

INSTRUCTOR GUIDE

THE CURVE

A six-episode animated companion to EECS 203 / introductory discrete mathematics — for instructors, TAs, tutoring centers and study groups

Most of the class is failing EECS 203, and Professor Hale says she'll curve the exams. Five strangers thrown together as a study group — Jaylen, who's never failed anything; Bryce, who's secretly failing everything; Anika, who freezes on exams; Marisol, who works overnights; and Yusuf, who shares everything — have to learn logic, proofs, infinity, induction, counting and graphs together. To pass, they have to stop competing, stop lying about where they stand, and prove it.

Why this, why now

Discrete math is where many CS students first meet proofs — and where many first fail. The Curve teaches the real content picture-first, 3Blue1Brown style, inside a story about the pressure of a curved course, and gives every episode a homework set with full solutions.

6

animated episodes · 39 minutes total

6

hands-on exercises with templates
students keep

18

proofs across the season: worked,
built together, and on your own

WHO IT'S FOR

Students in (or about to take) EECS 203 or any first course in discrete mathematics, and the instructors, TAs, tutoring centers and study groups who support them — ages 16 and up.

LEARNING OUTCOMES

- Construct direct, contrapositive, contradiction, cases and induction proofs using one framework
- Read and build truth tables; negate quantified statements
- Show two sets have the same size with a bijection; explain Cantor's diagonal
- Count with the product rule, combinations, pigeonhole and stars and bars
- Use degrees, Euler paths and coloring to reason about graphs

WHAT'S IN THE BOX

Six episodes

6–9 minutes each, animated drama-comedy with 3Blue1Brown-style lessons.

Workbook + homework

Per episode: the one sentence, words, worked proofs, a proof template, common mistakes, and a 10-problem homework set. Full answer key.

18 proofs

Three per episode: one worked, one built by the group, one for the viewer.

The episode guide

#	EPISODE	THE ONE SENTENCE	LENGTH
1	Knights and Knaves	An if-then is a promise. It's only broken when you do your part and they don't do theirs.	8:41
2	Proof by Contradiction	A proof is an argument nobody can wiggle out of. Checking examples is a feeling , not a proof.	7:15
3	Some Infinities Are Bigger	Two sets are the same size when you can pair them up perfectly, with nobody left out.	5:59
4	The Next Step	Induction: get on the first step, and prove that from any step you can reach the next one.	6:03
5	Count Me In	Count the choices one step at a time, multiply, and divide out the orders that don't matter.	5:48
6	The Curve	A graph is dots and lines. Count the ends of the lines and you learn what's possible.	5:33



EPISODE 1 · 8:41

Knights and Knaves



EPISODE 2 · 7:15

Proof by Contradiction



EPISODE 3 · 5:59

Some Infinities Are Bigger



EPISODE 4 · 6:03

The Next Step



EPISODE 5 · 5:48

Count Me In



EPISODE 6 · 5:33

The Curve

Watch the season: <https://www.youtube.com/playlist?list=PLA7Y3OruxDgg>

Where it fits

- A companion to EECS 203 / Rosen chapters 1, 2, 5, 6 and 10
- Discussion-section warm-ups (watch together, then do the homework in groups)
- Summer bridge or pre-semester prep for incoming CS students

DELIVERY OPTIONS

Watch	One episode (6–9 min), pausing at every PAUSE card.
Work	Homework in groups of 3–5, five marker colors (15–25 min).
Check	Answer key, then one Spot the Lie presented to the room (10 min).

ASSESSMENT IDEAS

- The challenge problem from each episode, written up with the Proof Framework
- A Spot the Lie written by students for each other
- Before/after confidence check on writing a proof from scratch

REAL EECS 203 CONTENT, PICTURE FIRST

Every episode covers a unit of a standard first course in discrete mathematics (logic, proofs, sets and functions, induction, counting, graphs), with problems in the style of the course textbook (Rosen, **Discrete Mathematics and Its Applications**). Every solution is worked and checked. The story and its characters are fiction; the math is real.

RUN A PILOT

Use it with a discussion section or tutoring group and tell us what landed — we'll share discussion slides and extra problem sets.

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