

**CS 544 Compilers Theory and Design
Spring 2008 by Guangming Xing**

Lecturer:	Guangming Xing	
Office:	TCCW 126B, x8848, Guangming.Xing@wku.edu	
URL	http://www.wku.edu/~Guangming.Xing/wku/cs544	
Office	TR 13:00 to 14:00	
Hours:	W 09:30 – 12:00 13:00 to 15:30	
Text:	<i>Compilers. Principles, Techniques, and Tools</i> by Alfred V. Aho, Ravi Sethi, Jeffrey D. Ullman, Addison-Wesley 2007, isbn: 0-321-48681-1	
Grading:	Test I and II:	150
	Final:	300
	Programs:	400
Grading	900 – 1000	A
Scale:	800 – 899	B
	700 – 799	C
	600 – 699	D
	below 600	F
Exam dates:	Test I	Feb 28, 2008
	Test II	April 10, 2008
	Final: refer *	

* <http://www.wku.edu/Dept/Support/AcadAffairs/Registrar/spring/finals.html>

Course Description:

1. In this class the students will study the principles of compiler design and implementation. We will concentrate on the organization of a simple but complete compiler, including the initial phases of a typical front-end. We will begin with scanners, then go on to various parsing techniques, type checking, syntax-directed translation, and code generation. We will also talk about symbol tables, error recovery and runtime systems. Discussions will include compiler compilers (scanner and parser generators), as well code generation and optimization.
2. Each student is expected to design and implement a simple compiler (the details will be discussed later). The programming project will be split into a few parts to make the development a large program manageable.
3. Each student is expected to do his/her own work. You are not allowed to work in teams. All suspected cases of academic dishonesty will be handled in strict accordance with department and university policy. The grade of X (incomplete) is reserved for special cases only, such as a serious illness, and will be decided on individual basis.

About the Programming Assignment:

Programming assignment is an important part of the course. We will have four phases: lexical analyzer, syntax analyzer, symbol table and semantic analyzer, and final code generation.

You are asked to implement an Object-C (a modified version of C++ language) compiler. There are four phases in our programming. For each phase, you will be given a prototype of your implementation (the headers of the interface functions), and the test files one week before the due date the project. Your project will be evaluated based on the result of the test files and organization of your program. Documentation and presentation of the code consist of 30% of the project grade.

Course Policy:

1. Students must attend the class regularly and on time. Three or more unexcused absence and lateness will result in your letter grade lowered by 1.
2. No late work will be accepted unless with previous permission from the Instructor.
3. If the instructor is late, the students must remain in the class orderly working (studying) until the instructor arrive or until the class is dismissed officially by a person of authority.
4. No food or drink is permitted in the classroom.
5. No mobile phone usage in the classroom. Phones should be on **OFF** position when you enter the classroom.
6. The students are responsible for turning in the homework and attend the exams on time even he/she misses a class. If you can't attend the exam, you must get permission from the instructor **FIRST**, **AND** you must have documented excuse.
7. Homework and project must be done by individual effort. Plagiarism and other forms of academic dishonesty will result in F for the course. Copying code from other students or the Internet is not allowed.
8. You should be able to explain your code to your instructor.

The following two paragraphs are mandated by Western Kentucky University:

In compliance with university policy, students with disabilities who require accommodations (academic adjustments and/or auxiliary aids or services) for this course must contact the Office for Student Disability Services in DUC A-200 of the Student Success Center in Downing University Center.

Please **DO NOT** request accommodations directly from the professor or instructor without a letter of accommodation from the Office for Student Disability Services.