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: From Cells to Organ Systems

Graded Unit Reference Number: GA36BIO33

Ungraded Unit Reference Number: UA36BIO33

Module: Biology; Human Biology; Health Studies

Level: Three [3]

Credit Value: Six [6]

Minimum Guided Learning Hours: 60

Units barred for selection against this unit:

- **Organisation of the Body (GA33BIO13 / UA33BIO13)**
- **The Cell (GA33BIO08 / UA33BIO08)**

Learning Outcome (The Learner will):	Assessment Criterion (The Learner can):
1. Understand the structure of cells as seen from under light and electron microscopes	1.1 Identify and describe the functions of two named animal cells and two named plant cells
	1.2 Describe the functions of organelles found within animal cells and plant cells, as seen under the electron microscope
	1.3 Compare the features of light and electron microscopy in terms of specimen preparation, illumination, image formation, magnification, and resolution
	1.4 Identify organelles from images taken from electron and light microscopes
2. Understand how the function of the cell membrane is related to its structure	2.1 Explain why the structure of the cell membrane is described as a 'fluid mosaic model' and explain how the properties of the molecules that make up the cell membrane contribute to its structure and function

Learning Outcome (The Learner will):	Assessment Criterion (The Learner can):
	2.2 Compare ways in which a range of substances cross the plasma membrane or structure of cell membranes
3. Understand the importance of cell division	3.1 Compare and contrast the stages and products of mitosis and meiosis
	3.2 Explain the fate of cells produced by mitosis and meiosis in humans
	3.3 Analyse the difference between cell division and cell differentiation for a named cell in terms of the products of those processes
4. Understand the need for cell specialisation and relate this to the functions of different tissues	4.1 Explain the specialised features of the following human cells; red blood cell, ovum (egg cell), sperm cell, nerve cell, and epithelial cell
	4.2 Describe the key features of stem cells compared to specialised cells
	4.3 Identify the four basic types of tissue in the human body and describe their main features
	4.4 Give two examples of each of the four tissue types outlining their specific functions and their location in the body
5. Understand how organs and organ systems function in the human body	5.1 Identify the organ systems of the human body
	5.2 Choose three organ systems of the human body; identify the organs which make up each system, and the functions of each organ system
	5.3 Choose two organ systems of the human body; explain how these two systems work together to perform a function in the human body. [*Note: the two organ systems chosen here do not have to be the same as any chosen in 5.2 although they can be.]*