

# Access to H.E. National Programme Unit



Unit Title:	Magnetic Fields and Electromagnetic Induction		
Graded Unit Code:	GA33PHY01	Ungraded Unit Code:	UA33PHY01
Pathway(s):	Science and Engineering Construction and the Built Environment		
Module(s):	Physics		
Level:	3	Credit Value:	3
Valid from:	31 <sup>st</sup> July 2021	Valid to:	31 <sup>st</sup> July 2026

**The following QAA grade descriptors must be applied if you are delivering the graded version of this unit:**

1	Understanding of the subject
2	Application of knowledge
3	Application of skill
7	Quality

LEARNING OUTCOMES	ASSESSMENT CRITERIA
<b>The learner will:</b>	<b>The learner can:</b>
1. Understand the behavior of electrons in magnetic and electric fields	1.1 Explain the behavior of charged particles moving normally to a uniform magnetic field
	1.2 Explain the behavior of charged particles moving normally to a uniform electric field
	1.3 Solve simple problems involving electrons moving normally to a uniform magnetic and electric fields
2. Understand magnetic flux density and the effect of a magnetic field on a current carrying conductor	2.1 Define magnetic flux density and its units
	2.2 Explain the force on a current carrying conductor in a magnetic field

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	2.3	Solve problems to calculate the force on a current carrying conductor in a magnetic field
	2.4	Outline the operation of AC and DC electric motors
3. Understand electromagnetic induction and its effects	3.1	Explain electromagnetic induction
	3.2	State Lenz's Law and Faraday's Law and use them to solve problems
	3.3	Outline the operation of a simple generator
	3.4	Describe and explain the operation of a transformer
	3.5	Solve simple problems involving input and output voltage of transformers