AP Physics 2 Syllabus

**Teacher:** Mr. D. McPhee **Email:** dave.mcphee@sd41.bc.ca

**Website:** mcpheesics.weebly.com **Text:** Cutnell and Johnson, Physics 9th Ed.

*This syllabus is a LOOSE GUIDELINE. The order of topics may change, topics may be combined. The list below is how I foresee things, but the class is a dynamic system and, as such, by definition, change occurs.*

1. Physical Optics

* The electromagnetic spectrum
* Interference of light
* Single and dual slit patterns and diffraction gratings
* Thin film interference

2. Fluids (Statics and Dynamics)

Fluid Statics

* Pressure and Depth (Pascal’s Principle)
* Buoyancy (Archimedes’ Principle)

Fluid Dynamics

* Fluid flow (The Bernoulli Equation)

3. Thermodynamics

Temperature and Heat

* Definitions of temperature, thermal energy and heat
* Mechanical equivalence of heat

Kinetic Theory and Ideal Gases

* Ideal gas law
* Thermal Processes
* Heat engines and Heat Pumps

4. Electrostatics

Fields and Forces

* Coulombs Law
* Electric fields, including point charges and parallel plates

Potential and Energy

* Electrical energy
* Electrical potential and potential difference

5. Electric Circuits

* Simple DC circuits including resistors and capacitors

6. Magnetism and Electromagnetism

Magnetism

* Basic introduction to magnetism and permanent magnets

Electromagnetism

* The strange and wonderful interplay between electricity and magnetism
* Magnetic fields and forces
* Electromagnetic induction

7. Atomic Physics, Nuclear Physics and Quantum Physics

*A look at some 20th century Physics and the wacky world of the sub-atomic!*

Atomic Physics

* Basic Atomic structure
* Atomic energy levels and spectra

Nuclear Physics

* Nuclear reactions and decay
* Mass energy equivalence

Quantum Physics

* Black Body Radiation
* Photoelectric effect, Compton scattering, x-ray production, lasers