Access to H.E.
National Programme Unit

Unit Title	Practical Microbiological Techniques		
Graded Unit Code:	GA36BIO24	Ungraded Unit Code:	UA36BIO24
Pathway(s)	Health Science and Engineering		
Module(s)	Microbiology		
Level	3	Credit Value	6
Valid from:	31st July 2021	Valid to:	31st July 2026

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

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	**The learner can:**
1. Know how to identify micro-organisms	1.1 Describe the key characteristics of the main subgroups of bacteria, viruses and fungi
	1.2 Assess the usefulness of a variety of identification techniques in identifying different micro-organisms
2. Be able to use laboratory techniques to identify micro-organisms	2.1 Use suitable techniques to identify a range of bacteria based on colony and cell shape
	2.2 Use the GRAM stain procedure to distinguish between a Gram positive and Gram negative species
	2.3 Explain the significance of endospores and use a suitable staining technique to identify a spore forming species
3. Be able to use a range of techniques to manipulate microorganisms in laboratory conditions	3.1 Assess how a range of aseptic techniques can prevent contamination of the environment and cultures

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	**The learner can:**
	3.2 Evaluate a range of techniques that can be used to manipulate microorganisms in laboratory
	3.3 Use a range of techniques to manipulate bacteria growth in liquid and on sold media
	3.4 Describe the techniques that can be used to estimate the number of colony form units (viable bacteria or spores)
	3.5 Successfully isolate several species of bacteria from a mixed culture
4. Be able to use laboratory techniques to monitor the growth patterns of micro-organisms	4.1 Analyse factors that influence the growth of micro-organisms
	4.2 Use dilution and microscopic techniques to estimate total count in a culture of yeast cells and a broth grown bacterial culture
	4.3 Use the plug transfer method to prepare cultures of a mat-forming fungus and use these to investigate the effect of an environmental factor on rate of growth
	4.4 Determine the Biological Oxygen Demand (BOD) in a sample of water and explain how this can be a measure of water quality