COURSE DESCRIPTION

<table>
<thead>
<tr>
<th>Dept., Number</th>
<th>CS 4352</th>
<th>Course Title</th>
<th>Compilers and Interpreters</th>
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<tbody>
<tr>
<td>Selected Elective</td>
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<tr>
<td>Semester hours</td>
<td>45 hours + 21 lab hours</td>
<td>Course Coordinator</td>
<td>Luc Longpré</td>
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Current Catalog Description

The structure of compilers and interpreters: lexical syntax and semantic analysis, formal description of programming languages, parsing techniques, intermediate languages, optimization and code generation.

Textbook:


Course Outcomes:

**Level 3: Synthesis and Evaluation:**
Level 3 outcomes are those in which the student can apply the material in new situations. This is the highest level of mastery.

On successful completion of this course, students will be able to:

1. Lexical analysis (scanning)
2. Symbol table definition & manipulation including one and two pass updates.
3. lex and yacc to generate a basic parser
4. 

**Level 2: Application and Analysis:**

Level 2 outcomes are those in which the student can apply the material in familiar situations, e.g., can work a problem of familiar structure with minor changes in the details. Upon successful completion of this course, students will be able to:

1. Parsing
   a. left-right, top-down, bottom-up algorithms
   b. generation of parse tables including SLR(1) & LL(1)
2. Stack frame allocation
3. Code generation
4. lex and yacc (or flex and bison) utilities vis-à-vis theofy

**Level 1: Knowledge and Comprehension**

Level 1 outcomes are those in which the student has been exposed to the terms and concepts at a basic level and can supply basic definitions. On successful completion of this course, students will be able to:

1. Language translation systems
   a. code generation by tree walking
   b. optimization techniques
2. Type-checking algorithms
3. Basic advanced compiler optimizations including data dependency analysis, loop fision and loop fusion, cache optimization, predication and speculation
Student Outcomes:
Not applicable

Prerequisites by Topic:
CS 3350 with a grade of "C" or better.