Logic Topics.

(1) Structures.
   (a) The real numbers
   (b) Real vector spaces
   (c) Metric spaces
   (d) A universe of sets

(2) Alphabet of symbols.
   (a) variables: $x_0, x_1, x_2, x_3, \ldots$
   (b) logical symbols
      (i) logical connectives: $\wedge, \vee, \neg, \rightarrow, \leftrightarrow$.
      (ii) quantifiers: $\exists, \forall$
   (c) nonlogical symbols: operation symbols, predicate symbols (including $=$).
   (d) punctuation: parentheses, commas.

(3) Formulas and sentences.
   (a) terms
      (i) Polish notation
      (ii) unique readability
      (iii) parse trees
   (b) atomic formulas
   (c) formulas
   (d) quantifiers, scope of a quantifier, free and bound variables
   (e) sentences, complexity of quantification

(4) Meaning
   (a) Interpreting the nonlogical symbols
   (b) The effect of logical connectives on predicates
   (c) Logical equivalence. Prenex form.

(5) Semantic entailment.

(6) Proof.

(7) The Completeness Theorem.