Topics from the Final Exam are all from the second half of the semester:

I. Assembly Language programming and our Runtime Environment. I am mostly concerned about the runtime environment: what does the caller do and what does the callee do for a call. See the class notes for March 14, 18, and 28, April 1, 4. The March 14 notes also point to a handout called “The Runtime Environment”.

II. The heap, dynamic memory allocation, and Garbage Collection. See April 8, 11

III. Compiling Object-Oriented languages. See April 13

IV. Dataflow and Live Variable analysis See April 15

V. Register Allocation (which uses live variable analysis) See April 18.

VI. “Simple Optimizations” such as constant folding, loop unrolling, and strength reduction. I won’t ask you to implement them, but you should know what they are and why they matter. See April 22

VII. SSA (Static Single Assignment) form. See April 27.