



**AFRICAN  
BIOMANUFACTURING  
Workforce Training  
and Skills Development  
Programme**



**science & innovation**

Department:  
Science and Innovation  
REPUBLIC OF SOUTH AFRICA



**CSIR**  
Touching lives through innovation



**The CSIR is pleased to announce the commencement of its course titled: *Quality Control and Downstream operations in Biomanufacturing course (CSIR-BQ-1A)*, scheduled to start on Monday, 26 August 2024, as part of its African Bio-Manufacturing Workforce Training and Skills Development Programme.**

**The aim of the programme is to support training and development in the biomanufacturing sector focusing on developing a skilled and competent workforce within the sector in Africa. It was launched in 2023 and will run over a period of three years.**

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## **COURSE IN QUALITY CONTROL AND DOWNSTREAM OPERATIONS IN BIOMANUFACTURING (CSIR-BQ-1A)**

**The CSIR's goal in providing this course is to assist in growing and developing the biomanufacturing sector on the African continent through cutting edge training and innovative bioprocess solutions.**

The course is offered to African manufacturers, scientists and other key players in the development and scaling-up of biomanufacturing

processes and products. A key aspect of this programme is to provide hands-on training and skills development that will enable local manufacturing of biologics, vaccines, recombinant proteins and therapeutics. This programme is aligned to a number of other initiatives that are focused on establishing vibrant biomanufacturing industries on the African continent. These include the Biomanufacturing Industry Development Center (BIDC) and the Industrial Biocatalysis Hub (IBH), hosted at the CSIR.

## COURSE DESCRIPTION

The Biopharmaceutical Quality course provides comprehensive competency building and skills transfer across all aspects relating to biomanufacturing, emphasis will be around quality control considerations and hands-on training on key downstream unit operations, including fill and finish.

This course will be delivered as a mixed model of applied and advanced knowledge transfer in the form of classroom-based lectures, workshops and hands-on training.



## KEY AREAS OF DEVELOPMENT INCLUDE:

- cGMP in Biomanufacturing
  - Principles of GMP (quality control, process and cleaning validation, equipment qualification)
  - Aseptic processing
  - Single-use manufacturing
  - Scale-up and scale-down principles
  - Regulatory and compliance
  - Outlining the process documentation and protocols required for Good Manufacturing Practice (cGMP)
  - Data management and storage
  - Raw material verification
- Specialised competency development on key downstream bio-manufacturing unit operations
  - Solid-liquid separation (centrifugation)
  - Filtration (depth, membrane, microfiltration, ultrafiltration, reverse osmosis and tangential flow filtration)
  - Cell disruption (chemical, French press and high-pressure homogenisation)
  - Concentration (evaporation, liquid-liquid extraction, membrane, precipitation, adsorption)
  - Purification by chromatography (size exclusion, ion-exchange, affinity, hydrophobic interaction, reverse phase)
  - Formulation (liquid and dry stable, freeze-drying/lyophilisation)
  - Fill and finish



## COURSE DATE AND DURATION

**DATE: 26 AUGUST 2024-19 SEPTEMBER 2024**

**DURATION: 2 WEEKS ONLINE LECTURES (26 AUGUST TO 06 SEPTEMBER 2024) AND 2 WEEKS INTENSIVE IN-PERSON TRAINING (09 - 19 SEPTEMBER 2024) AT CSIR, PRETORIA, SOUTH AFRICA**



## COURSE DELIVERY

The course is delivered using a blended format to transfer advanced knowledge, including:

- Hands-on training
- Classroom-based lectures (online\* and in person)
- Workshops

*\*Please note that you will need a good quality internet connection to be able to participate effectively in the online sessions. It is recommended that a good download and upload speed is at least 5-10 Mbps.*

## COST AND FINANCING

Please note that a maximum of 25 candidates will be selected. For South African candidates, the funding includes:

- Course fees
- Travel (flights) and accommodation for the two weeks on-site training
- Ground transport return from the airport to accommodation x 1
- Daily ground transport from accommodation to the CSIR (course venue)

Scholarships will be provided for 5 participants from the African continent based on the submitted motivations.

Subsistence and travel allowance (S&T) will not be covered.



## WHO SHOULD ATTEND?

### Preference will be given to the following candidates:

- Current staff in the Biomanufacturing sector requiring skills expansion/upgrading
- New or developing staff in the Biomanufacturing sector
- Identified staff or new recruits into a biomanufacturing facility
- From biomanufacturing facilities currently under construction that will require skilled workforce

**APPLICATIONS** from qualified persons from all AU Member states will be accepted. Young females are encouraged to apply. Scholarships will only be available to South Africans holding a Master's or PhD degree. For enquiries, please email [BIDC@CSIR.co.za](mailto:BIDC@CSIR.co.za).

## IMPORTANT DATES

- **Deadline for submission of applications: 30 JUNE 2024**
- **Selected candidates will be notified by 19 JULY 2024**

Applications should be submitted by filling in the application form available on the following link:

<https://bit.ly/4c9k8Z1>

[Application Form.](#)

