



**Bow Valley  
College**

## **Course Outline**

### **GAME1401**

Game Programming I  
Fall 2025 - Current

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**GAME1401** Game Programming I**COURSE DESCRIPTION**

This course introduces students to programming logic through hands-on activities before progressing to C# basics, object-oriented principles, and game development in Unity. Students will implement physics, animation, and player input while creating small games from scratch. AI-assisted tools support debugging and code refinement, enhancing efficiency while reinforcing core programming skills.

|                       |      |
|-----------------------|------|
| REQUISITES            | None |
| EQUIVALENTS           | None |
| CREDITS               | 3    |
| HOURS                 | 75   |
| ELIGIBLE FOR<br>PLAR  | Yes  |
| ZERO TEXTBOOK<br>COST | Yes  |

**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 | Apply fundamental programming concepts, including variables, control structures, and functions, to solve problems in a game development context. | 1, 2, 3, 5    |
| 2 | Develop and debug C# scripts within the Unity engine to create and control game objects and behaviors.                                           | 1, 2, 3, 5    |
| 3 | Implement core game mechanics, such as player input, physics interactions, and UI management.                                                    | 1, 2, 3, 5    |
| 4 | Apply object-oriented programming principles to design and structure clean, efficient, and scalable code.                                        | 1, 2, 3, 5    |
| 5 | Utilize computational thinking to break down complex problems and design algorithmic solutions.                                                  | 1, 2, 3, 5    |
| 6 | Adhere to professional coding standards, including documentation, and engage in collaborative development practices.                             | 1, 2, 3, 4, 5 |

## COURSE MODULES AND SCHEDULE

*\*Course schedule subject to change, depending on delivery mode and term of study. For exact dates, please consult the Course Offering Information in Brightspace.*

### WEEK/HOURS MODULES

|         |                                             |
|---------|---------------------------------------------|
| Week 1  | Introduction to computational thinking      |
| Week 2  | Logical structures and patterns             |
| Week 3  | Introduction to data and functions          |
| Week 4  | Computational thinking in C#                |
| Week 5  | Functions and basic logic                   |
| Week 6  | Fundamentals of object-oriented programming |
| Week 7  | Applied learning                            |
| Week 8  | Introduction to Unity programming           |
| Week 9  | Reading Week                                |
| Week 10 | Collecting items and basic game management  |
| Week 11 | Advanced tank mechanics with coroutines     |
| Week 12 | First-person mechanics                      |
| Week 13 | Interaction with the environment            |
| Week 14 | Designing interactive systems               |
| Week 15 | Applied learning                            |

**ASSESSMENT**

| COURSE<br>LEARNING<br>OUTCOME(S) | ASSESSMENT              | WEIGHT |
|----------------------------------|-------------------------|--------|
| 1, 2, 3, 4, 5, 6                 | Attendance              | 10%    |
| 1, 2, 3, 4, 5, 6                 | Weekly activities       | 20%    |
| 1, 2, 3, 4, 5, 6                 | Assignments (Minimum 3) | 70%    |

Important: For details on each assignment and exam, please see the Course Offering Information.

**PERFORMANCE  
STANDARDS**

A minimum grade of D is required to pass this course. However, a program may require a higher grade in this course to progress in the program or to meet specific program completion requirements.

Please consult with the program area or contact the program chair for further details. A minimum Grade Point Average of 2.0 is required for graduation.

**GRADING SCHEME**

| Grade | Percentage   | Grade Point | Description                                                              |
|-------|--------------|-------------|--------------------------------------------------------------------------|
| A+    | 95-100       | 4.0         | Exceptional: superior knowledge of subject matter                        |
| A     | 90-94        | 4.0         | Excellent: outstanding knowledge of subject matter                       |
| A-    | 85-89        | 3.67        |                                                                          |
| B+    | 80-84        | 3.33        |                                                                          |
| B     | 75-79        | 3.0         | Very Good: knowledge of subject matter generally mastered                |
| B-    | 70-74        | 2.67        |                                                                          |
| C+    | 67-69        | 2.33        |                                                                          |
| C     | 64-66        | 2.0         | Satisfactory/Acceptable: knowledge of subject matter adequately mastered |
| C-    | 60-63        | 1.67        |                                                                          |
| D+    | 57-59        | 1.33        |                                                                          |
| D     | 50-56        | 1.0         | Minimal Pass                                                             |
| F     | Less than 50 | 0.0         | Fail: an unsatisfactory performance                                      |

## REQUIRED LEARNING RESOURCES

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

## ADDITIONAL INFORMATION

The following software will be taught and will be provided to students. Technology is subject to change based on industry.

- Unity Engine
- Console

- Visual Studio

Language and assessments in this program are based on the partnership with the Alberta Centre for Entertainment Arts.

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](https://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](mailto:foip@bowvalleycollege.ca).