

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: Astrophysics

Graded Unit Reference Number: GA33PHY22

Ungraded Unit Reference Number: UA33PHY22

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 how telescopes work and are used to observe astronomical objects	1.1 Describe the principle of an astronomical telescopes consisting of two converging lenses, reflecting and refracting telescopes, including the relative merits of each. Draw ray diagrams for image formation
	1.2 Compare and contrast the differences of radio telescopes and optical telescopes including the structure, positioning, use, resolving and collecting powers
	1.3 Evaluate the use of large diameter telescopes in observing astronomical objects
2. Understand how stars are classified	2.1 Describe the classification of stars by their luminosity and spectral class, including the interpretation of the Hertzsprung-Russell diagram
	2.2 Define absolute magnitude with due reference to the terms parsec and light year
	2.3 Explain the classification of stars by their temperature with reference to black-body radiation

	2.4	Calculate the black-body temperature of sources using Wien's displacement law
	2.5	Use the Stefan-Boltzman Law to compare the power output (luminosity)
	2.6	Apply Wien's Law and the Stefan-Boltzman Law to classify stars
3. Understand concepts in astrophysics and cosmology	3.1	Describe the "timeline" of the universe as currently theorised by scientists
	3.2	Use the doppler effect to solve calculations related to binary stars, galaxies and quasars and explain the different methods for measuring distances of stars
	3.3	Apply Hubble's Law to interpret and explain the expansion of the universe as currently theorised by scientists
	3.4	Explain what quasars are, including their discovery and formation
	3.5	Explain and evaluate the methods used to detect exoplanets