

## CSC 306 MIDTERM STUDY GUIDE

PROFESSOR GODFREY MUGANDA

Midterm will cover everything we have learned since the beginning of the term. Make sure you refer to the study guide for the week 3 quiz as well.

There will be questions that cover principles of language description and implementation.

Concepts involved in lexical analysis: lexemes, tokens, how to design and implement a lexical analyzer. Logic for recognizing different types of tokens, such as identifiers, strings, numbers, and others.

Techniques for using tables and maps to distinguish reserved words from identifiers.

Skipping single line and multi-line comments in lexical analysis.

Principles of parsing: context free grammars. Be able to define a context free grammar and explain the role of the various parts of the grammar in language description: terminal symbols, Non-terminals, the Start symbol, productions, etc.

Object language and object symbols, Metalanguage and meta-symbols.

The use of { and } and [ and ] in EBNF to describe repetition and option.

Sentences and sentential forms.

First symbols of strings and Follow symbols of non-terminals.

Parsing, derivations, and parse trees. Top-down and bottom-up parsing.

Recursive descent parsing: how to write a recursive descent parser.

Other topics: processing command-line arguments in C++, opening and reading files.