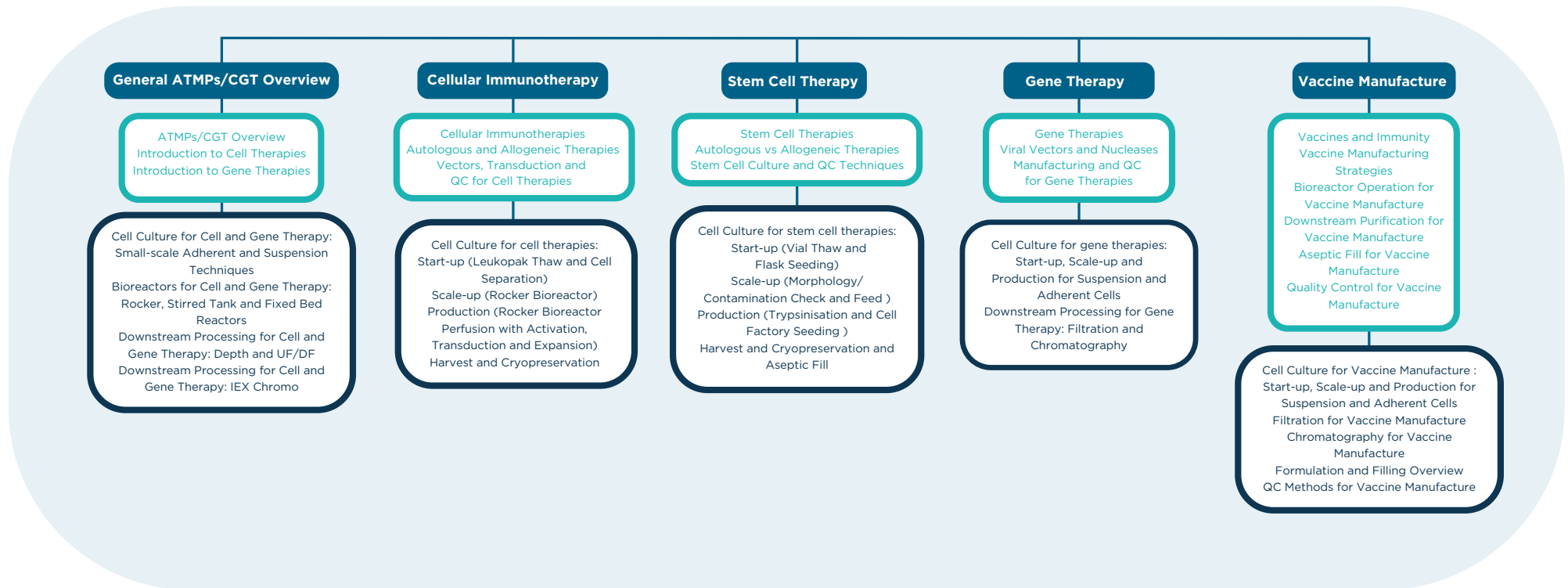


Cell and Gene Therapy and Vaccine Manufacturing Curriculum

— Lectures
— Practicals



General ATMPs/CGT Overview

ATMPs/CGT Overview
 Introduction to Cell Therapies
 Introduction to Gene Therapies

Cell Culture for Cell and Gene Therapy:
 Small-scale Adherent and Suspension Techniques
 Bioreactors for Cell and Gene Therapy:
 Rocker, Stirred Tank and Fixed Bed Reactors
 Downstream Processing for Cell and Gene Therapy:
 Depth and UF/DF
 Downstream Processing for Cell and Gene Therapy:
 IEX Chromo

Cellular Immunotherapy

Cellular Immunotherapies
 Autologous and Allogeneic Therapies
 Vectors, Transduction and QC for Cell Therapies

Cell Culture for cell therapies:
 Start-up (Leukopak Thaw and Cell Separation)
 Scale-up (Rocker Bioreactor)
 Production (Rocker Bioreactor Perfusion with Activation, Transduction and Expansion)
 Harvest and Cryopreservation

Stem Cell Therapy

Stem Cell Therapies
 Autologous vs Allogeneic Therapies
 Stem Cell Culture and QC Techniques

Cell Culture for stem cell therapies:
 Start-up (Vial Thaw and Flask Seeding)
 Scale-up (Morphology/ Contamination Check and Feed)
 Production (Trypsinisation and Cell Factory Seeding)
 Harvest and Cryopreservation and Aseptic Fill

Gene Therapy

Gene Therapies
 Viral Vectors and Nucleases
 Manufacturing and QC for Gene Therapies

Cell Culture for gene therapies:
 Start-up, Scale-up and Production for Suspension and Adherent Cells
 Downstream Processing for Gene Therapy: Filtration and Chromatography

Vaccine Manufacture

Vaccines and Immunity
 Vaccine Manufacturing Strategies
 Bioreactor Operation for Vaccine Manufacture
 Downstream Purification for Vaccine Manufacture
 Aseptic Fill for Vaccine Manufacture
 Quality Control for Vaccine Manufacture

Cell Culture for Vaccine Manufacture :
 Start-up, Scale-up and Production for Suspension and Adherent Cells
 Filtration for Vaccine Manufacture
 Chromatography for Vaccine Manufacture
 Formulation and Filling Overview
 QC Methods for Vaccine Manufacture