Summer classes were 110’ long

5/28 no sound

 models in physics: Mechanics vs. Electromagnetism

5/29 sound good, ch.21

E1, E2 introduce the “cross”: force, energy, field, and potential – for point charges

 hedgehogs

 example: find unknowns for forces from point charges

 Zoom version of lecture has full ending

5/30 sound good, occasionally phasing out, ch.21

E3, E4 video: Coulomb force with discussions

 conceptual example: electric field point charges

 more on the elevation map analogy of the field

 example: find unknowns for landscape due to forces from point charges, use component equations

 early ideas leading to Gauss’s law, ch.22

5/31 sound good, but phases out for short times occasionally

E5, E6 example: find unknowns due to landscape from fields

 ch.22 Gauss’s Law conceptual, “poking” and “teasing”

 example: cube and flux, turn cube: student work flux

 constructing smart Gaussian surfaces; uniform fields

 E(r) graphs for conducting and insulating spheres

 spherical charge distributions

 example: field of a wire

 concept fringe fields, charge densities in 1,2,3 dimensions

 example: sheet (mistake in end cap area: p r2 not 4pr2)!

6/3 sound good, but phases out for short times occasionally

E7, E8 *fair warning: this is a difficult lecture, plan to spend twice the time of what you normally spend*

 example: insulating sheet

 example: two concentric conducting shells (make sure you understand all the conceptual steps)

 example: non-uniform charge distribution

 example: 21.10 field of a ring at its symmetry axis (last bit missing: integral dq = Q total)