Course Information

Time and place
Place: HRBB 126
Time: Mo Wed Fr 2:20pm – 3:35pm
Pre-requisite: CPSC 434 or equivalent
   Good knowledge of C++

Course personnel
Instructor: Lawrence Rauchwerger
   Office HRBB 425E
   email: rwerger
   Phone 979 845 - 8872
   Hours MW after class
Grader: Dr. Nathan Thomas
   Office HRBB 415B
   email: nthomas@cse.tamu.edu

Course Materials
Lecture Notes: parasol.tamu.edu/people/rwerger/Courses/605
News group Piazza
Project Description MiniPolaris:http://parasol.tamu.edu/people/rwerger/MiniPolaris.html/

Text Book


Additional readings will be made available.
**Tentative Grading**

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Pass/Fail%</th>
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<tbody>
<tr>
<td>Midterm:</td>
<td>25%</td>
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<tr>
<td>Final:</td>
<td>25%</td>
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<tr>
<td>Project:</td>
<td>50%</td>
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There will be written assignments. In general, no late assignments are accepted. Projects will represent the stepwise implementation of optimizations within MiniPolaris restructuring compiler.

**Note:** No Incomplete grades option at the end of the semester will be available. Therefore students are expected to finish their programming assignments during before the semester ends.

**Tentative Topics**

1. Introduction. Overall compiler organization
   Overview of optimizations
2. Basic block code generation and optimization
5. Intro to Interval Analysis
6. Loop optimizations (scalar).
   - loop invariant expression
   - strength reduction
8. Static single assignment (SSA) and its use in loop optimizations.
10. Effectiveness of compiler transformations.

**Project Collaboration Policy**

Students can exchange information about class assignments by asking questions and answering on the news group (piazza). However each project is to be coded individually - No code sharing is allowed and **heavy penalties may result if projects “look similar”**.