

Combined Honours in Biochemistry and Forensic Science

Bachelor of Science Full-time [School of Computing and Academic Studies](#)

Overview

The full-time, 4-year, Biochemistry and Forensic Science Combined Honours Bachelor of Science program unites the strengths of the University of British Columbia (UBC) and BCIT to provide you with a stellar interdisciplinary educational experience, preparing you to become leaders in the fields of biochemistry or forensic science.

Delivery: in person. [See details](#).

With a primary focus on hands-on work in a laboratory setting, you'll hone important critical thinking and analytical skills. You'll conduct academic and applied research and forensic testing, and learn to communicate their results effectively.

About the program

- 1 intake: [September \[1\]](#)
- Year 1 at UBC, taking first-year science courses
- Years 2 to 4 at both UBC and BCIT
- Year 4 conduct a Biochemistry Honours Thesis or take an Advanced Biochemical Techniques course
- Co-op placement is optional and can help [expand your learning \[2\]](#) with practical work experience

See the [Program Details \[3\]](#) to learn more about what you can expect from this Combined Honours program, and how you can prepare for a career in the fields of biochemistry or forensic science.

Who should complete the Biochemistry and Forensic Science Bachelor of Science?

This program might be for you if you:

- Want a truly interdisciplinary program involving two specializations from two exceptional institutions
- Enjoy various education approaches, including case-based examples, group and [lab work \[4\]](#), and problem-based learning focusing on real-life challenges
- Are looking to become job-ready for the expanding global science and forensic science industries
- Want an industry-recognized, transferable credential to possibly further study at the graduate level

If any of these sound like you, please check the [Entrance Requirements \[5\]](#) to ensure you can apply and start your new Biochemistry or Forensic Science career!

What biochemistry or Forensic Science grads can do

By earning your joint BCIT/UBC Degree, you'll have the advantage of a solid science foundation and advanced training in forensic science, [biochemistry \[6\]](#) and molecular biology that can lead to multiple career paths in various levels of government or within private organizations.

And you also have the option to continue on to graduate-level education in biochemistry, molecular biology, forensic science, or any other life science.

You can also apply to various professional schools: medicine (including forensic pathology), law, dentistry (including forensic odontology), pharmacy, medical laboratory sciences, public health, medical administration, journalism, or an MBA program.

Learn more about job positions and future opportunities on the [Graduating and Jobs page \[7\]](#).

Entrance Requirements

Application processing

Applications are accepted and processed by UBC. For transcript and academic assessment information, contact [UBC Admissions \[8\]](#).

Application deadlines

Please refer to [UBC's webpage \[9\]](#) for application dates and deadlines.

See [Apply to this Program \[10\]](#) for application instructions.

Selection Process

The selection process is competitive. Candidates will be ranked by considering academic achievement. All qualified applicants may not be accepted. Admissions decisions are announced during the first two weeks of July.

Entrance requirements

To be eligible to apply to the Biochemistry and Forensic Science specialization, applications need to meet the [requirements for an honours specialization \[11\]](#).

Option 1: A minimum of 27.0 credits of [first-year UBC courses \[12\]](#) or equivalent with a minimum 70 percent GPA:

- 8.0 credits of UBC Chemistry:
 - CHEM 121 (or 111) and
 - CHEM 123
- 3.0 credits [UBC Communications Requirement \[13\]](#). Can include:
 - ENGL 112 (recommended)
 - SCIE 113 (recommended)
- 3.0 credits of UBC Biology:
 - BIOL 112

(**Note:** BIOL 121 will be accepted for Fall 2024 admission.)
- 3.0 credits of UBC Differential Calculus
- 10.0 additional UBC credits: These can be Year 1 courses* or other UBC courses.
- [Criminal Record Check \[PDF\] \[14\]](#): Bring this letter to the police department.

*3.0 credits of 100-level Physics (beyond PHYS 100), 3.0 credits of 100-level UBC English, 3 credits of DSCI 100 or CPSC 103, and 8.0 elective credits are required to graduate from this degree but are not admission requirements. Refer to Year 1 of the [program matrix \[15\]](#).

-OR-

Option 2: Transfer credit from another university that includes:

- Two terms of first-year university courses (100 or 1000 level) in each of the following subjects:
 - Chemistry (with lab)
- One term of first year university courses (100 or 1000 level) in each of the following subjects:
 - Biology
 - English
 - Mathematics (differential calculus)
- Sufficient electives for an equivalent of 27.0 UBC credits.
- [Criminal Record Check \[PDF\]](#) [16]: Bring this letter to the police department.

*3.0 credits of 100-level Physics (beyond PHYS 100), 3.0 credits of 100-level UBC English, 3 credits of DSCI 100 or CPSC 103, and 8.0 elective credits are required to graduate from this degree. These courses can be transferred from another university or taken at UBC.

Note: Science credits at UBC are weighted differently than credits at some other colleges and universities because labs and extra work are credited separately. Where possible, applicants from colleges or other universities should take the first-year equivalents of the listed UBC courses.

Apply to program

Already a UBC Science student?

[Apply online](#) [17] in June (check UBC for deadline) if you are:

- A first year UBC science student, eligible to go into second year, GPA >70%

Not yet a UBC Science Student?

Apply through UBC Admissions by if you are:

- a UBC student **not** in the Faculty of Science, GPA >70%
- a non-UBC student, GPA >70%

To apply, submit an [Application for Admission](#) [18] or [Application for Readmission/Change of Faculty](#) [19] form to UBC Admissions by [UBC's deadline](#) [20].

Then, if you are admitted to second year, [apply online](#) [21] in June (check UBC for deadline).

Criminal record check

Once you have been accepted to the program by UBC, you will need to obtain a criminal record check as part of your entrance requirements. Contact [Jason Moore](#) at BCIT for further information.

Scheduled Intakes

September each year.

Costs & Supplies

Tuition fees

Tuition is paid to both institutions based on the location of the courses taken each term.

- [BCIT part-time course fees \[22\]](#)
- [UBC tuition and fees \[23\]](#)

Financial assistance

Students can apply for student loans through UBC. See UBC's [Student Loan \[24\]](#) and [Bursary \[25\]](#) pages for more information.

For BCIT student awards, please visit BCIT's [Awards, Scholarships and Bursaries \[26\]](#) page.

Courses

Class hours

BCIT in-class courses will be scheduled as three-hour evening sessions, one day per week. The schedule for BCIT blended (online and in-class) courses will vary depending on room availability and instructors' schedules.

Where possible, BCIT and UBC have scheduled classes to provide time for commuting from UBC to BCIT.

Program matrix

Year 1 (34.0 credits)		
Complete 34.0 credits at UBC: <ul style="list-style-type: none"> • BIOL 112 - Biology of the Cell (Note: BIOL 121 - Genetics, Evolution and Ecology is accepted as an entrance requirement for Fall 2024.) • CHEM 121 or CHEM 111 - Principles of Chemistry • CHEM 123 - Principles of Chemistry 2 • MATH 100 or 102 or 104 - Differential Calculus • DSCI 100 - Introduction to Data Science or CPSC 103 - Introduction to Systematic Program Design • 3.0 credits of 100-level Physics (beyond PHYS 100) • 6.0 credits of 100-level English. This can include: <ul style="list-style-type: none"> ◦ ENGL 112 - Strategies for University Writing (recommended) ◦ SCIE 113 - First-Year Seminar in Science • 8.0 credits of electives*** 		
Year 2 (33.0 credits)		Credits
Complete 9.0 credits at BCIT:		
COMM 7200	Report Writing and Workplace Communication for Forensic Investigation	3.0

FSCT 7320	Introduction to Forensic Science	3.0
LIBS 7002	Applied Ethics	3.0
Complete 24.0 credits at UBC:		
<ul style="list-style-type: none"> • BIOC 203 - Fundamentals of Biochemistry • BIOL 200 - Fundamentals of Cell Biology • BIOL 234 - Fundamentals of Genetics • CHEM 203 - Introduction to Organic Chemistry • CHEM 211 - Introduction to Chemical Analysis • CHEM 213 - Organic Chemistry • CHEM 245 - Intermediate Organic Chemistry Lab • STAT 201 - Statistical Inference for Data Science or CPSC 203 - Programming, Problem Solving, and Algorithms 		
Year 3 (33.0 credits)		Credits
Complete 18.0 credits at BCIT:		
FSCT 7910	Research Methodology and Measurement Models	3.0
FSCT 8150	Forensic Biology: DNA Typing Theory	3.0
FSCT 8155	Forensic Biology: Evidence Recovery	3.0
FSCT 8370	Quality Assurance for Forensic Science	3.0
FSCT 8371	Business Management for Forensic Science	3.0
and		
FSCT 8230	The Medicolegal Aspects of Alcohol	3.0
or		
FSCT 8240	Forensic Toxicology	3.0
or		
FSCT 8320	The Science of Fingerprints - Theory	3.0

Complete 15.0 credits at UBC:

- BIOC 301 - Biochemistry Laboratory
- BIOC 303 - Molecular Biochemistry
- BIOL 335 - Molecular Genetics
- 3.0 credits of electives***

Year 4 (32.0 credits)**Credits****Complete 11.0 credits at BCIT:**

FSCT 7009	Law for Forensic Science	3.0
FSCT 7010	The Expert Witness: Prepared for Court	2.0
FSCT 8156	Instrumental Analysis for Forensic Chemistry	3.0
FSCT 8160	Forensic Biology: DNA Typing Applications	3.0

Complete 21.0 credits at UBC:

- BIOC 402 - Proteins: Structure and Function
- BIOC 410 - Nucleic Acid: Structure and Function
- 3.0 credits of electives***

and

- **Option 1:**
 - BIOC 449 - Honours Thesis **and**
 - 3.0 credits of advanced biochemistry electives*

or

- **Option 2:**
 - BIOC 420 - Advanced Biochemical Techniques **and**
 - 6.0 credits of advanced biochemistry electives*

and

- **3.0 credits of FSCT Upper Year Elective****
(Choose one of BIOC 306, BIOC 403, BIOC 430, BIOC 440, BIOC 450, BIOC 460, BIOC 470, BIOL 301, BIOL 336, CPSC 330, MEDG 421, MICB 405, PCTH 325.)

***Advanced Biochemistry Electives:**

- BIOC 403 - Enzymology
- BIOC 430 - Advanced Topics in Protein Biochemistry
- BIOC 440 - Concepts in Molecular Biology
- BIOC 450 - Membrane Biochemistry
- BIOC 460 - Advanced Techniques in Biochemistry
- BIOC 470 - Biochemistry and Society: Current Issues

****Other FSCT Upper Year Electives:**

- BIOC 306 - Quantitative Methods in Biochemistry
- BIOL 301 - Biomathematics
- BIOL 336 - Fundamentals of Evolutionary Biology
- CPSC 330 - Applied Machine Learning
- MEDG 421 - Genetics and Cell Biology of Cancer
- MICB 405 - Bioinformatics
- PCTH 325 - Rational Basis of Drug Therapy
- Advanced Biochemistry Electives listed above.

Note: Advanced Biochemistry Electives cannot be double counted with above.

***Refer to UBC Academic calendar for the [elective course requirements](#). [42]

Total Credits:

132.0

View the [UBC Calendar](#) [43] for UBC course information.

Transfer credit

Do you have credits from another BC/Yukon post-secondary school? Do you want to know if they transfer to courses here at BCIT? Check out BCIT's [Transfer Equivalency Database](#) [44] to find out.

Program Details

This joint Bachelor of Science combines the strengths of UBC and BCIT to provide students with an exceptional interdisciplinary educational experience in biochemistry and forensic science. The students' educational experience will be enriched by engaging courses at both UBC and BCIT, an optional co-op experience, and the valuable experience gained during the Honours Thesis research course. The program aims to ensure that students develop lifelong learning skills to keep up-to-date with changing technologies and remain at the forefront of science. Graduates are equipped with job-ready skills to become the future leaders of the forensic science and biochemistry industries.

The goal of the program is to provide students with the knowledge and skills to:

- Demonstrate a comprehensive understanding of biochemistry, molecular biology, chemistry, and forensic science, including the main principles, techniques, and latest developments.
- Perform with confidence a variety of laboratory procedures relevant to biochemistry, molecular biology, chemistry, and forensic science including the ability to operate analytical instruments.
- Apply and maintain quality assurance processes and safety standards in a scientific laboratory.
- Design and conduct research independently and in a team environment.
- Communicate complex scientific information and evidentiary findings in oral and written formats for academic or legal purposes.
- Apply critical thinking, analytical, and problem-solving skills to the disciplines of biochemistry, molecular biology, chemistry, and forensic science.
- Demonstrate the communication and interpersonal skills needed to work effectively in a team environment.
- Develop lifelong learning skills to keep up-to-date with changing technologies and remain at the forefront of science.
- Exemplify the highest ethical standards and professional principles.

Program length

Four years, full-time

Grading

This is an honours program. Students must maintain a minimum grade percent average of 70% over the Fall and Winter terms combined, complete a minimum of 27.0 credits over the Fall and Winter terms, and have no course failures.

Program delivery

In person: This program is delivered on campus.

Most courses in this program are delivered face-to-face, and some are delivered entirely online or in a blended format, with in-class and online components.

Many of BCIT and UBC's in-person courses are laboratory-based or have a laboratory component. Instruction includes group and individual projects, group activities, case studies, class presentations, guest lectures by active forensic scientists, laboratory sessions, and field research.

Program location

Burnaby Campus [45]

3700 Willingdon Avenue
Burnaby, BC

University of British Columbia [46]

2329 West Mall
Vancouver, BC

Program structure

Year	BCIT Credits	UBC Credits	Total Credits
First year (Pre-entry)		34.0 (27.0 minimum)	34.0
Second year	9.0	24.0	33.0
Third year	18.0	15.0	33.0
Fourth year*	11.0	21.0	32.0

*Optional co-op work terms start in the summer of third year and would move the fourth year to a fifth year.

Co-operative education

Students will have the opportunity to obtain work experience through the UBC Science Co-op office [47]. Co-op education is an optional part of the program. Students that enroll in co-op can complete four work terms of four months each (sixteen total months).

Graduating & Jobs

Job opportunities

Graduates of this program will have the advantage of a solid science foundation and advanced training in forensic science, forensic biology/DNA, biochemistry and molecular biology that will lead to multiple career paths:

- Government (federal, provincial, municipal) – graduates could work as civilians in government laboratories, in such positions as a forensic scientist, analyst, or technologist in the areas of forensic biology/DNA, evidence recovery,

quality assurance, forensic chemistry, and toxicology, among others. Graduates could also work in other areas of life science, as a police officer, coroner, or crime scene investigator.

- Private laboratory – graduates could work in a private forensic laboratory either in Canada or internationally, as scientists or quality assurance personnel within a testing or calibration laboratory, or in other areas pertaining to the life sciences such as biotechnology or pharmaceutical companies.
- Biochemistry and Molecular Biology related career paths. For more information see [UBC's Biochemistry department \[48\]](#) website for further details.

Keep learning

- Graduates of this program can continue on to graduate-level education in biochemistry, molecular biology, forensic science, or any other life science. Graduates can also apply to various professional schools: medicine (including forensic pathology), law, dentistry (including forensic odontology), pharmacy, medical laboratory sciences, public health, medical administration, journalism, or an MBA program.

Contact Us

Jason Moore, Program Coordinator

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Programs and courses are subject to change without notice.

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- [1] <https://you.ubc.ca/applying-ubc/dates-deadlines/>
- [2] <https://commons.bcit.ca/news/2022/06/from-dna-sequencing-at-childrens-hospital-to-leading-edge-biotech-forensic-student-shares-co-op-experiences/>
- [3] <https://www.bcit.ca/programs/combined-honours-in-biochemistry-and-forensic-science-bachelor-of-science-full-time-9940bsc/#details>
- [4] <https://commons.bcit.ca/news/2021/07/finding-your-fit-in-the-biochemistry-and-forensic-science-lab/>
- [5] <https://www.bcit.ca/programs/combined-honours-in-biochemistry-and-forensic-science-bachelor-of-science-full-time-9940bsc/#entry>
- [6] <https://biochem.ubc.ca/undergraduate/prospective-students/what-is-biochemistry/>
- [7] <https://www.bcit.ca/programs/combined-honours-in-biochemistry-and-forensic-science-bachelor-of-science-full-time-9940bsc/#graduating>
- [8] <https://students.ubc.ca/about-student-services/enrolment-services-advisors>
- [9] <https://you.ubc.ca/applying-ubc/dates-deadlines/>
- [10] <https://www.bcit.ca/programs/combined-honours-in-biochemistry-and-forensic-science-bachelor-of-science-full-time-9940bsc/#apply>
- [11] <https://vancouver.calendar.ubc.ca/faculties-colleges-and-schools/faculty-science/bachelor-science/introduction-degree-options#17204>
- [12] <https://vancouver.calendar.ubc.ca/faculties-colleges-and-schools/faculty-science/bachelor-science/forensic-science>
- [13] <https://vancouver.calendar.ubc.ca/faculties-colleges-and-schools/faculty-science/bachelor-science/communication-requirement#18434>
- [14] https://www.bcit.ca/files/cas/forensics/pdf/fsct_crc_letter_2019.pdf
- [15] <https://www.bcit.ca/programs/combined-honours-in-biochemistry-and-forensic-science-bachelor-of-science-full-time-9940bsc/#courses>
- [16] https://www.bcit.ca/files/cas/forensics/pdf/fsct_crc_letter_2019.pdf
- [17] <https://science.ubc.ca/students/specialization-introduction>
- [18] <https://vancouver.calendar.ubc.ca/faculties-colleges-and-schools/faculty-science/bachelor-science/admission-and-transfer>

- [19] <https://vancouver.calendar.ubc.ca/faculties-colleges-and-schools/faculty-science/bachelor-science/admission-and-transfer>
- [20] <https://you.ubc.ca/applying-ubc/dates-deadlines/>
- [21] <https://science.ubc.ca/students/specialization-introduction>
- [22] <https://www.bcit.ca/admission/tuition-fees/flexible-learning/>
- [23] <https://students.ubc.ca/enrolment/finances/tuition-fees>
- [24] <https://students.ubc.ca/enrolment/finances/student-loans>
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- [26] <https://www.bcit.ca/financial-aid/awards-scholarships-bursaries/>
- [27] <https://www.bcit.ca/outlines/comm7200/>
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- [42] <https://vancouver.calendar.ubc.ca/faculties-colleges-and-schools/faculty-science/bachelor-science>
- [43] <https://vancouver.calendar.ubc.ca/faculties-colleges-and-schools/faculty-science/bachelor-science/forensic-science>
- [44] <https://www.bcit.ca/admission/entrance-requirements/transfer-credit/>
- [45] <https://www.bcit.ca/about/visit/campuses-directions/burnaby/>
- [46] <https://www.ubc.ca/>
- [47] <https://sciencecoop.ubc.ca/>
- [48] <https://biochem.ubc.ca/undergraduate/prospective-students/career-opportunities-in-biochemistry/>
- [49] <https://www.bcit.ca/international-students/>
- [50] <https://www.bcit.ca/financial-aid/>
- [51] <https://secure.bcit.ca/sis/apply/>