ProofSpace: Sample Schedules

Three 50-Minute Meetings/Week

In this configuration, there are many options. Students might not watch videos every night, or students might spend more time coming up to the board and presenting problems in class. The instructor has a lot of freedom here. One suggestion is as follows (Suppose the class meets Monday, Wednesday, and Friday):

1. For each Monday, students watch one section of videos and complete the quiz before class. In class on Monday, students work on the discussion problems. Students work at home on the evaluated problems.
2. For each Wednesday, students watch one section of videos and complete the quiz before class. In class on Wednesday, students work on the discussion problems. Students work at home on the evaluated problems.
3. On Fridays, students continue working on the problems from Monday and Wednesday.
4. On the first day of each week, students hand in their solutions to the evaluated problems from *both* of the previous week's problem sets.

We suggest using 3 midterm exams and one final exam. There are many ways to structure these – most of the units can be broken apart half-way through if desired. Be careful that students have received feedback on any given topic (i.e. their problem sets are graded) before assessing it.

3 Day, 3 Midterms Format – 13 Weeks

1 – Introduction
2 – Statements, Connectives, and Truth Tables
3 – Conditionals

4 – Basic Proof Writing; Logical Identities
5 –Number Systems, Quantifiers and their Negations
6 – More in-class work

7 – Unraveling Definitions; Direct Proofs and Counterexamples
8 – Proofs by Contrapositive and Contradiction
9 – More in-class work

10 – Review for first exam
11 – Exam One – Proofs and Disproofs
12 – Proving Implications with Disjunctions (Cases)

13 – Induction (Day 1)
14 – Induction (Day 2)
15 – Introduction to Sets (Elementhood, Empty Set, Subset, Power Set)

16 – Proving Set Relations (Union and Intersection, Element Chasing, Set Equality, Disjointness)
17 – More on Sets
18 – Set Operations (Cartesian Product, Set Difference, Complement), Identities, and Set Algebra

19 – Review
20 – Exam Two – Cases, Induction, and Sets
21 – Indexed Sets

22 – More in-class work on sets
23 – Functions and Functions on Sets
24 – Injections, Surjections, and Bijections

25 – Inverses and Compositions
26 – More functions
27 – Review

28 – Exam Three – Set Operations and Indexed Sets, Functions
29 – Cardinality
30 – Cardinality

31 – Equivalence Relations
32 – Equivalence Classes
33 – More Equivalence Classes

34 – Extra Topics
35 – Extra Topics
36 – Review

37 – Final Exam (Emphasis on Cardinality and Relations)