



WPI

BIOMANUFACTURING EDUCATION & TRAINING CENTER

ENHANCE YOUR SKILLS & ADVANCE YOUR CAREER

Downstream Principles and Techniques

This four day training program provides an introduction to downstream processing and the major unit operations involved. Fifty five percent of this program is hands-on in the lab. This program was developed for those new to downstream processing who wish to gain hands-on experience and practice running NFF, TFF and Chromatography unit operations.

SCHEDULE:

Day 1

Lectures (4 hrs.)

- Downstream Biomanufacturing Process Overview
- Principles of Centrifugation
- Principles of Forward Flow Filtration
- Principles of Chromatography
- Equations for column operations & packing

Labs (3 hrs.)

- Continuous Flow Centrifugation (disc stack)
- Filtration
- Column preparation, packing equations & resin slurry determination

Day 2

Lectures (2 hrs.)

- Introduction to Protein for Downstream Processing

Labs (6 hrs.)

- Column Assembly, Packing & Qualifications
- Drip column pH & Conductivity Testing

Day 3

Lectures (2 hrs.)

- Virus Inactivation & Removal

Labs (6 hrs.)

- Chromatography Column Operation (bench scale and pilot scale)

Day 4

Lectures (4 hrs.)

- TFF Principles and Applications
- Chemical Analysis
- Introduction to Downstream Disposables and Processing

Labs (3 hrs.)

- TFF (UF/DF multiple stations)



Learn More: WPI.edu/+BETC

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