

Access to H.E. National Programme Unit



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| Unit Title: | Microbial Biotechnology | | |
| Graded Unit Code: | GA33BIO23 | Ungraded Unit Code: | UA33BIO23 |
| Pathway(s): | Health Science and Engineering | | |
| Module(s): | Microbiology | | |
| Level: | 3 | Credit Value: | 3 |
| Valid from: | 1 st August 2014 | Valid to: | 31 st July 2024 |

The following QAA grade descriptors must be applied if you are delivering the graded version of this unit:

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| 1 | Understanding of the subject |
| 2 | Application of knowledge |
| 7 | Quality |

| LEARNING OUTCOMES | | ASSESSMENT CRITERIA | |
|--------------------------|----------------------------------------------------------------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The learner will: | | The learner can: | |
| 1 | Understand the nature and importance of biotechnology in a historical context. | 1.1 | Define the term biotechnology and identify traditional and modern examples. |
| | | 1.2 | Explain the advantages in the use of microbes in biotechnology. |
| 2 | Understand the principles involved in the identification and production of useful products from microorganisms | 2.1 | Describe the techniques used to identify potential new products from microbial sources (screening) |
| | | 2.2 | Use specific examples to identify different types of product from microbial sources and describe the processes involved in purification of the product (downstream processing) |

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| LEARNING OUTCOMES | ASSESSMENT CRITERIA |
|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| The learner will: | The learner can: |
| | 2.3 Explain the stages and challenges involved in scaling up production from laboratory scale to industrial scale |
| 3 Understand the use of large scale fermenters for commercial production of microbial products | 3.1 Identify and explain the function of the main components of an industrial fermenter |
| | 3.2 Distinguish between batch and continuous fermentation and identify advantages and disadvantages of each method |
| | 3.3 Interpret data or graphs relating the depletion of feedstock and concentration of product in a fermenter over time |