Text:  

*Introduction to Compiler Construction*

Thomas W. Parsons, Computer Science Press

*Unix Programming Tools: lex & yacc*

O'Reilly & Associates, Inc.

Reference:  

*Compilers: Principles, Techniques, and Tools*

A. Aho, R. Sethi, and J. Ullman, Addison Wesley

Grading:  

Programming project spread over the semester and lab assignments 50 %  
Homework assignments 5 %  
2 75-minute Midterm Exams (Closed book and note) 30 % (15 % each)  
Final Exam (Open book and note) 15 %

Topics:  

This course addresses some of the theoretical and practical issues which arise in the design of compilers. We shall make extensive use of the Unix tools LEX and YACC to implement a compiler for a fairly simple subset of PASCAL. Handouts describing the desired implementation and the schedule for completing various components of the final program will be provided during the semester.

Academic Integrity:  

The official George Washington University Code of Academic Integrity can be accessed online at http://www.cs.seas.gwu.edu/academics/integrity.html.
Course Outline (Tentative)

**Topics**

1. Introduction
2. Lexical Analysis: Finite State Automata, Regular Expressions, Application to Lexical Analysis
3. Syntactic Analysis I: Grammars, Top-down Parsing, Predictive Parsing
   *Midterm Exam 1*
4. Syntactic Analysis II: Bottom-up Parsing, LR Parsing
   *Midterm Exam 2*
5. Semantic Action and Syntax Directed Translation
6. Intermediate Code Generation: Syntax Tree, Bottom-up, Top-down Translations, Type checking
7. Memory Use: Symbol Table, Run-Time Memory Management (*)
8. Optimization
9. Final Code Generation