Physics Exam Syllabus

Grades 9-10

1. **Scientific Practices in Physics**
   - Investigable physics questions
   - Variables and controls
   - Measurement and units
   - Formula use with correct units in age-appropriate contexts
   - Data tables and graphs
   - Interpreting motion and trend graphs
   - Physical models
   - Claim-evidence-reasoning
   - Method evaluation, safety, uncertainty, and limitations

2. **Motion and Forces**
   - Distance and displacement
   - Speed and velocity
   - Acceleration at an introductory level
   - Motion graphs
   - Forces and resultant force
   - Balanced and unbalanced forces
   - Gravity
   - Introductory Newtonian ideas
   - Force and motion in everyday and technological systems

3. **Energy and Heat**
   - Energy forms and stores
   - Energy transfer
   - Work and power at an introductory level
   - Efficiency
   - Thermal energy
   - Conduction, convection, and radiation
   - Energy use in systems
   - Everyday and technological applications
   - Energy resources and sustainability links

4. **Waves, Sound, and Light**
   - Wave properties
   - Wave speed idea
   - Sound production and transmission
   - Frequency and amplitude
   - Light reflection
   - Refraction at an introductory level
   - Lenses and image ideas
   - Electromagnetic applications at an introductory level
   - Wave applications in communication, optics, and technology

5. **Electricity and Magnetism**
   - Charge and static electricity
   - Current and voltage
   - Resistance at an introductory level
   - Series and parallel circuits
   - Electrical energy and power
   - Magnets and magnetic fields

- Electromagnets at an introductory level
- Practical electrical systems and safety
- Circuit testing and troubleshooting

6. **Applied and Environmental Physics**
   - Pressure in solids, liquids, and gases
   - Fluids and applications
   - Physics in transport and structures
   - Energy resources and efficiency
   - Physics of climate and Earth systems at an introductory level
   - Technology, safety, and responsible use
   - Evaluating physical claims in everyday and environmental contexts