOU KNOW...

Students will be well trained to take positions in government agencies, consulting firms or NGO's.



## Glossary of acronyms:

AA&CC - Academic Advising & Career Centre  
ASCB - American Society of Cell Biology  
ASM - American Society of Microbiology  
BioSA - Biology Students Association at UTSC  
DSL - Department of Student Life  
ESA - The Ecological Society of America  
ISC - International Student Centre  
MIMSA - Molecular Biology & Immunology Students Association  
SICB - Society for Integrative and Comparative Biology  
TRCA - Toronto Regional Conservation Authority