**Chemistry**

**Course Content Outline**

1. Matter and Energy
2. Properties of Matter
3. States of Matter
4. The gas laws
5. Law of conservation of mass
6. Physical vs Chemical Changes
7. Law of conservation of energy
8. Atomic Structure
9. The Structure of Atom
10. Modern Atomic Theory
11. The Modern Periodic Table
12. Electronic Configuration
13. Naming Chemical Compounds and Balancing Equations
14. Monatomic vs polyatomic ions
15. Writing formula and naming ionic compounds
16. Writing formula and naming covalent compounds
17. Polar covalent bonds and metallic bonds
18. Writing and balancing chemical equations
19. Identifying chemical reactions
20. Thermochemistry
21. Heat of reaction
22. Exothermic and Endothermic reactions
23. Stoichiometry
24. Coefficients in balanced equations
25. Mole ratios
26. Mole-mass conversions
27. Molarity
28. Oxidation-Reduction Reactions
29. Redox reactions
30. Oxidation numbers
31. Balancing Redox reactions
32. Electrochemistry:
33. Electrochemical cells
34. Hydrocarbon Compounds
35. Hydrocarbons
36. Unsaturated hydrocarbons
37. Nuclear Chemistry
38. Radioactivity
39. Rates of Nuclear Decay
40. Fission and fusion