

# Physics 2B: Electricity & Magnetism

## Week 1: Electric Charge and Field

VAN DE GRAAFF  
PITH BALLS  
CHARGE TRANSFER RODS AND FUR/CLOTH  
ELECTROSCOPE

## Week 2: Gauss's Law

GAUSS'S LAW WITH 55 GALLON DRUM

## Week 3: Electric Potential and Capacitance

ExB TUBE (use only E part)  
ALUMINUM FOIL CAPACITOR  
BIG CAPACITOR  
CAPACITANCE BETWEEN SPHERES  
PLATE CAPACITOR  
LEYDEN JAR  
JACOB'S LADDER

## Week 4: Current and Resistance

CHEMICAL BATTERY

## Week 5: Circuits

SERIES AND PARALLEL CIRCUITS (OHM'S LAW)  
RC TIME CONSTANT

## Week 6: Magnetic Fields, currents

2D MAGNETIC FIELD VIEWER  
3D MAGNETIC FIELD VIEWER  
FERROFLUID  
ExB TUBE (with bar magnet & with coil)  
FORCE BETWEEN PARALLEL WIRES

**Week 7: Faraday's Law**

ALUMINUM RINGS ON AC COIL  
SWINGING PLATES IN MAGNETIC FIELD (GIANT VERSION)  
MAGNET IN METAL TUBE  
MAGNET WITH COIL

**Week 8: Alternating Currents**

MOTOR AND GENERATOR  
LRC CIRCUIT  
CURIE'S LAW: CANADIAN QUARTERS

**Week 9: Maxwell's Equations**

SLINKY  
WAVE MACHINE

**Week 10: Electromagnetic Waves**

SPECTRA TUBE WITH DIFFRACTION GRATING