Ever want to fix up that old piano at home? With a little bit of engineering and physics training, one can make a huge difference. I’ll show you how to transform a $50 piano from the thrift store into something playable again. (I actually fixed and tuned my home spinet this past summer – and it came out pretty well according to my daughter who plays.)

Introduction

1. Modes on a wire; where the hammer hits; timbre
2. Fourier transform (the engineer’s best friend): forward, reverse, fast
3. Octaves and mod 2 equivalent notes
4. Just Temperament (why certain notes sound good together; psychoacoustics?)
5. Circle of Fifths (and the Wolf fifth)
6. Number of notes per octave (define ‘cent’)
7. Equal Temperament (why Western cultures are so hyper)
8. Self-inharmonicity of a single real wire (Spinet to Concert Grand)
9. Stretch tuning

Doing it!

10. Pianos really ARE made to come apart (and go back together)
11. Action (removal and regulation)
12. Tuning: Pins, Unisons, Octaves, Stretch (where the ‘art’ comes in)
13. What you CAN’T play with this tuning... (microtonal compositions)
    (if there’s time and interest)
14. Drum Tuning (demo with a floor tom)
15. Relative pitches of your kit