832 12 PHY — PHYSICS

RECOMMENDED LEVEL OF ATTAINMENT

16 Level 1 credits in Science including four credits in Mechanics (AS90940) and a pass in Year 11 Electricity test, and 12 Level 1 credits in Mathematics including Algebra (AS91027); Tables, Equations and Graphs (AS91028) and Measurement (AS91030).

INTRODUCTION

Physics investigates physical phenomena such as motion, waves, electricity, magnetism and radioactivity and concepts, principles and models to explain these phenomena. It also examines technology, its benefits and its challenges.

FUTURE PATHWAYS

13PHY

SKILLS

- Carry out instructions efficiently
- Use measuring equipment correctly
- Organise, record and interpret information
- Plan and carry out investigations
- Communicate in written and mathematical form
- Work both cooperatively and independently as required
- Solve problems.

NCEA STANDARDS – 12PHY

Not all standards will necessarily be assessed.

	Level	Credits	UE Rdg.	UE Wrtg.	
External					
91170 v2	2	4	no	no	Physics 2.3 - Demonstrate understanding of waves
91171 v2	2	6	no	no	Physics 2.4 - Demonstrate understanding of mechanics
91173 v2	2	6	no	no	Physics 2.6 - Demonstrate understanding of electricity and electromagnetism
Internal					
91168 v2	2	4	no	no	Physics 2.1 - Carry out a practical physics investigation that leads to a non-linear mathematical relationship
91172 v2	2	3	no	no	Physics 2.5 - Demonstrate understanding of atomic and nuclear physics

833 13 PHY — PHYSICS

RECOMMENDED LEVEL OF ATTAINMENT

15 Level 2 credits in Physics including AS91171 Mechanics and AS91173 Electromagnetism; 12 Level 2 credits in Maths including AS91261 Algebra; 91257 Graphs and 91259 Trigonometry.

INTRODUCTION

Year 13 Physics extends and quantifies the phenomena studied at Year 12. Because of the higher levels of mathematics involved, it is strongly recommended that students taking Year 13 Physics also take Year 13 Calculus.

Notes: Entry into first year Physics and Engineering at Canterbury University requires 14 credits of Level 3 Physics and 14 credits of Level 3 Calculus. The University of Auckland requires Achieved grades in all the external standards.

SKILLS

- Carry out instructions efficiently.
- Use measuring equipment correctly.
- Organise, record and interpret information.
- Plan and carry out investigations.
- Communicate in written and mathematical form.
- Work both cooperatively and independently.
- Solve problems.

These skills are identical to those at Year 12, but the nature of the tasks and the equipment requires a greater level of expertise and an understanding of the processing of uncertainties in data and graphs.

FUTURE PATHWAYS

Tertiary study and careers in science and engineering.

NCEA STANDARDS – 13PHY

Not all standards will necessarily be assessed.

	Level	Credits	UE Rdg.	UE Wrtg.	
External					
91523 v2	3	4	no	no	Physics 3.3 - Demonstrate understanding of wave systems
91524 v2	3	6	no	no	Physics 3.4 - Demonstrate understanding of mechanical systems
91526 v2	3	6	no	no	Physics 3.6 - Demonstrate understanding of electrical systems
Internal					
91521 v2	3	4	no	no	Physics 3.1 - Carry out a practical investigation to test a physics theory relating two variables in a non-linear relationship
91525 v2	3	3	no	no	Physics 3.5 - Demonstrate understanding of Modern Physics