



SOUTHERN AFRICAN BIOMANUFACTURING TRAINING HUB



science, technology
& innovation

Department:
Science, Technology and Innovation
REPUBLIC OF SOUTH AFRICA



CSIR

Touching lives through innovation



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BIOMANUFACTURING TRAINING HUB



The CSIR-hosted **Southern African Biomanufacturing Training Hub** is pleased to announce the commencement of a course titled “Process Modelling and Techno-Economic Assessment (TEA) using SuperPro Designer (A-BTH09)”, scheduled to begin on Monday, **28 September 2026**. The course forms part of the Strengthening Biomanufacturing Capabilities in Southern Africa programme, supported by KFW Development Bank.

The programme aims to support training and skills development in the biomanufacturing sector, with a focus on developing a skilled and competent workforce across Africa.

PROCESS MODELING AND TEA USING SUPERPRO DESIGNER

The Southern Africa Biomanufacturing Training Hub offers this course to support the growth and development of the biomanufacturing sector across Africa through cutting-edge training developed in partnership with local and international stakeholders.

The course is designed for African manufacturers, scientists and other key stakeholders involved in the development and scale-up of biomanufacturing processes and products. A key component of the programme is the provision of theoretical hands-on training and skills development to support local manufacturing of biologics, vaccines, recombinant proteins and therapeutics. This programme is aligned with several other initiatives focused on establishing vibrant biomanufacturing industries across Africa.

COURSE DESCRIPTION

The course provides participants with a practical introduction to process modelling, simulation and economic evaluation of bioprocesses and related manufacturing systems using SuperPro Designer®. The course covers the development of process flow diagrams, modelling of upstream and downstream operations, mass and energy balance calculations, equipment sizing, scheduling and process optimisation. Participants will also learn how to conduct TEAs, including capital and operating cost estimation, profitability analysis and the evaluation of process alternatives. Through guided examples and hands-on case studies, participants will gain the knowledge and skills required to develop, analyse and present process models that support research, development, scale-up and commercial decision-making in biotechnology and related industries.

The course follows an applied and advanced knowledge-transfer approach, combining live instructor-led lectures, interactive workshops, demonstrations and hands-on training using SuperPro Designer®. Participants will engage in practical modelling exercises, case studies and group discussions designed to develop competency in process modelling and TEA within a virtual learning environment.

KEY AREAS OF DEVELOPMENT INCLUDE:

- Fundamentals of process modelling and simulation using SuperPro Designer®;
- Development and interpretation of process flow diagrams;
- Modelling and analysis of upstream and downstream bioprocess operations;
- Mass and energy balance calculations;
- Equipment selection, sizing and process scheduling;
- Process optimisation and evaluation of alternative process configurations;
- TEA, including capital and operating cost estimation;
- Economic performance analysis and decision-making for process development and scale-up;
- Application of process modelling principles through practical case studies and hands-on exercises; and
- Communication and presentation of process modelling results and economic analyses

These focus areas will equip participants with the knowledge and practical skills required to design, evaluate and optimise bioprocesses and related manufacturing systems.





COURSE DATE AND DURATION

**DATE: 28 SEPTEMBER 2026 – 2 OCTOBER 2026
(ONLINE)**

**DURATION: FIVE DAYS (ONLINE VIA
MICROSOFT TEAMS)**



COURSE DELIVERY

The course will be delivered online using an advanced knowledge-transfer approach that includes:

- Online classroom-based lectures; and
- Case studies with free access to a demo model.

*Please note that a reliable internet connection is required to participate in the online sessions. A minimum download and upload speed of 5 – 10 Mbps is recommended.



COST AND FINANCING

No cost for attending the course

WHO SHOULD ATTEND?

Preference will be given to the following candidates:

- Current staff in the biomanufacturing sector requiring skills expansion or upgrading;
- New or developing staff in the biomanufacturing sector;
- Identified staff members or new recruits for a biomanufacturing facility; and
- Staff from biomanufacturing facilities currently under construction that will require a skilled workforce.

APPLICATIONS from qualified individuals from all African Union member states will be accepted. Young African women are especially encouraged to apply. Participation is open only to candidates holding a diploma or relevant B-degree qualification, an Honours degree, Master's degree or PhD . For enquiries, please contact **BIDC@csir.co.za**.

IMPORTANT DATES

- **Deadline for submission of applications: 14 August 2026**
- **Notification of selected candidates 24 August 2026**

Applications should be submitted by completing the application form available [here](#).

