



**Bow Valley
College**

Course Outline

DATA1100

Programming for Data
Analysis
Fall 2025 - Current

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DATA1100 Programming for Data Analysis**COURSE DESCRIPTION**

This course focuses on the ability to write and execute Python programs for data analysis. You will configure your Python environment, write simple and complex Python statements, and utilize various data types and structures. You will also design and implement object-oriented programs, handle data from external files, and ensure code meets business requirements. This course is essential for roles that require programming skills to analyze and interpret data, providing a foundation for more advanced data analytics tasks. The course integrates technical tasks with transversal skills such as problem-solving and logical reasoning, ensuring learners can apply their knowledge in practical, real-world scenarios.

REQUISITES	None
EQUIVALENTS	None
CREDITS	3
HOURS	45
ELIGIBLE FOR PLAR	No
ZERO TEXTBOOK COST	Yes

COURSE COMPETENCY**COMPETENCY TITLE**

Programming for Data Analysis

COMPETENCY STATEMENT

Develop and implement Python programs to analyze data, using control structures, data types, and object-oriented programming principles to meet business requirements.

COMPETENCY DESCRIPTION

This competency focuses on the ability to write and execute Python programs for data analysis. Learners will configure their Python environment, write simple and complex Python statements, and utilize various data types and structures. They will also design and implement object-oriented programs, handle data from external files, while ensuring their code meets business requirements. This competency is essential for roles that require programming skills to analyze and interpret data, providing a foundation for more advanced data analytics tasks. The competency integrates technical tasks with transversal skills such as problem-solving and logical reasoning, ensuring learners can apply their knowledge in practical, real-world scenarios.

COURSE LEARNING OUTCOMES

Bow Valley College is committed to ensuring our graduates can demonstrate their abilities in key areas that will make them effective citizens and encourage their development as lifelong learners. In addition to the discipline-specific skills that learners acquire in their programs, the College has identified ten learning outcomes.

College-Wide Outcomes:

1. Communication
2. Thinking Skills
3. Numeracy and Financial Literacy
4. Working with Others
5. Digital Literacy
6. Positive Attitudes and Behaviours
7. Continuous Learning
8. Health and Wellness Awareness
9. Citizenship and Intercultural Competence
10. Environmental Sustainability

#	COURSE LEARNING OUTCOME(S)	COLLEGE WIDE OUTCOMES SUPPORTED
1	Design programs	2, 3, 5
2	Write simple Python statements implementing control structures	2, 3, 5
3	Write simple Python statements using different data types and structures	2, 3, 5

LEARNING PATHWAY

**The time it takes learners to demonstrate competencies will vary. An example of a suggested schedule for learning and development is shown below. Learners will need to plan out their assessment attempts within their course. For additional information, please consult the Course Offering Information in Brightspace.*

WEEK/HOURS LEARNING AND DEVELOPMENT PLAN

1	Module 0: Setup Python environment; Module 1: Design Programs
2	Module 1: Design Programs
3	Module 1: Design Programs
4	Module 2: Write simple Python statements implementing control structures
5	Module 2: Write simple Python statements implementing control structures
6	Module 2: Write simple Python statements implementing control structures
7	Module 2: Write simple Python statements implementing control structures
8	Module 3: Write simple Python statements using different data types and structures
9	Reading Week
10	Module 3: Write simple Python statements using different data types and structures
11	Module 3: Write simple Python statements using different data types and structures
12	Module 3: Write simple Python statements using different data types and structures
13	Complete Competency Assessment
14	Complete Competency Assessment
15	Complete Mastery Assessment

ASSESSMENT

This course follows an assessment-first approach, in which learners will be assessed, and receive structured feedback, and a personalized learning plan. Learners will also receive differentiated support from an instructor based on their individual needs.

Learners will have a variety of ways to demonstrate they have met the required competency through the demonstration of learning outcomes and criteria as laid out in the rubric. Learners will have multiple (but not unlimited) attempts to prove competency. It is suggested that learners plan out their assessment attempts within their course.

Learners will have flexibility in how they satisfy course learning outcomes while still adhering to the criteria found in the rubric and the Course Offering information. Please refer to the Course Offering Information and the rubric in Brightspace for additional information.

COURSE
LEARNING ASSESSMENT
OUTCOMES

1, 2, 3	Competency Assessment (4 parts)
1, 2, 3	Mastery Assessment

PERFORMANCE
STANDARDS

Successful demonstration of all learning outcomes is required to pass this course. This course may be part of a competency or larger program of study.

Please consult with the program area or the Bow Valley College website for completion requirements.

GRADING SCHEME

Symbol	Description	Grade Point Value
MAST	Mastery	4.00
COMP	Competent	3.00
DEVL	Developing	N/A
F	Fail	0.00
W	Withdraw	N/A

REQUIRED LEARNING
RESOURCES

All required learning resources are presented in D2L course shell.

Additional learning resources may be found in the Course Offering Information or in Brightspace.

ADDITIONAL INFORMATION

Additional information may be found in the Course Offering Information or in Brightspace.

ACADEMIC ACCOMMODATIONS

Learners with a disability (learning, physical, and/or mental health) may qualify for academic and exam accommodations. For more information, or to apply for accommodations, learners should make an appointment with Accessibility Services in the Learner Success Services (LSS) Department. Accessibility Services can also assist learners who may be struggling with learning but do not have a formal diagnosis. To make an appointment visit LSS on the first floor of the south campus or call 403-410-1440. It is the learner's responsibility to contact Accessibility Services and request academic accommodations. For more information, please visit our website at <http://www.bowvalleycollege.ca/accessibility>.

INSTITUTIONAL POLICIES

Bow Valley College is committed to the highest standards of academic integrity and honesty. Learners are urged to become familiar with and uphold the following policies: Academic Integrity (500-1-7), Learner Code of Conduct, Procedures and Guidelines (500-1-1), Learner Appeals (500-1-12), Attendance (500-1-10), Grading (500-1-6), Academic Continuance and Graduation (500-1-5), and Electronic Communications (300-2-13). Audio or video recording of lectures, labs, seminars, or any other teaching and learning environment by learners is allowed only with consent of the instructor as part of an approved accommodation plan. Recorded material is to be used solely for personal study and is not being used or distributed without prior written consent from the instructor.

Turnitin:

Students may be required to submit their course work to Turnitin, a third-party service provider engaged by BVC. Turnitin identifies plagiarism by checking databases of electronic books and articles, archived webpages, and previously submitted student papers. Students acknowledge that any course work or essays submitted to Turnitin will be included as source documents in the Turnitin.com reference database, where it will be used solely to detect plagiarism. The terms that apply to a student's use of Turnitin are described on Turnitin.com.

Online Exam Proctoring:

Examinations for this course may require proctoring through an online proctoring service. Online proctoring enables online exam taking within a controlled and monitored environment, thereby enhancing academic integrity. Online proctoring may occur through a variety of methods, including but not limited to:

- a. live online proctoring where a remote invigilator authenticates identity and observes completion of an exam using specialized software and recordings;
- b. automated proctoring where the exam session is recorded and AI (artificial intelligence) analyzed;
- c. browser lockdown that limits access to other applications, websites, copying, printing, screen capture and other functions; or
- d. a combination of both live/automated proctoring and browser lockdown.

Course instructors will review recordings, analyses, and data obtained through online proctoring for academic integrity infractions. It is the student's responsibility to meet the technical, software, location, and identity verification requirements necessary to enable online proctoring.

Further details of these policies are available in the Academic Calendar and on the Bow Valley College website, bowvalleycollege.ca.

Learners are encouraged to keep a copy of this course outline for future reference.

Collection of Personal Information:

This course, including your image and voice, may be recorded and made available to you and other students taking the course section. By attending the class(es) online or in person, you consent to the collection of your personal information. If you do not wish to be recorded, please contact your instructor before starting the course/class to discuss alternative arrangements.

You may use the recordings only for educational purposes and you must not copy, share, or use the recordings for any other purpose without the instructor's express permission.

Your personal information is collected in accordance with section 33(c) of the Freedom of Information and Protection of Privacy Act (Alberta) to deliver academic programming, support learner flexibility, promote universal design for learning principles, and for purposes consistent with the course activities and outcomes. If you have any questions about the collection, disclosure, use, or protection of this information, please contact the College's Access and Privacy Officer at foip@bowvalleycollege.ca.