**Mechanics**

1. Motion in one dimension

2. Projectile motion

3. Linear momentum/Impulse

4. Newton’s Laws

a. Uniform circular motion

5. Torque and Rotational Statics

a. Angular momentum/Impulse

6. Conservative Forces/Potential Energy

a. Gravitation

b. Kepler’s Laws

7. Oscillation; force perspective (pendulums and mass on a springs)

a. Oscillation; energy perspective

8. Energy

a. Conservation

b. Work energy theorem

c. Power

9. Temperature and Heat; mechanical equivalent of heat, specific/latent, heat transfer/expansion

**Thermodynamics**

10. Kinetic Model of Gas

a. Ideal Gas Law

11. PV diagrams (first law)

a. Heat engines (second law)

**Fluids**

12. Fluid Statics (pressure, pascal, Archimedes)

13. Fluid Dynamics (Continuity, Bernoulli, Application)

**Waves and Optics**

14. Traveling and standing waves

a. Doppler effect

15. Superposition

a. Interference

b. Diffraction

c. Dispersion

d. E&M spectrum

16. Reflection/Refraction

a. Mirrors

b. Lenses

**Modern Fiziks**

17. Alpha scattering and the Rutherford Model

a. Bohr Model

18. Photons and Photoelectric

a. Wave/Particle Duality

19. Radioactivity and half-life

a. Nuclear reactions

b. Mass energy equivalence

**E&M**

20. Charge/field/potential

21. DC Circuits

22. Magnetostatics

a. Forces on moving charges/current carrying wires

b. Fields from wires

23. Induction

a. E&M Waves

**Review and Practice**

24. Mechanics

25. Thermodynamics and Fluids

26. Waves and Modern Physics

27. E&M

28. Practice AP Test

29. Review Practice AP Test