Master of Applied Science in Computer Science

The Program

The MASc in Computer Science is Masters (full-time) completed over a period of a 16 months or 2 years of full-time study. The program is for students wanting to add to the knowledge they gained in undergraduate study. Students wishing to complete the program on a part-time basis must complete the program within 6 years.

To complete the program, students must complete 10-11 courses. Each course is worth the equivalent of 3 credits, with the exception of *Computer Science Graduate Seminar*, which is a mandatory 6 credits and taken during the students first Fall semester, and *Project*, an optional experiential project-based course, which is also worth 6 credits. This means that to complete the program, students must complete 1 mandatory course and 9-10 elective courses totaling 36 credits.

The full-time pathways are as follows:

2-year pathway

	YEAR 1			YEAR 2		
Semester	Fall	Winter	Spring/Summer	Fall	Winter	Spring/Summer
Dates	September-December	January-April	May-August	September-December	January-April	May-August
Credits	**9**	**9**	**-**	**9**	**9**	**-**
						Total: 36 Credits

Condensed 16-month pathway

	YEAR 1			YEAR 2		
Semester	Fall	Winter	Spring/Summer	Fall	Winter	Spring/Summer
Dates	September-December	January-April	May-August	September-December	January-April	May-August
Credits	**9**	**9**	**9**	**9**	**-**	**-**
						Total: 36 Credits

Note: Students in both the 2-year and 16-month pathway graduate in May following their last semester of courses.

St. Francis Xavier University, Antigonish, Nova Scotia, Canada

Available Courses

Below are the graduate-level courses available to students in the MASc. Not every course is offered year. Students will also have the option of completing up to 3 credits of undergraduate courses (not listed below) or graduate courses outside of Computer Science to count towards their MASc in Computer Science degree.

1. *Real-Time System* — 3 Credits
2. *High Performance Computing* — 3 Credits
3. *Embedded Systems* — 3 Credits
4. *Theory of Computing* — 3 Credits
5. *Representations and Reasoning* — 3 Credits
6. *Specification and Verification* — 3 Credits
7. *Computational Logic* — 3 Credits
8. *Artificial Intelligence* — 3 Credits
9. *Matrix Computation* — 3 Credits
10. *Data Mining and Machine Learning* — 3 Credits
11. *Computer and Network Security* — 3 Credits
12. *Computer Graphics* — 3 Credits
13. *Advanced Database Systems* — 3 Credits
14. *Constraint Processing and Heuristic Search* — 3 Credits
15. *Big Data* — 3 credits
16. *Advanced Data Analytics* — 3 Credits
17. *Mobile Application Design and Development* — 3 Credits
18. *Biomedical Computation* — 3 Credits
19. *Evolutionary Computation* — 3 Credits
20. *Software Engineering* — 3 Credits
21. *Project* — 6 Credits
22. *Computer Science Graduate Seminar* — 6 Credits

Experiential Learning

One of the cornerstones of this programs is the opportunities provided to students to engage in experiential learning, which will help students build confidence and gain experience in the field prior to entering the workforce. The program is structured so that real-world problems are embedded throughout the program (in the Computer Science Graduate Seminar course and throughout the elective courses). Additionally, students have the opportunity to complete CSCI 591- Project (listed above). This course provides real-life software development experience working by applying classroom learning in a real work context. Students work with an industry or academic partner and develop a computing a solution to a real-world problem. Students are responsible to manage the project from development to execution to presentation to the client and final review.