

UNSW Recombinant Products Facility

Short Courses

Join our Bioprocessing Short Courses

Gain in-depth knowledge of biomanufacturing through expert-led theory and practical, hands-on training. Our courses are designed for researchers, professionals, and anyone looking to build skills in some aspect of bioprocessing of proteins and pDNA.



Plasmid & linearised DNA

Delivered in partnership with the UNSW RNA Institute

5-day course | on demand

Master the production and purification of plasmid and linear DNA essential components for gene therapy, vaccine development, and mRNA platforms.

Biologics Downstream Processing

5-day course | on demand

Gain a comprehensive understanding of each of the unit of operations in a downstream process from chromatography to different types of filtration (depth filtration, normal flow filtration and Tangential Flow Filtration) with guidance on process development, tech transfer and process scaling.

Chromatography in Downstream Processing – Basics

1-day course | on demand

An introductory course for beginners, covering chromatography principles with guided, hands-on practice on chromatography systems.

Chromatography in Downstream Processing- Advanced

4-day course | on demand

In-depth exploration of chromatography modes, media, and process parameters, with practical training to support process development, tech transfer and process scaling.

Filtration in Downstream Processing

3-day course | on demand

Hands-on training in depth, normal flow, and tangential flow filtration, with guidance on filter selection, process development, tech transfer and process scaling.

Fermentation for Biologics Production – Basics

2-day course | on demand

Introductory training in microbial fermentation, combining essential theory with hands-on experience in ferment operation.

These hands-on courses provide the skills and knowledge to advance your research, pre-clinical, and clinical applications. Learn from leading experts and enhance your expertise in this rapidly evolving field. [Sign up now](#) to secure your spot!



pDNA and linDNA Production, Purification and Quality Control

Delivered in partnership with the UNSW RNA Institute

This course provides comprehensive theory and hands-on training from e. coli based production of plasmid DNA (pDNA) through to purified, linearised DNA template (linDNA) as a starting material for mRNA production.

The course covers multiple techniques relevant from the research bench up to large-scale bioprocessing as well as basic quality control to quantify and analyse product quality. The course includes an overview of Quality Management Systems (QMS) requirements, Bioprocess Engineering and Process Development, and insights into process tech transfer to large-scale GMP manufacturing facilities.

Course Details:



5 days



UNSW Kensington campus



\$5,000 per participant

Course Objectives:

Give participants a combination of theory and practical, hands-on experience in producing, purifying and analysing the quality of plasmid DNA and linearised DNA template for mRNA therapeutics.

Learning Outcomes:

Upon successful completion of the course, participants will:

- Have a fundamental understanding of mRNA-LNP therapeutics manufacturing processes.
- Have a sound understanding of plasmid DNA and linearised DNA template manufacturing processes.
- Have a sound understanding of plasmid DNA and linearised DNA template purification processes.
- Have a sound understanding of plasmid DNA and linearised DNA template quality control methods.
- Gain hands-on experience in aseptic, pDNA and linDNA handling techniques.
- Gain hands-on experience in production of pDNA and linDNA.
- Gain hands-on experience in purification of pDNA and linDNA.
- Gain hands-on experience in quality control of pDNA and linDNA.
- Have a fundamental understanding of Quality Management Systems (ISO 9001, GMP).
- Have a fundamental understanding of Bioprocess Engineering and Process Development concepts.
- Have a fundamental understanding of tech transfer from bench research to large-scale GMP manufacturing facilities.

Participants will have the option to receive a Certificate of Attendance (not assessed) or a Certificate of Completion (assessed).



Biologics Downstream Processing

This course offers comprehensive theory and hands-on training across the core unit operations of downstream bioprocessing for biologics with a focus on proteins and pDNA including chromatography and filtration (depth, normal flow, and tangential flow).

Participants will learn techniques relevant from the research bench through to large-scale manufacturing, along with fundamental quality control approaches to assess product quality. The program also introduces concepts of Quality by Design, process validation, bioprocess engineering, process development, and considerations for technology transfer to GMP manufacturing.

Course Details:



5 days



UNSW Kensington campus



\$5,000 per participant

Course Objectives:

Provide participants with both theoretical knowledge and practical, hands-on training in downstream processing for biologics.

Learning Outcomes:

Upon successful completion of the course, participants will:

- Have a fundamental understanding of downstream manufacturing processes, their main unit operations, and how they interconnect...
- Have a sound understanding of chromatography principles and their application in downstream processing.
- Have a sound understanding of the principles and applications of depth, normal flow, and tangential flow filtration.
- Have a sound understanding of the relationship between Process Parameters of unit operations to critical Quality Attributes of a product.
- Gain hands-on experience in in chromatography applications, system operation, and process development.
- Gain hands-on experience in depth filtration principles and process development, including filter choice and sizing.
- Gain hands-on experience in operating and optimising tangential flow filtration for concentration and diafiltration
- Have a fundamental understanding of Quality by Design, process validation, bioprocess engineering, and process development.
- Have a fundamental understanding of tech transfer from research scale to GMP manufacturing.

Participants will have the option to receive a Certificate of Attendance (not assessed) or a Certificate of Completion (assessed).



Chromatography in Downstream Processing – Basics

This introductory course provides beginners with a solid foundation in chromatography for biologics purification. Participants will learn chromatography principles, system components, set-up, programming, and operation, along with sample preparation and purification using affinity chromatography.

Course Details:



1 day



UNSW Kensington campus



\$1,000 per participant

Course Objectives:

Give participants essential theory and hands-on training in chromatography for downstream processing.

Learning Outcomes:

Upon successful completion of the course, participants will:

- Have a fundamental understanding of basic principles of chromatography and its role in downstream processing.
- Have a fundamental understanding of chromatography systems their key components and their functions.
- Gain hands-on experience in operating a chromatography system including set-up, programming, operating, Cleaning-In-Place, and shutdown.
- Gain hands-on experience in preparing and purifying a sample and understand a chromatogram.

Participants will have the option to receive a Certificate of Attendance (not assessed) or a Certificate of Completion (assessed).



Chromatography in Downstream Processing – Advanced

This advanced course provides in-depth theory and practical training on chromatography as a core unit operation in downstream processing. Participants will explore multiple chromatography modes, chemistries, supports, and applications, gaining skills relevant from bench-scale research through to large-scale manufacturing.

The course also introduces key concepts in Quality by Design, process validation, bioprocess engineering, process development, and technology transfer to GMP facilities.

Course Details:



4 days



UNSW Kensington campus



4,000 per participant

Course Objectives:

Give participants a combination of theory and practical, hands-on experience in chromatography for biologics purification and process development and tech transfer.

Learning Outcomes:

Upon successful completion of the course, participants will:

- Have a sound understanding of advanced chromatography principles and their applications in downstream processing.
- Have a sound understanding of different chromatography chemistries, supports, modes, and process parameters.
- Have a sound understanding of chromatography process development.
- Gain hands-on experience on chromatography systems to design and conduct complex experiments.
- Gain hands-on experience in applying various chromatography chemistries, supports, and modes.
- Gain hands on experience in chromatography process development.
- Have a fundamental understanding of Quality by design and process validation, Bioprocess Engineering and Process Development concepts.
- Have a fundamental understanding of tech transfer from bench research to large-scale GMP manufacturing facilities.

Participants will have the option to receive a Certificate of Attendance (not assessed) or a Certificate of Completion (assessed).






Filtration in Downstream Processing

This course provides comprehensive theoretical and practical training on the major filtration methods used in downstream processing, including depth filtration, normal flow filtration, and tangential flow filtration (for both concentration and diafiltration).

Participants will learn the principles, set-up, and process development strategies for each technique, from research-scale studies through to large-scale manufacturing. The course also introduces Quality by Design, process validation, bioprocess engineering, process development, and considerations for technology transfer to GMP facilities.

Course Details:

	3 days
	UNSW Kensington campus
	\$3,000 per participant

Course Objectives:

Give participants a combination of theory and practical, hands-on experience in biologics filtration.

Learning Outcomes:

Upon successful completion of the course, participants will:

- Have a fundamental understanding of the different types of filtration and their application in downstream processing with consideration of process parameters and product quality.
- Have a sound understanding of depth filtration.
- Have a sound understanding of Tangential Flow Filtration
- Gain hands-on experience in process development strategies for depth filtration, including filter choice and sizing
- Gain hands-on experience in operating tangential flow filtration systems, including set-up, operation, cleaning-in-place, and shutdown.
- Gain hands-on experience in Tangential Flow Filtration process development (concentration and diafiltration mode)
- Have a fundamental understanding of Quality by design and process validation, Bioprocess Engineering and Process Development concepts.
- Have a fundamental understanding of tech transfer from bench research to large-scale GMP manufacturing facilities.

Participants will have the option to receive a Certificate of Attendance (not assessed) or a Certificate of Completion (assessed).






Fermentation for Biologics Production – Basics

This introductory course provides both theory and hands-on training in microbial fermentation in the application of biologics production.

Participants will learn fermentation principles, equipment components, and parameters, as well as how to prepare, set up, and operate a fermentor in batch mode.

Course Details:

	2 days
	UNSW Kensington campus
	\$2,000 per participant

Course Objectives:

Give participants a combination of theory and practical, hands-on experience operate a microbial fermentor for biologics production from preparation through to harvest.

Learning Outcomes:

Upon successful completion of the course, participants will:

- Have a fundamental understanding of fermentation principles.
- Have a sound understanding of ferments components and fermentation parameters
- Gain hands-on experience in operating a ferment including preparation, sterilisation, set-up, inoculation, harvest, decontamination, and cleaning
- Gain hands-on experience in fermentation techniques for protein production.

Participants will have the option to receive a Certificate of Attendance (not assessed) or a Certificate of Completion (assessed).