

COP5622 Advanced Topics in Compilation  
General Information  
Fall 2007

Instructor: David Whalley  
Office: 259 Love  
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Prerequisites: COP5621 Compiler Construction (or permission of instructor)

Office Hours: 9:30am-11:00am Monday, Wednesday, Friday

Objectives: To learn the techniques used to implement a core set of compiler analyses and optimizations.  
To obtain an introduction to numerous types of compiler optimizations that are currently being used.

Class Homepage: The class home page is at <http://www.cs.fsu.edu/~whalley/cop5622.html>. The page will contain a variety of information, which will include the syllabus, schedule, papers, and assignments.

Assignments: Each of you will be assigned programming projects involving low-level compiler analysis and optimizations. Assignments turned in after the due date, but by the beginning of the next scheduled class will be penalized 10%. Assignments will not be accepted that are more than one class period late. There will also be recent papers on compilers that you will be assigned to read and present.

Grading: At this time I do not plan on having any exams. If it appears that the class is not participating in discussing the course material, then I reserve the right to give exams to acquire the attention of the students. Otherwise, grading will be based only on class participation, presentation of papers, and performance on the assigned projects.

Attendance and Punctuality: Roll will not be taken, but you are responsible for all material presented in class. Your grade will be partially based on class participation and one cannot participate without attending class. If you have some unavoidable conflict that will not allow you to attend a particular lecture, then inform me about the conflict in advance. It is sometimes possible with a small class to reschedule a lecture for a different time or day.

Overview of Course: The topics covered in this course will involve code generation, analysis, and optimizations. The course will be structured in the following manner:

1. lectures on code generation, analysis, and optimizations
2. student presentations of interesting papers involving compilers
3. presentations of my recent research

To help illustrate how optimizations are accomplished, we will be examining in detail a compiler system, *vpo* (Very Portable Optimizer), that has been shown to produce production-quality code.

The programming projects will involve using a simple framework that I have developed for performing analysis and optimizations at the SPARC assembly level. Students in the class will present papers that will be assigned and I will also present some papers involving my own research.

Please advise the instructor of this class at your earliest convenience (minimum of five working days) if you have a disability that will require a reasonable accommodation for any of the activities in the course schedule.