Course Flow

The following is an attempt to layout the flow of the course for this quarter. This is a rough estimate and should be treated as such.

Introduction and Overview
  Proving vs. Testing
  Consistency vs. Correctness
  Total Correctness vs. Partial Correctness
  Current Government and Industrial Interest in Verification

Program Proofs
  Assertions, Loop Invariants, Induction

Axiomatically Defined Languages
  Verification Condition Generation
    Symbolic Execution
    Backwards Substitution

Abstract Data Types
  Hoare-like Axiomatic Specifications
  Algebraic Specifications

Introduction to ASLAN and the ASLAN Verification System

Description of Other Verification Systems and Comparison of the Different Approaches
  FDM
  Larch
  ASTRAL
  Z
  VDM

Special Verification Topics
  Temporal Logic
  Concurrent Processes
  Realtime Specifications

Applications of Verification Technology
  Secure Operating Systems
  Network Protocols
  Encryption Protocols

Problems and Limitations of Formal Verification