

## Access to Higher Education Unit

This unit forms part of an Access to HE Diploma. If delivering the graded version of this unit, please refer to the Provider Handbook for details on grading descriptors and the application of these across units within your programme.

**Unit Title:** Heat and Thermodynamics

**Graded Unit Reference Number:** GA33PHY05

**Ungraded Unit Reference Number:** UA33PHY05

**Module:** Physics

**Level:** Three (3)

**Credit Value:** Three (3)

**Minimum Guided Learning Hours:** 30

Learning Outcome (The Learner will):	Assessment Criterion (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, convection and radiation
	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