Curricular Area: Science		Subject: Physics	
National 4 (SCQF Level 4)	National 5 (SCQF Level 5)	Higher (SCQF Level 6)	Advanced Higher (SCQF L7)
Course Content	**Course Content**	**Course Content**	**Course Content**
Physics: Electricity and Energy - electricity and energy, generation of electricity, electrical power, electromagnetism, practical electrical and electronic circuits, gas laws and the kinetic model. **Physics: Waves and Radiation** - waves and radiation, wave characteristics, sound, electromagnetic spectrum and nuclear radiation. **Physics: Dynamics and Space -** dynamics and space, speed and acceleration, relationships between forces, motion and energy, satellites and cosmology. **Added Value Unit: Physics Assignment** - carry out an investigation using the skills and knowledge you developed in the other three units, on an unfamiliar and/or integrated context produce a written summary of the research and produce the evidence of your research.	**Dynamics** - vectors and scalars; velocity–time graphs; acceleration; Newton's laws; energy; projectile motion. **Space** - space exploration; cosmology. **Electricity** - electrical charge carriers; potential difference (voltage); Ohm's law; practical electrical and electronic circuits; electrical power. **Properties of matter** - specific heat capacity; specific latent heat; gas laws and the kinetic model. **Waves** - wave parameters and behaviours; electromagnetic spectrum; refraction of light. **Radiation** - nuclear radiation.	**Our dynamic Universe -** motion – equations and graphs; forces, energy and power; collisions, explosions and impulse; gravitation; special relativity; the expanding Universe. **Particles and waves -** forces on charged particles; the Standard Model; nuclear reactions; inverse square law; weave-particle duality; interference; spectra; refraction of light. **Electricity -** monitoring and measuring AC; current, potential difference, power, and resistance; electrical sources and internal resistance; capacitors; semiconductors and p-n junctions.	**Rotational Motion and Astrophysics** - kinematic relationships; angular motion; rotational dynamics; gravitation; general relativity; and stellar physics **Quanta and Waves** - introduction to quantum theory; particles from space; simple harmonic motion; waves; interference; and polarisation. **Electromagnetism** - fields; circuits; and electromagnetic radiation. **Units, prefixes and uncertainties** - units, prefixes and scientific notation; uncertainties; data analysis; and evaluation and significance of experimental uncertainties.
How will the course be assessed?	**How will the course be assessed?**	**How will the course be assessed?**	**How will the course be assessed?**
Your work will be assessed by your teacher on an ongoing basis throughout the course. Items of work might include: • practical work - such as experiments • written work - research assignments and reports • projects • class-based exams. You must pass all the units including the practical unit to gain the course qualification.	The course assessment has **two** components **totalling 155 marks**: • Component 1: question paper – worth 135 marks (scaled to 100 towards the overall total) • Component 2: assignment – worth 20 marks (scaled to 25).	The course assessment has **three** components **totalling 175 marks**: • Component 1: question paper 1 (multiple choice) – worth 25 marks (scaled to 25 towards overall total) • Component 2: question paper 2 – worth 130 marks (scaled to 95) • Component 3: assignment – worth 20 marks (scaled to 30).	The course assessment consists of **one** component **totalling 185 marks**: • Component 1: Question paper - worth 155 marks (scaled to 120 towards the overall total) • Component 2: Project - worth 30 marks (scaled to 40).
Career Pathways			
There are many career opportunities connected with Physics including Air Traffic Control, Airline Pilot, Architect, Electrical Engineer, Games Programmer, Prosthetic & Orthotics, Radiographer, Robotics Engineer, Structural Engineer, Telecommunications Engineer & Veterinary Surgeon.			