

**Year Level: 12**                      **Subject: Physics**  
**Semester: 2**

<b>WEEK</b>	<b>TOPIC</b>	<b>LEARNING FOCUS</b>
1	Physical descriptions of waves and electromagnetic radiation	Describe and give evidence for the fact that light is a form of electromagnetic radiation. Qualitatively and quantitatively describe waves and wave motion.
2	Interactions of waves	Qualitatively and quantitatively describe the principles of reflection and refraction. Qualitatively and quantitatively describe the different ways in which waves can interact with each other.
3	Young's double slit experiment	Describe why diffraction is only a property of waves. Qualitatively and quantitatively describe Young's double slit experiment and the variables that affect its results.
4	Area of study 1 (Waves) SAC preparation and SAC	Structure a scientific argument and provide evidence in various ways to support it.
5	The strange contradictions of the quantum universe	Describe the evidence that supports the theory of a particle-like nature of light. Describe the evidence that supports the theory of a wave-like nature of particles.
6	Interactions of light and matter	Calculate and use the momentum of light and matter. Qualitatively and quantitatively describe how matter emits, absorbs and produces light.
7	Area of study 2 (Quantum physics) SAC preparation and SAC	Answer short answer response questions scientifically.
8	Extended investigation preparation	Understand the concepts of the scientific method. Create a plan, using the scientific method, to undertake an extended investigation.
9	Extended investigation execution	Follow, modify and adapt a plan to carry out an extended investigation.
10	Extended investigation report poster	Create a poster to summarise an extended investigation.
11	Unit 3 revision	Revise the Unit 3 concepts and apply them to past exam questions. Complete a Unit 3 Trial exam under exam conditions. Review the Trial Exam in class.
12	Unit 4 revision	Revise the Unit 4 concepts and apply them to past exam questions. Complete a Unit 4 Trial exam under exam conditions. Review the Trial Exam in class.
13 - 15	Revision and past papers	Revise the Unit 3 & 4 concepts and apply them to past exam questions.