COSC 4P75
Compiler Construction
2011-12

Course Description

COSC 4P75 is an introduction to compilation and the art of compiler construction. The primary objective is that the student, upon successful completion of the course, will be able to craft a compiler for a Java-like language. Students will develop a complete working compiler for a small Java-like language using recursive-descent parsing.

Instructor

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Text

Objectives

Upon successful completion of this course students will be able to:
- describe the compilation process and its phases
- explain the principles of language translation including lexical, syntactic and semantic analysis and code generation
- apply object-oriented techniques to a single-person, large-scale project (such as a compiler)
- develop a compiler for a small Java-like language using recursive descent parsing

Software

Students may use any Java development environment they choose as long as it can produce java .class files executable from the command line. Generated code will be tested using the Jamal interpreter.

Marking Scheme

Lexical Analysis (Oct. 11 @ 12:00 noon)	20%
Syntactic Analysis (Nov. 7 @ 12:00 noon)	30%
Semantic Analysis (Dec. 5 @ 12:00 noon)	30%
Code Generation (Jan 16, **2012** @ 12:00 noon)	20%

Notes

- As part of Brock University's commitment to a respectful work and learning environment, the University will make every reasonable effort to accommodate all members of the University community with disabilities. If you require academic accommodations related to a permanent disability to participate in this course, you are encouraged to contact the Student Development Centre Services for Students with Disabilities (4th Floor Schmon Tower ext. 3240) and also to discuss these accommodations(s) with the professor/instructor.
- Assignments are submitted electronically to the course drop box and on paper to the instructor (or designate) and returned in class.
- Assignments are due at the times specified above. Late assignments will only be accepted upon pre-approval by the instructor, and may be subject to a penalty.
- Assignments will be carefully examined regarding plagiarism. Cases of suspected plagiarism will be dealt with according to the University regulations and Departmental procedures. MOSS (Measure Of Software Similarity) will be used to electronically compare assignments for the purpose of detection and prevention.
- Consideration regarding illness for assignment submission will only occur if accompanied by the completed Departmental Medical Excuse form. Forms must be submitted within 3 working days of return to study as indicated on the form.
- Nov. 4th is the last day for voluntary withdrawal without academic penalty, 15% of the final grade will be available to students by Oct. 28.
- **Note that assignment 4 is due at the beginning of the winter term. Students should recognize that this may have impact on their studies in winter term.**

Course Outline

Dates	Topic
Sept 9, 12	Introduction, compilation, syntax & semantics, compiler organization
Sept 16, 19	Lexical analysis
Sept 23, 26, Oct. 3[1], 7	Syntactic Analysis
Oct 14[1], 17, 21, 24, 28, 31	Semantic Analysis
Nov 4, 7, 11, 14, 18, 21[2]	Code Generation

[1]   There are no lectures Sept. 30 and Oct. 10 (Thanksgiving)
[2]   The final week (Nov 25–30) will be reserved for project development