# Applied Data Analytics

Certificate Part-time School of Computing and Academic Studies

## Overview

The Applied Data Analytics Certificate (ADAC) program begins with data modelling, relational database management, and SQL programming, before moving on to Excel, Python, and statistics. Learn best practices and gain hands-on experience using Business Intelligence (BI) and visual analytics tools to build and manage data analytics systems.

Delivery: blended. See details.

## About the program

- ADAC from BCIT Computing [1] provides the technical foundations to build and manage data analytics systems
- Learn best practices to model and mine data, including how to use IT tools for Business Intelligence (BI)
- ADAC's focus is on building and using data analytics systems based on structured data
- Starting with relational database and Structured Query Language (SQL), students are then introduced to Excel, Python, and statistics to develop the foundations for data analytics systems
- Learn to use statistical methods to analyze data
- Develop Visual Analytics skills to create dashboards that power efficient decision making using Tableau and MS PowerBI
- Business Analysis and Systems Design, IT Security, and Data Quality Improvement are also required courses
- Electives include: UX/UI, Database Development, business intelligence reporting tools, and health sector based decision-making courses
- Please note: Some course sections may require you to bring your own device (BYOD)

See Program Details [2] to learn more.

## Is this certificate for you?

- You have a strong mathematical background and an eye for detail
- You enjoy working on group projects and making presentations
- You'd like to use data to create insight, applying both your problem solving and communication skills
- ADAC was created primarily for mature students with prior work and/or post-secondary experience
- You're able to devote 10+ hours per week outside of class for each course to complete homework, reading assignments and group work – learn more about workload and attendance expectations in our Computing Flexible Learning Student Guide [3]

Please check the Entrance Requirements [4] .

## What Applied Data Analytics grads can do

- Create, manage, and use data analytics systems and tools to help organizations make informed decisions
- Be employed in data analyst roles – learn more in graduating and outcomes [5]

**Become a Data Analyst. Start with just one course:**
COMP 1630 – Relational Database and SQL [6] – Register online now!

## Entrance Requirements

**Important Notice for International students and students on limited timelines**

Prior to submitting a program declaration, those on limited timelines (e.g. with student loans or time-limited sponsorship) must first email cstflex@bcit.ca to receive a signed Course Planning Document, which they will be required to attach to their online declaration.

Applications for international students must first be submitted online via How to Apply to Flexible Learning Programs – BCIT [7] .

### Please Note:

BCIT is Post-Secondary Education. Students must have English and Math skills equivalent to a minimum of BC high school Grade 12 level in order to complete courses in the ADAC program.

Please review these alternatives to Grade 12 English equivalents [8] .

In the higher-level COMP courses students must engage in significant group work, write technical reports in teams, and make presentations in teams. One of the goals of this program is to help students acquire interpersonal skills. In order to succeed in a data analytics related jobs, strong communication and people skills are required.

If you are unsure about your spoken English, please consider COMM 0033 English Speaking and Listening Assessment [9] before starting this program.

Students who have been away from higher math or need a refresher should consider completing the online MATH 0060 [10] prior to MATH 1060 as it assumes a solid understanding of high school MATH 12 pre-calculus.

**ADAC** students must have the ability to use **Windows 11 Computers** to install and configure related software applications. The following are assumed prerequisites for this program.

- COMP 1002 [11] or equivalent knowledge of file management on a Windows 11 based PC.
- COMP 2010 [12] or equivalent knowledge of MS Office fundamentals.

Most students will benefit by completing COMP 1002 prior to starting ADAC.

**Please Note:** ADAC requires a minimum of 5 terms of study, with a maximum of 5 years to complete.

- Specific prerequisites or equivalent knowledge are required for each course.
- Most students should complete COMP 1630 prior to taking MATH 1060 [13] .
- Please complete courses via the tier sequences as indicated.

**Domestic students attempting 1–2 courses per term:**

Complete COMP 1630 Relational Database Design and SQL [14] prior to declaring the Applied Data Analytics Certificate (ADAC).

Students who have completed or who are in process of completing the Associate Certificate in Applied Database Administration and Design (ADAD) will have some credit for the database and system foundations in **ADAC**.

Contact the department after completing COMP 1630 and MATH 1060 if you require additional course planning advice. Please read the Computing Flexible Learning Student Guide [15] prior to declaring the **ADAC** and before registering for any **COMP** courses.

If you have any questions about ADAC, please email the department cstflex@bcit.ca.

## International applicants

This program is available to international applicants. A valid study permit [16] is required prior to starting the program.

## Program declaration

Declaring your Flexible Learning (Part-time Studies) program ensures that BCIT is aware of your intent to complete a program as it is currently outlined and provides you the opportunity to apply for transfer credit.

To submit your declaration:

- Answer all questions completely.
- If required, convert transcripts and documents to PDF files [17] .
- Have a credit card ready to pay the application fee.

Upon approval, a program plan letter will be sent to you confirming your program of study. Please allow approximately eight weeks for processing.

Learn more about program declaration [19]

## Scheduled Intakes

Ongoing Flexible Learning (Part-time Studies) intakes: January, April, and September. [20]

Some summer sections may also be available.

## Prior Learning Assessment & Recognition (PLAR)

Email cstflex@bcit.ca to find out if PLAR is an option for COMP 1630 and/or COMP 2364. Aside from those two courses, there are no other PLAR exams available for this program. ADAC uses applied COMP courses unique to BCIT Computing.

# Costs & Supplies

All Computing Flexible Learning programs are course-by-course registration.

Participants must provide their own current model PC with a minimum of an i5 or equivalent processor, 8 GB of RAM and 256 GB storage capable of running MS Windows 11. High-speed internet access is needed for online sections and homework.

There are typically 16 courses required to complete the ADAC. The average cost for each Flexible Learning course for Canadian citizens and permanent residents is around $500-$700 per course plus books. Canadian and PR students should budget $9,500 for total program tuition and books.

International students should budget x3 for tuition, so around $27,000 including books.

Typical part-time students may complete the **ADAC** over 3 years with 2 courses per term. This would equate to an average workload of 25+ hours per week.

Some students may complete **ADAC** over 2 years (5-6 x PTS terms) with 3 specific courses per term which equates to an average workload of 40+ hours per week between class time, reading and homework.

Attendance and participation are mandatory, students who skip classes or who do not participate may be dropped from a COMP course.

**Note:** Please register early to avoid disappointment, our database courses are very popular and fill weeks or months in advance.

**Important Notice:** BCIT has reopened the Applied Data Analytics Certificate program to international students, and limited seats per term may be available. For details, please contact the department.

## Tuition fees

Flexible Learning (Part-time Studies) tuition is charged on a course-by-course basis. Please see the Flexible Learning Tuition & Fees [21] page for more information on domestic and international tuitions.

# Courses

## Class hours

Flexible learning (Part-time studies) delivery on evenings and weekends. COMP courses typically run weeknights at the Burnaby Campus [22] from 6:30-9:30 p.m. and at the Downtown Campus [23] from 6:00-9:00 p.m.

# Program matrix

Check current availability of courses [24] for this program.

| Tier 1 Required Courses (11.0 credits) | | Credits |
| --- | --- | --- |
| Complete Tier 1 before declaring the program and taking Tier 2 or 3 courses. | | |
| COMP 1630 [25] | Relational Database Design and SQL | 5.0 |
| COMP 2364 [27] | Microsoft Excel* | 3.0 |
| MATH 1060 [29] | Statistics for Data Analysis | 3.0 |

*Credit will only be granted for one of COMP 2362 or COMP 2364. Students who have completed COMP 2362 must complete an additional 1.5 credits of electives to ensure a total of 45.0 credits.

International students will receive a checklist document from the Computing Department with specific course planning for each term.

| Tier 2 Required Courses (13.0 credits) | | Credits |
| --- | --- | --- |
| Courses within the tiers can be taken in any order as long as the course prerequisites are met. To be successful, it is recommended that you complete Tier 2 courses before Tier 3. | | |
| COMP 2156 [31] | Introduction to Microsoft Power BI | 1.5 |
| COMP 2831 [33] | Business Analysis and Systems Design | 4.0 |
| COMP 2853 [35] | Introduction to Python for Data Analysis** | 3.0 |
| COMP 2854 [37] | Data Analytics Fundamentals* | 3.0 |
| COMP 3839 [39] | Data Quality Improvement | 1.5 |

*All Tier 1 courses are required as prerequisites.

**COMP 2454 was replaced by COMP 2853 starting September 2024. Credit will only be granted for one of:

- COMP 2454 or COMP 2853

| Tier 3 Required Courses (11.5 credits) | | Credits |
| --- | --- | --- |
| COMP 2256 [41] | Introduction to Visual Analytics with Tableau | 3.0 |
| COMP 3704 [43] | Applied IT Security Fundamentals | 3.0 |
| COMP 3841 [45] | Introduction to Data Warehouses with Big Data* | 1.5 |
| MATH 3060 [47] | Advanced Statistical Techniques for Data Analytics | 4.0 |

*Credit will only be granted for one of COMP 3840 or COMP 3841.

| Tier 4 Required Courses (6.0 credits) | | Credits |
| --- | --- | --- |
| BLAW 3205 [49] | Internet and IT Law | 3.0 |
| COMP 4254 [51] | Advanced Topics in Data Analytics | 3.0 |

| Elective Courses (3.5 credits) | | Credits |
| --- | --- | --- |
| Complete 3.5 credits from the following list of electives: | | |
| COMP 1011 [53] | UX/UI Development | 3.0 |
| COMP 1288 [55] | IT Project Management Fundamentals | 1.5 |
| COMP 2252 [57] | SAP Crystal Reports | 3.0 |
| COMP 3156 [59] | MS Power BI Optimization | 1.5 |
| COMP 3157 [61] | MS Power BI Advanced Data Visualization | 1.5 |
| COMP 3678 [63] | SQL Server Development | 4.0 |
| COMP 3679 [65] | MS Azure and SQL Analytics Tools | 4.0 |
| HLED 7250 [67] | Leading Performance Measurement and Management | 3.0 |
| HLED 7260 [69] | Leadership Issues in Evidence-based Decision Making | 3.0 |
| XCOM 3840 [71] | Technical Presentations | 1.5 |

*Credit will only be granted for one of:

- COMP 3678 or COMP 4678
- COMP 3679 or COMP 4679

| | |
|---|---|
| **Total Credits:** | **45.0** |

Check current availability of courses [73] for this program.

# 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 [74] to find out.

# Program Details

The focus of **ADAC** is on structured data, statistical mathematics and related tools to to use, develop and manage Data Analytic systems

**ADAC** may be completed with as few as 16 courses, however delivery was designed for 1-2 courses per term.

Not all required higher-level and elective courses may be offered each term and some courses are only offered once per year.

Some students who also want to work as a **DBA** may wish to complete the Applied Database Administration and Design Associate Certificate, (ADAD) [75] .

Credit for overlapping courses will apply for both credentials if ADAD is declared and completed first.

There are foundation database courses and tools that apply to both ADAD and ADAC.

## Workload

Complete Tier 1 before starting Tier 2.

COMP 2854 and MATH 3060 should be completed before starting Tier 3.

a) Attempting 3x COMP courses per term can equate to a 40+ hour workload per week and take 2 years to complete ADAC.

b) Attempting 2x COMP courses per term equates to a 25+ hour workload per week and 3 years to complete the program.

**Computer hardware and Internet requirements**

Students must provide a current model PC desktop or laptop with a webcam, microphone and have high-speed internet access. COMP courses may use two-way audio and video as well as group work outside of class.

Participants must be computer literate in order to participate and complete each COMP course.

Please contact the department for course planning or if you have any questions.

Students who hold a bachelor's degree or higher, and are looking for an applied business analytics program to learn how to harness data and make data-driven business decisions, might consider the Graduate Certificate in Business Analytics [76] available from BCIT's School of Business.

## Computing Flexible Learning provides part–time only program delivery, nights and weekends.

The ADAC program was not designed for Full-time delivery, this is due to prerequisites and scheduling. Please read the details on the program entry page.

## Program length

This program must be completed within 5 years. Students who only complete one course per term will take 5 years to finish this certificate. Those students who complete two courses per term may complete the program in less than 3 years.

**NOTE:** Not all courses are offered every term and each course has specific prerequisites.

## Grading

Each COMP course in this program has a passing grade of 60%

## Accreditation

Several of the Microsoft SQL-related electives in this program provide preparation for Microsoft Certification exams.

Students will also require additional preparation and studying in order to pass these industry certification exams.

**Note:** Industry exams are independent from BCIT credentials. These exams may be purchased for additional costs, from various third parties.

## Program delivery

Blended: This program is delivered partly on campus and partly online.

Courses are primarily delivered in Windows based PC computer labs in a lecture/lab format. Please review COMP 1002 Applied Computer Concepts for required expectations. Students must be computer literate and able to manage file systems on a network.

## Program location

Courses may be offered at the following locations:

Burnaby Campus [77]
3700 Willingdon Avenue
Burnaby, BC

Downtown Campus [78]
555 Seymour Street
Vancouver, BC

Online Learning [79]

## Program abandonment

- Students approved for a Flexible Learning (Part-time Studies) program are expected to register and complete courses on a continuous basis.

- A student that has not completed a course from their approved program of study over a period of three consecutive academic terms will be considered to have abandoned the program.

- Throughout the duration of the program, a student is permitted a maximum of five academic terms where they are not required to register and complete a course from their approved program of study. Students who exceed the five term maximum will be considered to have abandoned the program.

- Students who have abandoned their approved program of study and wish to be reinstated will be required to apply for program approval for a current credential. BCIT cannot guarantee that courses taken prior to this reapplication will be credited towards the current credential.

BCIT Policy 5103 - Student Evaluation [PDF] [80] permits a maximum of three attempts to successfully complete each course within a credential.

# Graduating & Jobs

## Graduate outcome survey highlight

**94%** of grads were (very) satisfied with their education (survey year 2019-2021).

Read about one student's career success. [81]

## 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 [82] website.

To view these results, you may need to have the Adobe Acrobat Reader [83] installed in your Web browser.

- Applied Data Analytics [84]

## Apply for graduation

Upon successful completion of all program requirements, complete an Application for BCIT Credential [PDF] [85] and submit it to Student Information and Enrolment Services.

Allow approximately six to eight weeks for processing.

All financial obligations to the Institute must be met prior to issuance of any credential.

# Faculty, Advisors & Staff

The Applied Data Analytics Certificate (**ADAC)** program was developed in conjunction with subject matter experts. Both ADAD and **ADAC** were created and developed by Kevin Cudihee, Program Head for BCIT Computing Flexible Learning and Industry Training.

Program surveys and proposals were coordinated by Cynthia van Ginkel, Business Development Manager for SoCAS. BCIT Computing Flexible Learning courses are delivered by subject matter experts in Computing and Information Technology, Math, Business Systems, Law, Business Intelligence and Analytics.

ADAC course development was directed by Kevin Cudihee and delivered by: Diana Gerrard, Joanne Atha, Andrew McConnell, Takashi Nakamura, Vahid Dabbaghian, Benjamin Yu, Frank Wegener, Ed Rubuliak, Glen Elliott, Alex Volkov, Ashok Pamu, Pat MacGee, Lei Zhang, Ahmad Chamy, Wouter De Raeve, Donabel Santos, Gordon Hamilton, Steve Overland, Farshad Abasi, and Karim Lalji.

Elective courses were developed by Andre Coetzee, Cathy Michitsch, Marin Kostadinovic, Kirk Mitchel and Shan Satoglu.

Administrative support is provided by Karen Lee.

## Advisory committee

This credential was approved by the Computer Systems Technology, CST Curriculum Committee and School of Computing an Academic Studies Quality Committee, SQC.

# Students on Limited Timelines

Students who require a minimum course load to retain eligibility for financial aid or international student status have no guarantees that all or any Flexible Learning courses will be available in any given term.

COMP Flexible Learning courses may fill quickly so space is not guaranteed and courses may be cancelled before the term start if there is insufficient interest.

This may impact both the number of courses a student is able to take in any term and the time it takes to complete a part-time credential. As a result, students may not be able to obtain the minimum credits they need or want in each term to continue in the program.

## Computing Flexible Learning

ADAC was not designed for those attempting to complete this certificate program in a full-time delivery model of fewer than 2 years or 5-6 x PTS terms, due to prerequisites and scheduling.

Please make allowances for this 2-year minimum time requirement in your funding or student visa applications.

**Important Notice for International applicants:**

The Applied Data Analytics Certificate **(ADAC)** program is available to international applicants who currently have a valid status in Canada [86] . A valid study permit [87] is required prior to starting the program.  Limited seats per term are available. For details, please contact the department.

Prior to submitting a program declaration, international students and those on limited timelines (e.g. with student loans) must first contact the department directly to receive a signed Course Planning Document, which they will be required to attach to their online declaration.

# Contact Us

Please email BCIT Computing Flexible Learning:

**Email:** cstflex@bcit.ca

Programs and courses are subject to change without notice.

## List of links found on this page

This list includes all links found on this page for your reference.

[1] https://www.bcit.ca/computing-academic-studies/computing/part-time-studies/
[2] https://www.bcit.ca/programs/applied-data-analytics-certificate-part-time-5512cert/#details
[3] https://www.bcit.ca/files/cas/computingparttime/pdf/computing_pts_student_guide.pdf
[4] https://www.bcit.ca/programs/applied-data-analytics-certificate-part-time-5512cert/#entry
[5] https://www.bcit.ca/programs/applied-data-analytics-certificate-part-time-5512cert/#graduating
[6] https://www.bcit.ca/study/courses/comp1630
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[18] https://apply.educationplannerbc.ca/bcit
[19] https://www.bcit.ca/admission/how-to-apply/program-declaration/
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[24] https://www.bcit.ca/courses/blaw3205,comp1011,comp1288,comp1630,comp2156,comp2252,comp2256,comp2364,comp2831,comp2853,comp2854,comp3156,comp3157,com
[25] https://www.bcit.ca/courses/relational-database-design-and-sql-comp-1630/
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[74] https://www.bcit.ca/admission/entrance-requirements/transfer-credit/
[75] https://www.bcit.ca/programs/applied-database-administration-and-design-associate-certificate-part-time-6994acert/
[76] https://www.bcit.ca/programs/business-analytics-graduate-certificate-part-time-a300grcert/
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[82] https://bcstats.shinyapps.io/so_data_viewer/
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