



**NORTH TORONTO COLLEGIATE INSTITUTE**

**Mathematics Department**

Telephone 416-393-9180, ext. 20080

**Teacher:**

Course Title	Course Code	Credit Value	Prerequisite
Introduction Computer Science, Grade 12 University	ICS4U1	1.0	ICS3U

**COURSE DESCRIPTION**

This course enables students to further develop knowledge and skills in computer science. Students will use modular design principles to create complex and fully documented programs, according to industry standards. Student teams will manage a large software development project, from planning through to project review. Students will also analyze algorithms for effectiveness. They will investigate ethical issues in computing and further explore environmental issues, emerging technologies, areas of research in computer science, and careers in the field.

(Ontario Curriculum, Grades 11 and 12 Computer Science Education, revised 2009)

**OVERALL EXPECTATIONS** By the end of this course, students should be able to:

**A. Programming Concepts and Skills**

- demonstrate the ability to use different data types and expressions when creating computer programs;
- describe and use modular programming concepts and principles in the creation of computer programs;
- design and write algorithms and subprograms to solve a variety of problems;
- use proper code maintenance techniques when creating computer programs.

**B. Software Development**

- demonstrate the ability to manage the software development process effectively, through all of its stages – planning, development, production, and closing;
- apply standard project management techniques in the context of a student-managed team project.

**C. Designing Modular Programs**

- demonstrate the ability to apply modular design concepts in computer programs;
- analyse algorithms for their effectiveness in solving a problem.

**D. Topics in Computer Science**

- assess strategies and initiatives that promote environmental stewardship with respect to the use of computers and related technologies;
- analyse ethical issues and propose strategies to encourage ethical practices related to the use of computers;
- analyse the impact of emerging computer technologies on society and the economy;
- research and report on different areas of research in computer science, and careers related to computer science.

**Unit 1: Basic Java**

**Unit 2: Java Methods**

**Unit 3: Java Classes and OOP**

**Unit 4: Data Structures**

**Unit 5: Issues in Computer Science**

**ASSESSMENT AND EVALUATION BREAKDOWN**

To promote student success, ongoing assessment and feedback will be given regularly to the students. A variety of assessment and evaluation strategies will be used in this course, **including quizzes, tests, assignments**. Expectations will be evaluated based on the provincial curriculum expectations and the achievement levels outlined in the ministry document. Expectations are organized into four categories of knowledge and skills. The course evaluation is broken down according to the strands and percentages listed below:

Term Evaluation 70 %		Final Evaluation 30 %	
Knowledge and Understanding	25 %	Summative	30%
Thinking	25 %		
Communication	20 %		
Application	30 %		

**Learning Skills**

The evaluation of learning skills (responsibility, collaboration, independent work, organization, self regulation, and initiative) will be reported as needs improvement, satisfactory, good or excellent. Students will find that concentrating on these skills will result in a higher level of success in meeting the course expectations.

**General Expectations:**

Regular and punctual attendance, daily homework practice, active participation in class activities, and a positive attitude are the most effective ways to ensure success in the course. Please enter the classroom with the mindset of teamwork and respect. If you are late, you are to go to the office to obtain a late slip prior to coming to the class.

**Due Dates & Test Dates:**

Students are responsible to hand in work in accordance with the due date. In the case of a known absence (e.g., a field trip, a sports meet, or an unavoidable medical appointment) on the day an evaluation is scheduled, a student must speak to the teacher in advance and provide acceptable documentation to arrange an evaluation makeup opportunity during lunch or after school at the teacher's discretion. In the case of an unexpected absence, a student must communicate with the teacher on the day upon return to school to make alternate arrangements. Failure to do so may jeopardize any makeup opportunity. Once a marked evaluation is returned to the class, a student can no longer make up for the missed evaluation, and a mark of zero will be issued.

**Student Accommodations:**

Appropriate accommodations for exceptional and ELL students are provided by the teacher in accordance with the recommendations as outlined in each identified student's Individual Education Plan (IEP) and/or Annual Education Plan (AEP). Please speak to your teacher if you have an IEP or need any accommodations to support your success. Open communication between students and the teacher is key to math learning in the classroom.

If you have an IEP, please inform your teacher within the first days of class so accommodations can be implemented right away.

**Absences:**

You are responsible for any work missed while you are away. It is best to find out what was covered up in class. Class material will be provided on the digital platforms used in class (Brightspace, OneNote, Google Classroom)

**Extra Help and Homework:**

Extra help is available several days a week after school, and during lunch. Most classes will begin with homework help. Homework is assigned on most days. Homework is expected to be completed on a regular basis.

**Respect and Behaviour:**

Students and parents should make themselves aware of the contents of the North Toronto Code of Respect and Behaviour. This document contains the specifics regarding school expectations, and procedures for attendance and evaluations. This can be found on the [NTCI website](https://www.northtorontoci.ca/), at <https://www.northtorontoci.ca/>.

**We look forward to supporting your mathematics learning journey!**

**Note: Information provided by this course outline is subject to change without further written notice.**