Outline for April 15, 2004

1. Policy
   a. Policy languages: high level, low level
2. Bell-LaPadula Model (security classifications only)
   a. Go through security clearance, classification
   b. Describe simple security condition (no reads up), *-property (no writes down), discretionary security property
   c. State Basic Security Theorem: if it's secure and transformations follow these rules, it's still secure
3. Bell-LaPadula Model (security levels)
   a. Go through security clearance, categories, levels
4. Lattice models
   a. Poset, ≤ the relation
   b. Reflexive, antisymmetric, transitive
   c. Greatest lower bound, least upper bound
   d. Example with complex numbers
5. Bell-LaPadula Model
   a. Apply lattice work
      i. Set of classes SC is a partially ordered set under relation ≤ with GLB (greatest lower bound), LUB (least upper bound) operators
      ii. Note: is reflexive, transitive, antisymmetric
      iii. Examples: $(A, C) \leq (A', C')$ iff $A \leq A'$ and $C \subseteq C'$;
           $LUB((A, C), (A', C')) = (\max(A, A'), C \cup C')$, $GLB((A, C), (A', C')) = (\min(A, A'), C \cap C')$
   b. Describe simple security condition (no reads up), *-property (no writes down), discretionary security property
   c. State Basic Security Theorem: if it's secure and transformations follow these rules, it's still secure
   d. Maximum, current security level
6. Example: DG/UX UNIX
   a. Labels and regions
   b. Multilevel directories