



Pharmaceutical and Biotechnology Processes (New!)

Course Objective: To provide an understanding of different processes which are part of the pharmaceutical and biotechnology facilities. Specific processes will be presented in details along with industry examples.

Course Description: This comprehensive course covers overall contemporary state of the technologies associated with pharmaceutical and biotechnology processes and different dosage forms. Manufacturing processes and unit operations, facility, personnel, and microbial and quality control requirements will be discussed in details for pharma and biotech processes of different dosage forms.

Course Outline:

- Sterile products /Dosage Forms
- Liquid dosage forms (Large Volume Parenterals)
 - aseptically prepared, terminally sterilized
- Liquid dosage forms (Small Volume Parenterals)
 - aseptically prepared, terminally sterilized, eye drops
- Semi-solid dosage forms
- Solid dosage forms
 - solid fill, freeze-dried
- Non-sterile products/Dosage Forms
- Liquid dosage forms
- Semi-solid dosage forms- topicals (creams, ointments, gels, etc.)
- Solid dosage forms
 - unit dose form (tablets, capsules, suppositories, etc.), multi dose form (powders, granules)
- Biological products Dosage Forms
- Vaccines
- Blood products
- Other (e.g. hormones, enzymes of human or animal origin, genetically engineered products)
- Pharmaceutical and Biotechnology Processes
- Dispensing, Granulating, Drying. Blending, Compressing, Coating, Mixing,
- Material Transfer, Filling
- Clean-in-Place, Steam-In-Place

- Upstream Processing in Biotech facility, Downstream Processing in Biotech facility
- Media Preparation
- Fermentation, Separation, Purification
- Lyophilization
- Sterilization Processes
- Steam Sterilization Autoclaves, Dry Heat Sterilization, Depyrogenation
- Ethylene oxide Sterilization, Cobalt 60 Radiation Sterilization
- Filtration
- Aseptic Filling