



## IPC144 - Introduction to Programming Using C

Winter - 2023

### Subject Title

Introduction to Programming Using C

### Subject Description

This course covers the fundamental principles of computer programming, with an emphasis on problem solving strategies using structured programming techniques. The C programming language, which is widely used and forms the syntactical basis for object-oriented languages such as C++, C#, and Java, is used to introduce problem analysis, algorithm design, and program implementation. Students work in a cross-platform environment.

### Credit Status

1 credit (3 units)

Required for CPA - Computer Programming and Analysis (Ontario College Advanced Diploma)

Required for CPD - Computer Programmer (Ontario College Diploma)

Professional Option for CTY - Computer Systems Technology (Ontario College Advanced Diploma)

Professional Option for CNS - Computer Networking and Technical Support (Ontario College Diploma)

### Learning Outcomes

Upon successful completion of this subject the student will be able to:

1. Design functions using selection and iteration constructs to solve a programming task
2. Connect functions using pass-by-value and pass-by-address semantics to assemble a complete program
3. Design collections using arrays and structures to manage data efficiently
4. Code algorithms using standard library functions to incorporate existing technology
5. Stream data using standard library functions to interact with users and access persistent text
6. Trace the execution of a procedural program to validate its correctness
7. Code complete programs using appropriate object and pointer types to solve programming problems
8. Explain the purposes of procedural programming features to inform business persons
9. Prepare programming plans using logical components to solve practical problems

### Essential Employability Skills

- Execute mathematical operations accurately.
- Apply a systematic approach to solve problems.
- Use a variety of thinking skills to anticipate and solve problems.
- Analyze, evaluate, and apply relevant information from a variety of sources.
- Manage the use of time and other resources to complete projects.
- Take responsibility for one's own actions, decisions, and consequences.

### Academic Integrity

Seneca upholds a learning community that values academic integrity, honesty, fairness, trust, respect, responsibility and courage. These values enhance Seneca's commitment to deliver high-quality education and teaching excellence, while supporting a positive learning environment. Ensure that you are aware of Seneca's Academic Integrity Policy which can be found at: <http://www.senecacollege.ca/about/policies/academic-integrity-policy.html> Review section 2 of the policy for details regarding approaches to supporting integrity. Section 2.3 and Appendix B of the policy describe various sanctions that can be applied, if there is suspected academic misconduct (e.g., contract cheating, cheating, falsification, impersonation or plagiarism).

Please visit the Academic Integrity website <http://open2.senecac.on.ca/sites/academic-integrity/for-students> to understand and learn more about how to prepare and submit work so that it supports academic integrity, and to avoid academic misconduct.

### **Discrimination/Harassment**

All students and employees have the right to study and work in an environment that is free from discrimination and/or harassment. Language or activities that defeat this objective violate the College Policy on Discrimination/Harassment and shall not be tolerated. Information and assistance are available from the Student Conduct Office at [student.conduct@senecacollege.ca](mailto:student.conduct@senecacollege.ca).

### **Accommodation for Students with Disabilities**

The College will provide reasonable accommodation to students with disabilities in order to promote academic success. If you require accommodation, contact the Counselling and Accessibility Services Office at ext. 22900 to initiate the process for documenting, assessing and implementing your individual accommodation needs.

### **Camera Use and Recordings - Synchronous (Live) Classes**

Synchronous (live) classes may be delivered in person, in a [Flexible Learning space](#), or online through a Seneca web conferencing platform such as MS Teams or Zoom. Flexible Learning spaces are equipped with cameras, microphones, monitors and speakers that capture and stream instructor and student interactions, providing an in-person experience for students choosing to study online.

Students joining a live class online may be required to have a working camera in order to participate, or for certain activities (e.g. group work, assessments), and high-speed broadband access (e.g. Cable, DSL) is highly recommended. In the event students encounter circumstances that impact their ability to join the platform with their camera on, they should reach out to the professor to discuss. Live classes may be recorded and made available to students to support access to course content and promote student learning and success.

By attending live classes, students are consenting to the collection and use of their personal information for the purposes of administering the class and associated coursework. To learn more about Seneca's privacy practices, visit [Privacy Notice](#).

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Seneca College of Applied Arts and Technology