

CS5363: Programming Languages and Compilers

Class homepage: www.cs.utsa.edu/~qingyi/cs5363

Class Schedule: MW, 5:30-6:45pm BB 3.04.18

Final Exam Schedule: Dec 12 (Mon) 5:00-7:30pm

Instructor: Qing Yi (qingyi@cs.utsa.edu)

Office: SB 4.01.30 **Phone:** x5671

Office Hours: Mon:4-5pm and 7-8pm; by appointment

Textbook	<u>Engineering a Compiler</u> by Keith Cooper and Linda Torczon, Morgan-Kaufmann, 2011. ISBN: 978-0-12-088478-0
Reference Books	<u>Programming Language Pragmatics</u> , by Michael Scott, Second Edition, Morgan Kaufmann Publishers, 2006
Overview	This class is a study of programming languages with an emphasis on their implementation. Topics include lexical analysis, language syntax, control structures, the binding of names, procedures, and their implementation in compilers. An emphasis will be put on compiler analysis and optimizations to improve the quality of automatically generated machine code.
Class Objective	Students will study implementation techniques for modern programming languages and learn how to build modern compilers. Additionally, students will learn important algorithms and data structures used to automatically improve the quality of translated machine code, while gaining experience in implementing significant algorithms.
Class Website	www.cs.utsa.edu/~qingyi/cs5363 Check for class handouts and announcements.
Prerequisites	CS 3233 and CS 3343; Programming skill in C/C++/Java.
Grading	25%: projects; 20% homeworks and exercises; 50% midterm and final exams; 5% Problem solving
Requirements	By the end of the class, you should have sufficient understanding of the fundamental theories, basic implementation skills, as well as advanced analysis and optimization techniques in compilers. You will be required to work on regular assignments, including several class projects which implement various components of a compiler. To improve your problem solving skills, a challenging problem will be posted every other week, and you have up to two weeks to submit solutions to these problems. These problems do not count as regular homework assignments as they will require significant amount of independent thinking and problem solving skills, and their solutions will not be covered in classes. Your grade

on solving these problems will constitute only 5% of your overall grade for this class. You are encouraged to attempt at solving these problems as they are given as exercises to stretch your mind and practice becoming an independent researcher.

Attendance

You are responsible for the presented materials and assigned readings in class. Please refrain from distractive behavior in class, such as side conversations and cell phones/pagers/etc. Please turn off your cell phones/pagers before the beginning of each class.

Collaboration Policy

You are expected to work on all the assignments for this course individually. It is acceptable to ask others (the instructor or other students) for help, and encouraged to discuss general problem-solving strategies. However, you must work on your assignments independently and must indicate in your assignments any assistance you have received. Any assistance received that is not given proper citation may be considered cheating. In any event, you are responsible for understanding and being able to explain all statements in your homework and exam solutions.

Email Policy

You are encouraged to use the class discussion forum linked at the class web site to post questions about lectures, homeworks and course organization. The instructor will monitor the forum and post answers that the entire class can see. If your message fails to receive a response in the forum, you may also redirect the message via email to the instructor. Always leave a reasonable time period for your question to get answered. Last minute questions (those sent the night before homeworks are due) may not be answered in time.