

Access to H.E. National Programme Unit



Unit Title:	Heat and Thermodynamics		
Graded Unit Code:	GA33PHY05	Ungraded Unit Code:	UA33PHY05
Pathway(s):	Science and Engineering Construction and the Built Environment		
Module(s):	Physics		
Level:	3	Credit Value:	3
Valid from:	31 st July 2021	Valid to:	31 st 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
The learner will:	The learner can:
1. Understand the basic concepts of thermometry	1.1 Define temperature and fixed points
	1.2 Explain the basic requirements for a thermometer, e.g. liquid in glass thermometer
	1.3 Define absolute zero and the triple point of water
	1.4 Define the kelvin and celsius scales and give the relationship between them
2. Understand the transfer of heat energy	2.1 Explain heat energy and the difference between heat and temperature
	2.2 Describe the mechanisms for the transfer of heat energy by conduction, convention and radiation

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	2.3	Define thermal conductivity and compare it to electrical conductivity
	2.4	Solve simple problems involving thermal conductivity, e.g. heat loss through walls and windows
3 Understand the effects of the transfer of heat energy	3.1	Define specific heat capacity and latent heat of fusion and vaporization and solve problems involving these quantities
	3.2	State the gas laws and the equation of state for an ideal gas
	3.3	Solve problems involving the gas laws and the equation of state for an ideal gas
4 Understand the first Law of Thermodynamics	4.1	State the first Law of Thermodynamics and explain it in terms of energy conservation
	4.2	Solve problems involving isothermal, adiabatic and constant volume changes