Chemical and Environmental Technology (Analytical Science Option)

Diploma Full-time School of Energy

Overview

The **Analytical Science option** will be of interest to those students who would enjoy an increased emphasis on instrumental laboratory analysis, organic chemistry, environmental regulations, and science. Graduates are versatile and can pursue a variety of related careers as well as degree studies.

Delivery: in person. See details.

About the program

The Chemical and Environmental Technology diploma program offers the student a broad background in technology and skills that can be applied to many industries. Near the end of their first year in the program, students will choose one of two options: Analytical Science or Process Engineering. These options are not exclusive — all students will have enough exposure to both topic areas to qualify for a full spectrum of varied employment opportunities. Choosing an option allows students to pick an area of interest for increased emphasis while still keeping their future options open.

Core courses

The first-year curriculum is common to both options and emphasizes environmental science, bioprocesses, materials technology, laboratory techniques and safety along with math and science basics. The student is also introduced to environmental science, materials technology, and a wide range of industrial chemical processes. The core second-year subjects for both options include several courses in environmental sampling and analysis, chemical engineering technology, instrumental analysis, physical chemistry, and statistics that will prepare students for employment in a broad range of industries and technical occupations. Students will participate in an industry-sponsored project (practicum or directed studies) in the second year of the program. This may involve work experience activities at the industry sponsor's regular place of business.

Analytical Science option

The Analytical Science option has an emphasis on instrumental laboratory analysis, organic chemistry, environmental regulations, and science. The strong core courses will ensure that graduates have sufficient knowledge to compete for jobs in process areas too, if that later becomes their choice. It is anticipated that graduates who choose to continue into degree studies would be most likely to choose from BTech or BSc degrees.

Who it's for

For people who like science, care about progress with sustainability, and enjoy investigating problems, this newly-revised program can provide the skills to make a positive difference in an interesting career. Chemical and Environmental Technology is a rewarding two-year diploma program where students learn the latest chemical analysis techniques along with environmental science, process engineering and materials technology from experts in the field. This career can be pursued in any setting — laboratory, consulting, industrial, or research. The program's combination of science theory with

hands-on practice using sophisticated instruments provides a real edge in the job market. Graduates who want to continue into a degree may bridge into a BCIT BTech program, or transfer to a university for a science or engineering degree.

What grads can do

All Chemical and Environmental Technology graduates will be versatile and be awarded the same Diploma, regardless of their assigned options.

Entrance Requirements

Find out more about getting started in the program!

If the Chemical and Environmental program interests you, review the entrance requirements. If you have questions regarding the entrance requirements and equivalents, please contact Program Advising [1] .

If you qualify, you may want to attend an information session [2] or spend a day [3] exploring the program. You'll meet students and instructors, and get a hands-on feel for what the program is about.

Application processing

Open to applications beginning October 1st (or next business day).

Entrance requirements

Applicants must meet all entrance requirements and will be accepted on a first-qualified basis as long as space remains.

- **English language proficiency:** Category 2 [4] – English Studies 12 (67%) or equivalent
- **Math: one** of the following:
  - Pre-Calculus 12 (73%) or
  - Other acceptable BC and Yukon courses [5]
- **Chemistry** 11 (73%)

Read more about how to meet BCIT's entrance requirements [6]

International applicants

This program is available to international applicants. A valid study permit [7] is required prior to starting the program.

Students enrolled in this program must complete the mandatory work component to qualify for graduation. A co-op work permit is required prior to starting the work component.

Apply to program

To submit your application:

- Include proof of meeting all entrance requirements.
- Convert all transcripts and supporting documents to PDF files [8] .
- Have a credit card ready to pay the application fee.

Learn more about how to apply [10]

Scheduled Intakes

September each year.

Technology entry

The Technology Entry (TE) [11] program is a full-time, day school program which provides academic upgrading to students wishing to enroll in Computing, Engineering, Electronic, and Health Sciences programs at BCIT.

The TE program provides courses in chemistry, communication, mathematics, and physics that meet program prerequisites for selected programs at BCIT. The TE program also includes an introductory course in computer applications and a learning skills course. The program is supportive to those who require English-language training.

myCommunication

Within two business days of submitting your completed application, BCIT will send a message to your personal and myBCIT email addresses. All correspondence regarding your application will be posted to your online myCommunication [12] account at my.bcit.ca [13] . We will send you an email when a new message is posted. It is important to watch for these emails or regularly check your account online.

You can expect to receive communication concerning the status of your application within four weeks.

Advanced Placement

Conditions

You may be eligible to apply to an advanced level of the program through **re-admission**. Please note that applications are considered based on:

- **Complete applications**: you must show proof that you have completed (or are registered in) all requirements to be considered.
- **Competitive entry**: if the number of applicants exceeds available seats, BCIT will accept those deemed to have the best opportunity for success.
- **Seat availability**: confirmation may not be available until approximately one week before the term begins.

Re-admission

You can apply for re-admission if you:

- were previously admitted to this program and completed part of it at BCIT and
- want to re-enter the program at an advanced level.

Submit the Technology Re-admission Form [PDF] [14] with your application.

Applications are accepted throughout the year.

Ready to submit your application? Apply now [15] .

Questions? Review the Admissions FAQ [16] or contact Program Advising [17] .

Costs & Supplies

Tuition fees

Use our tuition estimator [18] to find tuition and fees for this program.

For more information on full-time tuition and fees, visit:

- Full-Time Studies Tuition & Fees [19]
- International Tuition & Fees [20]

Books & supplies

Level 1:	$1100
Level 2:	$300
Level 3:	$450
Level 4:	$300

(general estimated cost, subject to change)

Financial assistance

Financial assistance may be available for this program. For more information, please contact Student Financial Aid and Awards [21] .

Courses

Program matrix

Level 1 (15 weeks) - Common Core		**Credits**
Levels 1 and 2 are common to both the Analytical Science and the Process Engineering options.		
CENV 1101	**Safety and Technology Workshop**	4.0
CENV 1119	**Environmental Science**	4.0
CHEM 1121	**General Chemistry for Chemical and Environmental Technology**	6.0
COMM 1135	**Technical Communication 1**	3.0
MATH 1412	**Technical Mathematics for Chemical and Environmental Technology**	5.0
MECH 1800	**Interpreting Engineering Drawings**	2.0
PHYS 1181	**Physics for Chemical and Environmental Technology 1**	5.0

Level 2 (20 weeks) - Common Core		Credits
Levels 1 and 2 are common to both the Analytical Science and the Process Engineering options.		
CENV 2200	**Bioprocess Fundamentals**	4.0
CENV 2203	**Materials Science and Technology**	6.5
CENV 2248	**Chemical Engineering Basics**	4.0
CHEM 2204	**Chemical Laboratory Techniques**	4.0
CHEM 2409	**Organic Chemistry 1**	8.0
MATH 2415	**Statistics for CENV Technology**	3.5
MATH 2416	**Calculus for CENV Technology**	3.5
PHYS 2181	**Physics for Chemical and Environmental Technology 2**	6.5

Level 3 (15 weeks) - Analytical Science Option		Credits
CENV 3312	**Waste Management**	3.0
CENV 3313	**Environmental Sampling and Analysis**	3.0
CENV 3318	**Classical Analysis and Fire Assaying**	5.0
CENV 3341	**Chemical Engineering Technology 1**	5.0
CENV 3348	**Industrial Processes and the Environment**	3.0
CHEM 3310	**Physical Chemistry**	5.0
CHEM 3409	**Organic Chemistry 2**	6.0

Level 4 (20 weeks) - Analytical Science Option		Credits
CENV 0460	**Ethics for Technologists**	
CENV 4400	**Applied Research Project**	3.5
CENV 4401	**Practicum**	4.5
CENV 4411	**Pollution Science and Microbiology**	6.0
CENV 4418	**Instrumental Inorganic Analysis**	6.0
CENV 4441	**Chemical Engineering Technology 2**	6.0
CHEM 4427	**Instrumental Organic Analysis**	6.0
COMM 2135	**Technical Communication 2**	3.5
MATH 4416	**Differential Equations and Numerical Methods for CENV Technology**	5.0

Total Credits:	**139.5**

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 [53] to find out.

Program Details

Program length

Two years, full-time.

Additional program options

- Chemical and Environmental Technology - Process Engineering Option [54]

Accreditation

Students may apply for student membership with the Applied Science Technologists and Technicians of British Columbia [55] (ASTTBC). Graduates may apply to ASTTBC for registration as an Applied Science Technologist (AScT).

Program delivery

In person: This program is delivered on campus.

Program location

Burnaby Campus [56]
3700 Willingdon Avenue
Burnaby, BC

Continue your education

Graduates of the Chemical and Environmental Technology program may go on to earn a degree through the Bachelor of Technology programs at BCIT. Alternatively, the program has excellent transfer credit arrangements for degree completion with several universities. Please contact the department for details.

- BCIT Bachelor of Technology programs
  - Environmental Engineering [57]
  - Forensic Investigation (Forensic Science Option) [58]
  - Technology Management [59]
- Lakehead University
  - Bachelor of Engineering in Chemical Engineering [60]
- Royal Roads University
  - Bachelor of Science in Environmental Science [61]

Graduating & Jobs

Job opportunities

A broad set of skills allows graduates to pursue employment from a wide array of opportunities in many industries. Typical examples include:

- Chemical/Environmental analysts in commercial, industrial and research labs
- Research technologists for fuel cell and energy companies
- Specialists in air/water quality monitoring and remediation for government and consulting firms
- Production supervisor trainees in production or recycling plants
- Quality assurance officers for pharmaceutical and process industries
- Engineering technologists or materials testing specialists for engineering firms
- Process technologists for producers of chemical, metallurgical, paper, or pharmaceutical products
- Technical service representatives for chemical or equipment supply companies

Graduate employment outcomes

The BCIT student outcomes report presents summary findings from the annual survey of former students administered by BC Stats one to two years after graduation. These reports combine the last three years of available results for the 2021-2023 BCIT Outcomes Surveys of 2020-2022 graduates and for Degree 2019-2021 graduates. The reports are organized into three-page summaries containing information on graduates' labour market experiences and opinions regarding their education. More detailed information can be accessed at the BC Student Outcomes [62] website.

To view these results, you may need to have the Adobe Acrobat Reader [63] installed in your Web browser.

- Chemical and Environmental Technology (Analytical Science Option) [64]

Faculty, Advisors & Staff

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Contact Us

Programs and courses are subject to change without notice.

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[4] https://www.bcit.ca/admission/entrance-requirements/english-language-proficiency/#category2
[5] https://www.bcit.ca/admission/entrance-requirements/equivalencies/bc-yukon-high-school/#math12
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[15] https://www.bcit.ca/programs/chemical-and-environmental-technology-analytical-science-option-diploma-full-time-537adiplt/#apply
[16] https://www.bcit.ca/admission/contact-us/ask-us/frequently-asked-questions/
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[52] https://www.bcit.ca/outlines/math4416/
[53] https://www.bcit.ca/admission/entrance-requirements/transfer-credit/
[54] https://www.bcit.ca/programs/chemical-and-environmental-technology-process-engineering-option-diploma-full-time-537bdiplt/
[55] https://asttbc.org/
[56] https://www.bcit.ca/about/visit/campuses-directions/burnaby/
[57] https://www.bcit.ca/programs/environmental-engineering-bachelor-of-technology-full-time-part-time-8120btech/
[58] https://www.bcit.ca/programs/forensic-investigation-forensic-science-option-bachelor-of-technology-part-time-847bbtech/
[59] https://www.bcit.ca/programs/technology-management-bachelor-of-technology-part-time-8350btech/
[60] https://www.lakeheadu.ca/programs/departments/chemical-engineering
[61] https://www.royalroads.ca/programs/bachelor-science-environmental-science
[62] https://bcstats.shinyapps.io/so_data_viewer/
[63] https://get.adobe.com/reader/
[64] https://www.bcit.ca/files/ir/gp/5370dipma.pdf
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