

# THE TELEPHONE MUSEUM

## Basic Electronics and Telephony Course Syllabus

1. Introduction to electricity
  - a. Atoms and their electrons
  - b. How electrons are generated
  - c. How electrons create work
2. Discussion of Ohm's Law
  - a. Who was Georg Ohm and why is he important?
  - b.  $I = V/R$
  - c. How electricity works in an analogue telephone
3. Discussion of Digital electronics and telephones
  - a. Harry Nyquist
  - b. Nyquist sample rate and bandwidth
  - c. A to D, and D to A
4. How modern cell phones work
  - a. Comparison to a two-way radio
  - b. Cell towers
  - c. Incorporation of internal computer and memory to store
    - i. Phone numbers
    - ii. Messages
    - iii. Applications
    - iv. Photographs
    - v. Games
    - vi. Music
    - vii. Access to Internet

