

Terms:

Force
Momentum: linear and angular
Energy
Kinetic energy
Velocity
Speed
Acceleration
Support force (normal force)
Potential energy (gravitational)
Work
Conserved quantity
Mechanical advantage
Angular velocity, acceleration
Torque
Center of mass
Moment of inertia
Friction: static and sliding
Power
Impulse
Spring scale
Spring constant
Equilibrium
Coefficient of restitution
Inertial frame of reference
Uniform circular motion
Centripetal acceleration
“Centrifugal force” [fictitious]
Pressure
Buoyant force,
Archimedes’s principle
Ideal gas
Incompressible fluid
Steady-state flow
Bernoulli
Viscosity
Turbulent flow
Laminar flow
Vortex
Reynolds number
Boundary layer
Induced drag
Lift
Stalling
Thrust

Speed of sound, light
Shock wave
Orbit
Heat, thermal equilibrium
Conductivity: thermal, electrical
Convection
Radiation
Spectrum of electromagnetic radiation
Blackbody spectrum
Emissivity
Coefficient of volume expansion
Sublimation
Entropy
Heat engine
Internal combustion engine
Engine efficiency
Electrostatic force
Electric charge
Corona discharge
Electrically polarized object
Photoconductor
Insulator, semiconductor, conductor
Bands: conduction, valence
Electric circuit
Open vs. closed circuit, short circuit
Resistance, capacitance, inductance
Current: ampere
Transformer: step-up, step-down
Primary, secondary voltage, current
Magnetic flux
Ferromagnet
Magnetic domain
Tape bias
Diode
Radio waves
Tank circuit
Polarization of electromagnetic wave
Amplitude, frequency modulation
Phosphor
Lorentz force
Microwaves
Visible light
Index of refraction
Refraction
Reflection

Interference: constructive, destructive
In-phase, out-of-phase
Rayleigh scattering
Dispersion
Electron state: ground, excited
Radiative transition
Fluorescence
LASER
Spontaneous vs. stimulated emission (of radiation)
Coherent vs. incoherent light
Converging lens
Real image
Focal length
Aperture, f-number
Depth of focus
Depth of field (not in book)
Shutter speed
Exposure
Pixel
Binary notation
Additive primary colors: RGB
CD, DVD
Diffraction limit
Total internal reflection
Heisenberg uncertainty principle
Radioactive decay
Tunneling
Nuclear fusion
Chain reaction
Half-life
Critical mass, supercritical mass
Gamma rays
CT or CAT scan (computer-[assisted] tomography)
Magnetic resonance imaging (MRI)

Laws:

Newton's 1,2,3: $F = ma$,
Conservation of linear, angular
momentum
Rotational analogues
Ideal gas
Bernoulli
Poiseuille
Universal Gravitation (vs.
Gravitation on earth)
Stefan-Boltzmann
Thermodynamics: 0,1,2,[3]
Coulomb's law
Pauli exclusion principle
Ohm's law
Power = voltage drop x current
Wave speed = wavelength x
frequency
Planck law $E = h f$ (or ν)
Lens

New units and constants:

Newton
Meter
Gravitational acceleration g
Joule
Radian
Pascal
Boltzmann constant
Coulomb, electron charge
Gravitational constant
Ampere
Ohm
Henry
[Farad]
Planck's constant

Comparisons:

Incandescent vs. fluorescent bulbs
Impulse vs. work
AC vs. DC current
Static vs. sliding friction
LASER vs. incoherent light
AM vs. FM
Microwave vs. conventional cooking
Earth vs. moon environments
Laminar vs. turbulent flow
Jets/rockets vs. propellers
Linear vs. rotational motion
Constructive vs. destructive
Interference of waves
Depth of field vs. depth of focus
Digital vs. film photography
Magnetic tape vs. CD